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## Drugs for preventing postoperative nausea and vomiting (Review)

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Drugs for preventing postoperative nausea and vomiting.

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# Drugs for preventing postoperative nausea and vomiting

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## ABSTRACT

### Background

Drugs can prevent postoperative nausea and vomiting, but their relative efficacies and side effects have not been compared within one systematic review.

### Objectives

The objective of this review was to assess the prevention of postoperative nausea and vomiting by drugs and the development of any side effects.

### Search methods

We searched The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, Issue 2, 2004), MEDLINE (January 1966 to May 2004), EMBASE (January 1985 to May 2004), CINAHL (1982 to May 2004), AMED (1985 to May 2004), SIGLE (to May 2004), ISI WOS (to May 2004), LILAC (to May 2004) and INGENTA bibliographies.

### Selection criteria

We included randomized controlled trials that compared a drug with placebo or another drug, or compared doses or timing of administration, that reported postoperative nausea or vomiting as an outcome.

### Data collection and analysis

Two authors independently assessed trial quality and extracted outcome data.

### Main results

We included 737 studies involving 103,237 people. Compared to placebo, eight drugs prevented postoperative nausea and vomiting: droperidol, metoclopramide, ondansetron, tropisetron, dolasetron, dexamethasone, cyclizine and granisetron. Publication bias makes evidence for differences among these drugs unreliable. The relative risks (RR) versus placebo varied between 0.60 and 0.80, depending upon the drug and outcome. Evidence for side effects was sparse: droperidol was sedative (RR 1.32) and headache was more common after ondansetron (RR 1.16).

## Authors' conclusions

Either nausea or vomiting is reported to affect, at most, 80 out of 100 people after surgery. If all 100 of these people are given one of the listed drugs, about 28 would benefit and 72 would not. Nausea and vomiting are usually less common and, therefore, drugs are less useful. For 100 people, of whom 30 would vomit or feel sick after surgery if given placebo, 10 people would benefit from a drug and 90 would not. Between one to five patients out of every 100 people may experience a mild side effect, such as sedation or headache, when given an antiemetic drug. Collaborative research should focus on determining whether antiemetic drugs cause more severe, probably rare, side effects. Further comparison of the antiemetic effect of one drug versus another is not a research priority.

## PLAIN LANGUAGE SUMMARY

### Drugs for preventing nausea and vomiting after surgery

We found eight drugs that reliably prevented nausea or vomiting after surgery. The drugs prevented nausea or vomiting in three or four people out of every 10 who would have vomited or felt nauseated with a placebo. We did not find reliable evidence that one drug was better than another. A person's age or sex, the type of surgery, or the time the drug was given did not change the effect of a drug. When drugs were given together, their effects simply added. Side effects were mild and affected four out of 100 people for the two drugs most studied.

Either nausea or vomiting are reported to affect, at most, 80 out of 100 people after surgery. If all 100 of these people are given a drug, about 28 would benefit and 72 would not. Nausea or vomiting are usually less common and therefore drugs are usually less useful.

Doctors should research how often drugs cause severe side effects.

## BACKGROUND

Postoperative nausea and vomiting (PONV) are unwanted outcomes after anaesthesia or sedation (Watcha 1992). Patients rate PONV as one of the least desirable events after surgery (Eberhart 2002; Engoren 2000; Gan 2001; Rashiq 2003). Postoperative nausea and vomiting can delay hospital discharge or result in unplanned admission. Vomiting can stress wounds, imbalance body electrolytes and cause bleeding (Watcha 1995c). Only a few factors, in just a few studies, have been shown to independently predict PONV: sex, history of smoking, motion sickness or PONV, duration of operation, and opioid administration (Apfel 2002b; Rüschi 2005; Van den Bosch 2005). Nausea or vomiting may be more frequent after some types of surgery, for example laparoscopy, strabismus and middle ear surgery (Cohen 1994; Kapur 1991; Kenny 1994; Kortilla 1992; Watcha 1992; Watcha 1995c). The risks of nausea or vomiting may vary with: preanaesthetic medication; anaesthetic drugs and techniques; postoperative pain management (Watcha 1992).

There are a number of published systematic reviews that report on one or more antiemetic drugs (Figueredo 1998; Gupta 2003; Henzi 1999; Henzi 2000; Hirayama 2001; Steward 2002; Tramèr 1995; Tramèr 1997; Tramèr 1999). These systematic reviews can

tell the reader how well those drugs prevent PONV. The effects of some drugs have not been summarized in systematic reviews. We have tried to provide the reader a single place to find the effect on PONV of any drug that has been studied. We will update this review on a regular basis.

## OBJECTIVES

Our objectives for this review were to determine the efficacy and safety of drugs for preventing postoperative nausea and vomiting. 'Prevention' means that the drug was given before a participant experienced either nausea or vomiting.

We assessed whether drugs changed the risks of two types of post-operative outcomes:

1. the risk of postoperative nausea or vomiting;
2. the risk of other adverse event/side effects.

We assessed each drug separately for these two primary analyses.

We also assessed whether:

1. the risks of postoperative nausea or vomiting are altered by the route of drug administration;
2. the risks of postoperative nausea or vomiting are altered by the timing of drug administration;
3. the risks of postoperative nausea or vomiting are altered by the dose of drug administered.

We only analysed the relative risks from within studies in these secondary analyses (intrastudy comparisons) - we did not compare the risks between one study and another (interstudy comparisons).

We performed four subgroup analyses (interstudy comparisons) based upon:

1. the age of the participant;
2. the sex of the participant;
3. the type of surgery;
4. the time the drug was administered.

These four exploratory interstudy subgroup analyses are not as reliable as the intrastudy analyses (primary and secondary analyses) because participants were not randomly allocated to one study or another. For the first subgroup analysis, we categorized studies as assessing adults, children, or both. If the study authors did not define their participants as child or adult, we categorized participants of more than 17 years old as adult. We examined the effect of timing of drug administration with the fourth subgroup analysis. This interstudy analysis compared event rates between different trials; this is not the same as the third of the secondary analyses, that only included trials within which participants were allocated to receive a drug at different times.

We performed two post-hoc analyses that we did not anticipate in the protocol. One assessed our decision to treat all control groups the same, whether or not the placebo group received a recognised antiemetic. The other analysis assessed studies of granisetron.

## METHODS

### Criteria for considering studies for this review

#### Types of studies

We included randomized controlled trials (RCTs) that evaluated the effect of a drug or drugs given before the onset of postoperative nausea and vomiting. We excluded studies of treatment for established postoperative nausea or vomiting and studies of anaesthetic drugs or analgesics.

#### Types of participants

We included participants undergoing general anaesthesia, regional anaesthesia or sedation.

#### Types of interventions

We included any drug allocated before the onset of postoperative nausea or vomiting compared with placebo, compared with no treatment or compared with another drug. The drug could be given preoperatively, at induction of anaesthesia, intraoperatively or postoperatively (before nausea or vomiting had occurred).

#### Types of outcome measures

We analysed:

1. the proportion of participants nauseated postoperatively;
2. the proportion of participants vomiting postoperatively;
3. the proportion of participants who were either nauseated or who vomited;
4. the proportion of participants treated for nausea or vomiting postoperatively;
5. the proportion of participants who experienced side effects (any adverse outcome).

#### Search methods for identification of studies

We searched The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, Issue 2, 2004) and DARE databases (to May 2004), MEDLINE (PubMed1966 to May 2004), EMBASE (1980 to May 2004), CINAHL (1982 to May 2004), AMED (1985 to May 2004), SIGLE (to May 2004), ISI WOS (to May 2004), LILAC (to May 2004) and INGENTA bibliographies. We used free text and their associated exploded MeSH terms. We assessed the studies we retrieved for any free text terms, MeSH terms for drugs that we had not already included. We updated the search strategy with new terms to increase the number of studies that we retrieved. We did not restrict the language. Please see [Appendix 1](#).

### Data collection and analysis

#### Trial identification

We first assessed study title and abstract. We retrieved copies of all eligible studies. We stated why we excluded studies (please see the table, '[Characteristics of excluded studies](#)').

## Quality assessment

We independently assessed: the method of allocation concealment (adequate, inadequate, unclear, not used); the method of randomization (adequate, inadequate, unclear); the blinding (yes, no) of allocation separately to the anaesthetist and the outcome assessor; follow up (complete, incomplete); and intention to treat analysis (yes, no). Please see the table '[Characteristics of included studies](#)' for more information.

## Data extraction

We recorded the type of participant, interventions and outcomes on a data extraction form. We did not contact study authors to supply missing data. We hope to retrieve some of these data when we update this systematic review.

## Analysis

We made the following comparisons:

- drug(s) versus placebo;
- drug(s) versus no treatment;
- drug(s) versus drug(s).

Authors used one or more of four outcomes to measure the effect of a drug: nausea; vomiting; nausea or vomiting; antiemetic treatment. We analysed these outcomes as dichotomous variables that participants either did or did not experience. Some authors graded nausea or vomiting, using distinctions such as 'mild', 'moderate', or 'severe'. We did not analyse grades of nausea or vomiting, as different studies used different scales. Some authors categorized PONV by the 'severest' symptom, for instance "vomiting (worse than) retching (worse than) nausea". We did not assume that someone categorized as vomiting was also nauseated. We categorized studies that compared a combination of two drugs versus one of those drugs (for instance dexamethasone and ondansetron versus dexamethasone) as 'drug versus placebo', in this example ondansetron versus placebo. We have analysed this decision in a post-hoc analysis that we did not list in the protocol ('giving one antiemetic with another' in Results and 'Does it matter what you give the drug with?' in Discussion).

Studies recorded outcomes during different postoperative periods, for instance six hours, or 24 hours or 72 hours. Some authors divided the postoperative observation period, for instance dividing a 24-hour observation period into a "0 to 4 hour" period and a "4 to 24 hours" period, but then did not report the risk for the complete observation period (0 to 24 hours in this example). We reported the risk of an outcome once for each study. We used the risk for the period in which the outcome was most common (all groups combined). A study with three groups, for instance placebo, dexamethasone and metoclopramide, allows three comparisons: placebo versus dexamethasone; placebo versus metoclopramide; dexamethasone versus metoclopramide. This means that the data from each group are used twice. Although each datum is used only

once in each of the three analyses, we thought that such studies, with more than two groups, would have an exaggerated effect on the total review. We therefore reduced the contribution of such a study by adjusting for the number of times each datum was used: therefore if a datum was used twice, we divided the proportion by two. For instance, if 12 of 40 participants vomited in a group that was analysed twice, we used the proportion 6/20 for each analysis. If division resulted in numbers that were not integers, we used the next integer (Review Manager ([RevMan 4.2](#)) analyses only handle integers).

We constructed Funnel plots and Forest plots for each outcome and drug. We then constructed plots for subgroup analyses. We used a random-effects model for all analyses. We expressed the treatment effects as relative risks. We discuss how the Number Needed to Treat changes with the control risk of PONV in the Discussion (Additional [Table 1](#)).

## RESULTS

### Description of studies

We retrieved 863 studies, of which we included 737 and excluded 126. Some of these excluded studies were abstracts of work subsequently published in full, or were incorporated into larger studies that referenced them, or had been previously identified as duplicates ([Tramèr 1997b](#)).

### Age and sex of participants

The included studies contained 103,237 participants. The age of 98,474 participants was reported, of whom 21,632 were children and 76,842 were adults. The sex of 87,225 participants was reported, of whom 20,916 were male and 66,309 were female. Age and sex were reported for 85,737 participants: 8180 were boys; 5967 were girls; 11,916 were men; and 59,674 were women.

### Drugs and number of studies

The included studies examined the effects of 60 different drugs (number of studies in brackets): alizapride (3); alprazolam (1); atropine (13); betamethasone (1); bromazepam (1); bromopride (1); butorphanol (1); chloral hydrate (1); chlorpromazine (2); cimetidine (2); cisapride (1); clebopride (2); clonidine (30); cp 122721 (2); cyclizine (10); dexamethasone (88); dexmedetomidine (1); diazepam (35); difenidol (1); dimenhydrinate (15); dixyrazine (4); dolasetron (26); domperidone (11); droperidol (222); edrophonium (2); ephedrine (4); flunitrazepam (4); flurbiprofen (1); ginger (6); glycopyrrolate (9); granisetron (81); hydroxyzine (1); hyoscine (16); intralipid (1); lidocaine (4); lorazepam (8);



lormetazepam (1); magnesium (2); medazepam (1); methylal-trexone (2); methylprednisolone (2); metoclopramide (158); midazolam (20); nabilone (1); naloxone (1); neostigmine (26); ondansetron (263); oxygen (7); palonosetron (2); perphenazine (11); physostigmine (1); prochlorperazine (13); promethazine (9); ramosetron (10); ranitidine (3); sulpiride (1); tandospirone (1); tiapride (1); trimethobenzamide (2); tropisetron (42). Some studies (318) assessed more than one drug.

## Control

The control group in 510 studies received a placebo. The control group in 68 studies received no treatment. There was no control group in 159 studies. All of the studies that did not contain a control group compared two or more drugs (or two or more doses of a drug, or both). Many of the studies that contained a control group also compared drugs. In seven studies, the authors controlled for one intervention with a placebo and for another intervention with no treatment.

## Number of interventions

There were 1442 intervention groups: 1316 groups received one drug; 125 groups received two drugs; and one group received four drugs. Three hundred and seventy-nine studies assessed one drug, 297 studies assessed two drugs, 52 studies assessed three drugs and nine studies assessed four drugs. There was one intervention group in 276 studies, two in 273 studies, three in 146 studies, four in 31 studies, five groups in seven studies, six groups in three studies and seven intervention groups in one study.

## Timing of interventions

A drug was given before anaesthesia was induced in 185 studies, at induction in 369 studies, during surgery in 183 studies, and after surgery in 107 studies. Ninety-nine studies gave a drug during two of these four periods: before induction and after anaesthesia (16); before induction and on induction (14); before induction and during the maintenance of anaesthesia (12); on induction and during the maintenance of anaesthesia (16); on induction and after anaesthesia (22); during, and after, anaesthesia (19). Four studies gave an antiemetic drug during three of these four periods; before induction, on induction, and after anaesthesia (1); before induction, during the maintenance of, and after anaesthesia (1); on induction, during the maintenance of, and after anaesthesia (2).

## Outcomes

The risk of nausea or vomiting was measured once in 406 studies, twice in 204 studies, thrice in 70 studies, four times in 39 studies, five times in 15 studies, six times in nine studies and seven times in four studies. The majority of studies - including the 396 studies

that measured the outcome once and 194 others - reported risks for the total postoperative observation period. The remaining 147 studies only reported the risks during different parts of the observation period. For instance the risk of an outcome was reported during the first three hours and the subsequent 21 hours of a study but not for the total 24 hours. Side effects were looked for and reported in 380 studies.

## Route and timing and dosage

Fourteen studies assessed how the route of administration changed drug effect; 15 studies assessed how timing of the intervention changed the effect of a drug; and 133 studies assessed the effect of a drug given at different doses.

## Risk of bias in included studies

A sample size calculation was reported by 276 of the 737 included studies. We assessed the concealment of group allocation as adequate in 178 studies and inadequate in nine studies. The authors of the remaining 550 studies did not state how they concealed group allocation - we categorized these studies as unclear. We assessed the allocation sequence as random in 195 studies and not random in seven studies. The authors of the remaining 535 studies did not state how they generated the allocation sequence - we categorized these studies as unclear. Six hundred and thirty-five studies blinded the outcome assessor to the intervention received by the participant, and 102 studies did not report blinding the outcome assessor. Two hundred and ninety studies blinded the anaesthesiologist (or other practitioner) who gave the anaesthetic (or sedation) to the intervention received by the participant, and 447 studies did not report blinding the anaesthesiologist. Five hundred and twelve studies analysed their results by intention to treat, and 225 studies did not. Five hundred and six studies included the results from all the participants (complete follow up), whilst 231 studies lost some participants to follow up.

## Effects of interventions

Our results are summarized graphically as Forest plots. The numbers preceding each heading, for instance '1.1 Nausea', correspond to the numbered Forest plot. To save space, we have not presented the Forest plots for all of the subgroup analyses.

## Primary analysis: the risk of postoperative nausea or vomiting

We separated the results into six divisions on the basis of what the control was, and whether an intervention group received a drug or a combination of drugs:

1. placebo versus drug;

2. no treatment versus drug;
3. drug versus drug;
4. placebo versus drugs;
5. no treatment versus drugs;
6. drugs versus drugs.

We used a random-effects model to calculate the relative risk of the event and the 95% confidence intervals.

## Placebo versus drug

These results are summarized in Additional Table 2 as well as the Forest plots.

### 1.1 Nausea (Analysis 1.1)

We calculated that the risk (95% confidence interval) for postoperative nausea is decreased compared to placebo by: alizapride 0.65 (0.46 to 0.92); cyclizine 0.67 (0.51 to 0.89); dexamethasone 0.58 (0.48 to 0.69); diazepam 0.50 (0.25 to 0.99); dolasetron 0.82 (0.76 to 0.90); droperidol 0.65 (0.60 to 0.71); granisetron 0.53 (0.45 to 0.63); hyoscine 0.63 (0.47 to 0.83); lorazepam 0.55 (0.33 to 0.93); metoclopramide 0.82 (0.76 to 0.89); ondansetron 0.68 (0.63 to 0.74); prochlorperazine 0.73 (0.56 to 0.96); ramosetron 0.62 (0.40 to 0.96); tropisetron 0.77 (0.71 to 0.84).

We calculated that there is no evidence that the risk of postoperative nausea is changed by: cimetidine 0.66 (0.16 to 2.68); clonidine 0.69 (0.46 to 1.05); dimenhydrinate 0.72 (0.47 to 1.13); domperidone 0.62 (0.20 to 1.94); ginger 0.87 (0.62 to 1.23); midazolam 0.90 (0.64 to 1.28); perphenazine 1.15 (0.42 to 3.12). We calculated that neostigmine increases the risk of postoperative nausea, relative risk 2.73 (1.15 to 6.48).

### 1.2 Vomiting (Analysis 1.2)

We calculated that the risk (95% confidence interval) for postoperative vomiting is decreased compared to placebo by: alizapride 0.49 (0.29 to 0.84); cyclizine 0.55 (0.43 to 0.71); dexamethasone 0.51 (0.46 to 0.56); dimenhydrinate 0.61 (0.46 to 0.81); dolasetron 0.62 (0.51 to 0.76); droperidol 0.65 (0.60 to 0.70); granisetron 0.40 (0.35 to 0.46); hyoscine 0.65 (0.55 to 0.77); metoclopramide 0.76 (0.70 to 0.81); midazolam 0.73 (0.56 to 0.95); ondansetron 0.54 (0.50 to 0.59); perphenazine 0.70 (0.51 to 0.96); prochlorperazine 0.68 (0.52 to 0.89); ramosetron 0.42 (0.28 to 0.63); tropisetron 0.60 (0.51 to 0.70).

We calculated that there is no evidence that the risk of postoperative vomiting is changed by: atropine 1.11 (0.78 to 1.58); cimetidine 0.47 (0.17 to 1.32); clonidine 0.75 (0.53 to 1.06); diazepam 0.85 (0.58 to 1.24); domperidone 0.80 (0.52 to 1.23); ephedrine 1.00 (0.69 to 1.45); ginger 1.00 (0.65 to 1.54); lorazepam 0.61 (0.33 to 1.13); methylnaltrexone 0.64 (0.30 to 1.33); neostigmine 3.87 (0.79 to 18.99); promethazine 0.76 (0.40 to 1.45).

### 1.3 Nausea or vomiting (Analysis 1.3)

We calculated that the risk (95% confidence interval) for postoperative 'nausea or vomiting' is decreased compared to placebo by: cyclizine 0.67 (0.56 to 0.79); dexamethasone 0.48 (0.43 to

0.54); dimenhydrinate 0.71 (0.59 to 0.86); dolasetron 0.72 (0.62 to 0.83); droperidol 0.62 (0.58 to 0.67); granisetron 0.39 (0.31 to 0.48); hyoscine 0.71 (0.56 to 0.90); metoclopramide 0.76 (0.70 to 0.82); ondansetron 0.56 (0.50 to 0.62); prochlorperazine 0.68 (0.55 to 0.86); promethazine 0.46 (0.25 to 0.82); ramosetron 0.51 (0.39 to 0.68); tropisetron 0.72 (0.63 to 0.82).

We calculated that there is no evidence that the risk of postoperative 'nausea or vomiting' is changed by: alizapride 0.68 (0.39 to 1.19); atropine 0.91 (0.36 to 2.91); clonidine 0.73 (0.52 to 1.02); diazepam 1.04 (0.51 to 2.10); dixyrazine 0.83 (0.67 to 1.02); domperidone 0.71 (0.44 to 1.13); ephedrine 0.84 (0.52 to 1.34); ginger 0.79 (0.55 to 1.14); glycopyrrolate 0.67 (0.35 to 1.29); magnesium 0.79 (0.36 to 1.72); midazolam 1.44 (0.52 to 3.94); perphenazine 0.71 (0.43 to 1.15). We calculated that neostigmine increased the risk of postoperative nausea or vomiting - relative risk 3.19 (95% confidence interval 1.71 to 5.93).

### 1.4 Rescue antiemetic (Analysis 1.4)

We calculated that the risk (95% confidence interval) of treatment for postoperative nausea or vomiting is decreased compared to placebo by: cyclizine 0.27 (0.15 to 0.48); dexamethasone 0.49 (0.41 to 0.58); dixyrazine 0.49 (0.30 to 0.80); dolasetron 0.67 (0.57 to 0.79); droperidol 0.53 (0.47 to 0.59); ginger 0.40 (0.18 to 0.88); granisetron 0.29 (0.22 to 0.39); lorazepam 0.55 (0.33 to 0.93); metoclopramide 0.78 (0.69 to 0.88); midazolam 0.61 (0.38 to 0.98); ondansetron 0.54 (0.48 to 0.60); ramosetron 0.38 (0.15 to 0.99); tropisetron 0.63 (0.55 to 0.73).

We calculated that there is no evidence that the risk of treatment for postoperative nausea or vomiting is changed by: clonidine 1.09 (0.94 to 1.27); dimenhydrinate 0.62 (0.33 to 1.15); ephedrine 0.82 (0.41 to 1.66); glycopyrrolate 0.52 (0.18 to 1.48); hyoscine 0.92 (0.69 to 1.21); methylnaltrexone 0.63 (0.33 to 1.21); neostigmine 1.39 (0.55 to 3.50); prochlorperazine 0.49 (0.22 to 1.08).

## No treatment versus drug

### 2.1 Nausea (Analysis 2.1)

We calculated that the risk (95% confidence interval) for postoperative nausea is decreased compared to no treatment by: droperidol 0.58 (0.41 to 0.81); metoclopramide 0.34 (0.17 to 0.66); ondansetron 0.66 (0.49 to 0.88).

We calculated that there is no evidence that promethazine changes the risk of postoperative nausea - relative risk 0.81 (0.55 to 1.20).

### 2.2 Vomiting (Analysis 2.2)

We calculated that the risk (95% confidence interval) for postoperative vomiting is decreased compared to no treatment by: dexamethasone 0.40 (0.24 to 0.65); dixyrazine 0.31 (0.18 to 0.53); droperidol 0.65 (0.53 to 0.79); metoclopramide 0.49 (0.30 to 0.79); ondansetron 0.43 (0.34 to 0.54).

We calculated that there is no evidence that promethazine changes the risk of postoperative vomiting - relative risk 0.53 (0.15 to 1.84).

### 2.3 Nausea or Vomiting (Analysis 2.3)

We calculated that the risk (95% confidence interval) for postoperative 'nausea or vomiting' is decreased compared to no treatment by: droperidol 0.56 (0.41 to 0.78); metoclopramide 0.35 (0.17 to 0.74); ondansetron 0.61 (0.46 to 0.81).

#### 2.4 Rescue antiemetic (Analysis 2.4)

We calculated that the risk (95% confidence interval) of treatment for postoperative nausea or vomiting is decreased compared to no treatment by: dixyrazine 0.08 (0.01 to 0.61); droperidol 0.57 (0.40 to 0.82); ondansetron 0.62 (0.43 to 0.90).

### Drug versus drug

Most of these results are summarized in Additional Table 3, as well as the Forest plots.

#### 3.1 Nausea (Analysis 3.1)

We calculated that the risk (95% confidence interval) of postoperative nausea was different when the following drugs were compared: dexamethasone was superior to tropisetron 0.41 (0.22 to 0.78); droperidol was inferior to granisetron 1.36 (1.05 to 1.77); granisetron was superior to metoclopramide 0.50 (0.31 to 0.81); granisetron was inferior to ramosetron 2.34 (1.11 to 4.94).

We calculated that there is no evidence of different risks for postoperative nausea when the following drugs were compared: atropine versus hyoscine 2.33 (0.98 to 5.58); cyclizine versus ondansetron 1.00 (0.69 to 1.44); dexamethasone versus droperidol 1.08 (0.65 to 1.78); dexamethasone versus granisetron 1.07 (0.15 to 7.57); dexamethasone versus metoclopramide 0.61 (0.28 to 1.34); dexamethasone versus ondansetron 1.27 (0.94 to 1.71); diazepam versus promethazine 0.83 (0.39 to 1.76); dimenhydrinate versus droperidol 1.70 (0.73 to 3.99); dimenhydrinate versus metoclopramide 1.51 (0.43 to 5.33); dimenhydrinate versus ondansetron 0.80 (0.51 to 1.26); dolasetron versus droperidol 1.06 (0.62 to 1.82); dolasetron versus metoclopramide 0.85 (0.57 to 1.26); dolasetron versus ondansetron 1.02 (0.81 to 1.28); domperidone versus droperidol 0.96 (0.23 to 4.05); domperidone versus metoclopramide 0.94 (0.62 to 1.43); droperidol versus metoclopramide 0.91 (0.73 to 1.31); droperidol versus ondansetron 0.95 (0.88 to 1.03); droperidol versus propofol 3.48 (0.78 to 15.46); droperidol versus tropisetron 1.07 (0.86 to 1.33); ginger versus metoclopramide 0.92 (0.54 to 1.59); metoclopramide versus ondansetron 1.19 (0.99 to 1.44); metoclopramide versus tropisetron 0.86 (0.50 to 1.48); ondansetron versus prochlorperazine 0.96 (0.49 to 1.86); ondansetron versus promethazine 0.81 (0.46 to 1.40); ondansetron versus tropisetron 1.15 (0.82 to 1.60).

#### 3.2 Vomiting (Analysis 3.2)

We calculated that the risk (95% confidence interval) of postoperative vomiting was different when the following drugs were compared: atropine was superior to glycopyrrolate 0.67 (0.50 to 0.90); atropine was inferior to hyoscine 3.12 (1.56 to 6.25); diazepam was inferior to droperidol 2.16 (1.39 to 3.34); diazepam was inferior to flunitrazepam 1.74 (1.04 to 2.91); dimenhydrinate was inferior to ondansetron 1.76 (1.09 to 2.85); dolasetron was superior

to metoclopramide 0.36 (0.19 to 0.65); droperidol was inferior to granisetron 2.16 (1.71 to 2.72); droperidol was superior to metoclopramide 0.83 (0.71 to 0.97); droperidol was superior to midazolam 0.77 (0.63 to 0.94); droperidol was inferior to ondansetron 1.20 (1.07 to 1.34); granisetron was superior to metoclopramide 0.39 (0.26 to 0.59); granisetron was superior to perphenazine 0.36 (0.21 to 0.62); granisetron was inferior to ramosetron 2.82 (1.69 to 4.71); metoclopramide was inferior to ondansetron 1.44 (1.20 to 1.73); ondansetron was inferior to tropisetron 1.54 (1.15 to 2.06).

We calculated that there is no evidence of different risks for postoperative vomiting when the following drugs were compared: clonidine versus diazepam 0.58 (0.29 to 1.15); clonidine versus midazolam 0.81 (0.31 to 2.10); cyclizine versus ondansetron 1.36 (0.58 to 3.18); dexamethasone versus droperidol 0.97 (0.51 to 1.84); dexamethasone versus granisetron 1.72 (0.80 to 3.70); dexamethasone versus metoclopramide 0.45 (0.17 to 1.20); dexamethasone versus ondansetron 1.38 (0.84 to 2.26); dexamethasone versus tropisetron 0.38 (0.13 to 1.11); diazepam versus midazolam 2.08 (0.28 to 15.60); diazepam versus phenobarbitone 0.95 (0.66 to 1.38); diazepam versus promethazine 1.78 (0.32 to 10.03); diazepam versus trimethoprim 1.96 (0.98 to 3.90); dimenhydrinate versus droperidol 0.93 (0.53 to 1.64); dimenhydrinate versus metoclopramide 0.79 (0.46 to 1.36); dolasetron versus droperidol 0.80 (0.50 to 1.30); dolasetron versus ondansetron 1.17 (0.94 to 1.45); domperidone versus droperidol 2.13 (0.82 to 5.53); domperidone versus metoclopramide 1.01 (0.64 to 1.59); droperidol versus ephedrine 1.00 (0.15 to 6.45); droperidol versus propofol 3.00 (0.66 to 13.69); droperidol versus tropisetron 1.10 (0.54 to 2.22); metoclopramide versus perphenazine 0.75 (0.37 to 1.54); metoclopramide versus tropisetron 1.33 (0.70 to 2.53); ondansetron versus prochlorperazine 0.87 (0.50 to 1.50); ondansetron versus promethazine 0.84 (0.48 to 1.45); pentobarbitone versus trimethoprim 1.19 (0.33 to 4.32).

#### 3.3 Nausea or Vomiting (Analysis 3.3)

We calculated that the risk (95% confidence interval) of the combined outcome postoperative 'nausea or vomiting' was different when the following drugs were compared: atropine was inferior to hyoscine 2.79 (1.74 to 4.45); clonidine was superior to neostigmine 0.31 (0.11 to 0.86); dexamethasone was superior to metoclopramide 0.59 (0.35 to 0.99); dexamethasone was superior to tropisetron 0.41 (0.22 to 0.78); domperidone was inferior to droperidol 1.80 (1.05 to 3.08); droperidol was inferior to granisetron 2.08 (1.55 to 2.80); droperidol was superior to metoclopramide 0.77 (0.65 to 0.92); droperidol was inferior to propofol 2.98 (1.08 to 8.24); granisetron was superior to metoclopramide 0.35 (0.24 to 0.51); granisetron was inferior to ramosetron 2.50 (1.18 to 5.29); metoclopramide was inferior to ondansetron 1.28 (1.03 to 1.58); ondansetron was superior to prochlorperazine 0.61 (0.43 to 0.87).

We calculated that there is no evidence of different risks for postoperative 'nausea or vomiting' when the following drugs were com-

pared: atropine versus glycopyrrolate 0.65 (0.20 to 2.17); clonidine versus midazolam 0.75 (0.41 to 1.37); cyclizine versus ondansetron 1.19 (0.73 to 1.95); dexamethasone versus droperidol 1.04 (0.72 to 1.52); dexamethasone versus granisetron 0.96 (0.10 to 9.32); dexamethasone versus ondansetron 1.29 (0.99 to 1.68); diazepam versus flunitrazepam 1.41 (0.44 to 4.56); dimenhydrinate versus droperidol 1.31 (0.58 to 2.96); dimenhydrinate versus metoclopramide 1.09 (0.44 to 2.70); dolasetron versus droperidol 0.95 (0.77 to 1.17); dolasetron versus metoclopramide 0.70 (0.47 to 1.04); dolasetron versus ondansetron 1.03 (0.83 to 1.27); domperidone versus metoclopramide 0.90 (0.72 to 1.13); droperidol versus granisetron 2.08 (1.55 to 2.80); droperidol versus ondansetron 0.99 (0.86 to 1.14); droperidol versus tropisetron 1.03 (0.81 to 1.30); ginger versus metoclopramide 0.94 (0.57 to 1.53); metoclopramide versus tropisetron 1.20 (0.88 to 1.62); ondansetron versus promethazine 0.75 (0.46 to 1.22); ondansetron versus tropisetron 1.09 (0.88 to 1.36).

#### 3.4 Rescue antiemetic (Analysis 3.4)

We calculated that the risk (95% confidence interval) of treatment for postoperative nausea or vomiting was different when the following drugs were compared: atropine was inferior to hyoscine 3.00 (1.49 to 6.03); dexamethasone was inferior to granisetron 7.95 (1.03 to 61.15); dolasetron was superior to metoclopramide 0.55 (0.33 to 0.94); droperidol was inferior to granisetron 2.77 (1.82 to 4.21); granisetron was superior to metoclopramide 0.32 (0.17 to 0.62).

We calculated that there is no evidence of different risks of treatment for postoperative nausea or vomiting when the following drugs were compared: atropine versus glycopyrrolate 0.69 (0.21 to 2.27); cyclizine versus ondansetron 0.65 (0.30 to 1.39); dexamethasone versus droperidol 1.18 (0.68 to 2.06); dexamethasone versus metoclopramide 0.50 (0.19 to 1.33); dexamethasone versus ondansetron 1.32 (0.83 to 2.10); dexamethasone versus tropisetron 0.44 (0.19 to 1.04); dimenhydrinate versus ondansetron 0.95 (0.64 to 1.43); dolasetron versus ondansetron 0.97 (0.77 to 1.22); domperidone versus metoclopramide 0.93 (0.58 to 1.48); droperidol versus ephedrine 0.80 (0.24 to 2.59); droperidol versus metoclopramide 0.85 (0.64 to 1.14); droperidol versus ondansetron 1.01 (0.89 to 1.14); droperidol versus propofol 2.93 (0.63 to 13.61); droperidol versus tropisetron 1.11 (0.81 to 1.52); granisetron versus ondansetron 1.14 (0.39 to 3.31); granisetron versus tropisetron 1.00 (0.35 to 2.82); metoclopramide versus ondansetron 1.11 (0.97 to 1.27); metoclopramide versus tropisetron 1.31 (0.93 to 1.85); ondansetron versus prochlorperazine 1.45 (0.65 to 3.28); ondansetron versus tropisetron 1.08 (0.86 to 1.34).

### Placebo versus drugs

#### 4.1 Nausea (Analysis 4.1)

We calculated that dexamethasone combined with ondansetron decreases the risk for postoperative nausea compared to placebo - relative risk 0.32 (95% confidence interval 0.17 to 0.60).

We calculated that there is no evidence that the following drug combinations change the risk of postoperative nausea compared to placebo: dexamethasone and granisetron 0.26 (0.06 to 1.12); dimenhydrinate and droperidol 0.45 (0.18 to 1.13); dimenhydrinate and metoclopramide 0.74 (0.24 to 2.25); dolasetron and droperidol 0.43 (0.09 to 2.11); droperidol and ondansetron 0.43 (0.11 to 1.67); glycopyrrolate and neostigmine 1.38 (0.95 to 1.99).

#### 4.2 Vomiting (Analysis 4.2)

We calculated that the following drug combinations decrease the risk (95% confidence interval) for postoperative vomiting compared to placebo: dexamethasone and ondansetron 0.31 (0.14 to 0.70); droperidol and ondansetron 0.36 (0.19 to 0.67).

We calculated that there is no evidence that the following drug combinations change the risk for postoperative vomiting compared to placebo: dexamethasone and granisetron 0.28 (0.06 to 1.23); dimenhydrinate and droperidol 0.31 (0.08 to 1.17); dimenhydrinate and metoclopramide 0.40 (0.09 to 1.85); dolasetron and droperidol 0.33 (0.08 to 1.45); droperidol and metoclopramide 0.68 (0.27 to 1.71); glycopyrrolate and neostigmine 0.97 (0.68 to 1.38).

#### 4.3 Nausea or vomiting (Analysis 4.3)

We calculated that the following drug combinations decrease the risk (95% confidence interval) for postoperative 'nausea or vomiting' compared to placebo: dexamethasone and ondansetron 0.33 (0.22 to 0.49); droperidol and ondansetron 0.38 (0.18 to 0.81). We calculated that there is no evidence that following drug combinations change the risk for 'nausea or vomiting' compared to placebo: clonidine and neostigmine 1.59 (0.12 to 21.80); dimenhydrinate and droperidol 0.45 (0.18 to 1.13); dimenhydrinate and metoclopramide 0.58 (0.23 to 1.46); dolasetron and droperidol 0.35 (0.12 to 1.03); glycopyrrolate and neostigmine 1.03 (0.86 to 1.23).

#### 4.4 Rescue antiemetic (Analysis 4.4)

We calculated that the following combinations of drugs decrease the risk (95% confidence interval) of treatment for nausea or vomiting compared to placebo: dexamethasone and ondansetron 0.19 (0.07 to 0.52); droperidol and ondansetron 0.32 (0.14 to 0.76). We calculated that there is no evidence that glycopyrrolate combined with neostigmine changes the risk of treatment for nausea or vomiting compared to placebo - relative risk 1.42 (95% confidence interval 0.71 to 2.86).

### No treatment versus drugs

#### 5.1 Nausea (Analysis 5.1)

We calculated that there is no evidence that atropine combined with neostigmine changes the risk of postoperative nausea compared to no treatment - relative risk 1.57 (95% confidence interval 0.96 to 2.59).

#### 5.2 Vomiting (Analysis 5.2)

We calculated that there is no evidence that atropine combined with neostigmine changes the risk of postoperative vomiting com-

pared to no treatment - relative risk 2.19 (95% confidence interval 0.77 to 6.21).

#### 5.3 Nausea or vomiting (Analysis 5.3)

No results.

#### 5.4 Rescue antiemetic (Analysis 5.4)

No results.

### Drugs versus drugs

#### 6.1 Nausea (Analysis 6.1)

We calculated that there is no evidence of different risks of postoperative nausea following droperidol versus dexamethasone combined with granisetron - relative risk 1.21 (95% confidence interval 0.83 to 1.76).

#### 6.2 Vomiting (Analysis 6.2)

We calculated that the risk of postoperative vomiting is greater following droperidol than following dexamethasone combined with granisetron - relative risk 2.11 (95% confidence interval 1.35 to 3.32).

We calculated that there is no evidence that the risk of postoperative vomiting is different following droperidol combined with metoclopramide compared to ondansetron 0.67 (0.13 to 3.53).

#### 6.3 Nausea or vomiting (Analysis 6.3)

We calculated that there is no evidence that the risk of postoperative 'nausea or vomiting' is different following dexamethasone combined with granisetron compared to droperidol - relative risk 1.37 (95% confidence interval 0.76 to 2.48).

#### 6.4 Rescue antiemetic (Analysis 6.4)

We calculated that there is no evidence that the risk of treatment for postoperative nausea or vomiting is different for the following drug comparisons - relative risk (95% confidence interval): droperidol versus dexamethasone and granisetron 1.73 (0.79 to 3.81); ondansetron versus droperidol and metoclopramide 1.00 (0.38 to 2.63).

### Primary analysis: the risk of side effects

Studies reported the postoperative risks of the following: abdominal pain (or bloating or constipation); agitation (or confusion or restlessness); bradycardia; dizziness (or vertigo); drowsiness (or sedation); dry mouth; extrapyramidal reaction; headache; infection; itch (or pruritus); shivering. Some studies reported the combined risks of: 'dizziness or headache'; 'dizziness or shivering'; 'drowsiness or headache'; 'dizziness or drowsiness or headache'. Three hundred and eighty studies reported how many participants experienced side effects, 148 studies said that they recorded side effects in the methodology but did not report the number who experienced a side effect, and 209 studies did not report side effects. We have performed a post-hoc analysis that we did not list in the protocol (see 'Post-hoc interstudy analysis: studies authored by Fujii et al' in Results and Discussion). Exclusion of results by Fujii et al did not alter the number of side effects caused by drugs but it did widen the confidence intervals.

### Placebo versus drug

We calculated that the risk of side effects was changed by the following drugs compared to placebo - relative risk (95% confidence interval): dizziness is increased by neostigmine 6.82 (1.31 to 35.41) and decreased by tropisetron 0.37 (0.14 to 0.96); drowsiness is increased by dimenhydrinate 9.01 (2.18 to 37.23) and by droperidol 1.32 (1.16 to 1.51); dry mouth is increased by hyoscine 1.25 (1.05 to 1.49); headache is decreased by droperidol 0.79 (0.65 to 0.95) and increased by ondansetron 1.16 (1.03 to 1.30). We calculated that there is no evidence for a difference in the risk of any other side effect for a drug compared to placebo.

### No treatment versus drug

We calculated that droperidol increased the risk of drowsiness compared to no treatment - relative risk 2.57 (95% confidence interval 1.02 to 6.43).

### Drug versus drug

We calculated that dimenhydrinate increased the risk of drowsiness compared to ondansetron - relative risk 7.22 (95% confidence interval 1.52 to 34.36). We calculated that there is no evidence that the risk of any other side effect studied differs when drugs were compared.

#### Placebo versus drugs

We calculated that there is no evidence that the risk of any side effect studied is increased by a combination of drugs compared to placebo.

#### No treatment versus drugs

We calculated that there is no evidence that the risk of any side effect studied is increased by a combination of drugs compared to no treatment.

#### Drugs versus drugs

We calculated that there is no evidence that the risk of any side effect studied is increased by a combination of drugs compared to another drug or combination of drugs.

### Secondary analysis: the route of administration

Only one author (in four studies) assessed route of administration for a drug (van den Berg 1995; van den Berg 1996; van den Berg 1996b; van den Berg 1996c). We calculated that two outcomes are less common following intramuscular than intravenous prochlorperazine - relative risk (95% confidence interval): nausea 0.53 (0.33 to 0.83); nausea or vomiting 0.78 (0.62 to 0.97).

### Secondary analysis: the timing of drug administration

Only droperidol (Klockgether 1993; Korttila 1985; Kraus 1991; Nakata 2002) and ondansetron (Madan 2000; Polati 1995; Sun 1997c; Tang 1998; Trakya 1996) were studied. There was no evidence that the risk of postoperative nausea and vomiting differed



for groups given ondansetron before induction, at induction, intra-operatively or postoperatively. Nausea and vomiting were treated more often after ondansetron had been given at induction than when it had been given intraoperatively - relative risk 1.76 (95% confidence interval 1.12 to 2.76). There were no differences in outcomes when droperidol was given at different times.

### Secondary analysis: the dose of drug

We found no evidence for the following drugs that the risk of any emetic outcome was affected by dose: alizapride; dolasetron; domperidone; ginger; tropisetron. The risk of at least one outcome was decreased by larger doses of the drugs listed below.

### Clonidine

The risks for two outcomes were greater after smaller doses of clonidine - relative risk (95% confidence interval): vomiting 2.68 (1.17 to 6.16); 'nausea or vomiting' 3.41 (1.34 to 8.71). When we only analysed the effect of doubling the dose of clonidine only the risk for 'nausea or vomiting' 1.41 (1.05 to 1.88) was greater with half the dose (Bock 2002; Carabine 1992; Grottke 2003; Mikawa 1995; Paech 1997; Sites 2003).

### Dexamethasone

The risks for most outcomes were greater after smaller doses of dexamethasone - relative risk (95% confidence interval): vomiting 1.57 (1.07 to 2.30); nausea or vomiting 1.44 (1.10 to 1.90); nausea 1.41 (0.98 to 2.03); treatment 1.48 (1.00 to 2.20). When we only analysed the effect of doubling the dose of dexamethasone the risks for both nausea 1.51 (1.02 to 2.24) and 'nausea or vomiting' 1.41 (1.05 to 1.88) were greater with half the dose (Elhakim 2002; Fujii 2002; Ho 2001; Lee 2001; Liu 1999; Wang 2000c; Wang 2001).

### Droperidol

The risks for all outcomes were greater after smaller doses of droperidol - relative risk (95% confidence interval): nausea 1.23 (1.12 to 1.36); vomiting 1.26 (1.01 to 1.57); nausea or vomiting 1.20 (1.08 to 1.33); treatment 1.21 (1.02 to 1.44). When we only analysed the effect of doubling the dose of droperidol we found that the relative risks stayed about the same: nausea 1.28 (1.05 to 1.56); vomiting 1.33 (1.01 to 1.77); nausea or vomiting 1.20 (1.07 to 1.34); treatment 1.22 (1.02 to 1.46) (Beattie 1993; Brown 1991; Culebras 2003; Eustis 1987; Fortney 1998; Foster 1996; Fujii 1995b; Jorgensen 1990; Klahsen 1996; Koivuranta 1997; Korttila 1985; Lamond 1998; Lim 1991; Lim 1999; McKenzie 1995; Millar 1987; Morin 1999; Mortensen 1982; Nicolson 1988; O'Donovan 1984; Spadafora 1994; Stead 1994; Tang 1996; TerRiet 1997; Tripple 1989).

### Granisetron

The risks for all outcomes were greater after smaller doses of granisetron - relative risk (95% confidence interval): nausea 1.21 (1.05 to 1.40); vomiting 1.50 (1.26 to 1.79); nausea or vomiting 1.50 (1.19 to 1.89); treatment 1.66 (1.15 to 2.40). When we only analysed the effect of doubling the dose of granisetron, the risks for vomiting 1.64 (1.23 to 2.20), 'nausea or vomiting' 2.12 (1.48 to 3.05) and treatment 2.10 (1.21 to 3.66) were greater with half the dose. Removal of studies by Fujii removes any effect of dose on outcome (please see post-hoc analysis and Discussion) (Cieslak 1996; Fujii 1994b; Fujii 1996e; Fujii 1997f; Fujii 1998o; Fujii 1998q; Fujii 1998r; Fujii 1998s; Fujii 1998t; Fujii 1999L; Fujii 1999n; Fujii 2001f; Fujii 2001g; Fujii 2002b; Fujii 2002b; McAllister 1996; Mikawa 1995b; Mikawa 1997b; Munro 1999; Wilson 1996).

### Metoclopramide

The risk for vomiting was greater after smaller doses of metoclopramide - relative risk 1.82 (95% confidence interval 1.16 to 2.87) but was not when we only analysed the effect of doubling the dose of metoclopramide (Diamond 1988; Lin 1992; Vollmer 1988).

### Ondansetron

The risks for most outcomes were greater after smaller doses of ondansetron - relative risk (95% confidence interval): vomiting 1.13 (1.02 to 1.26); nausea or vomiting 1.39 (1.08 to 1.79); nausea 1.07 (1.00 to 1.15). When we only analysed the effect of doubling the dose of ondansetron, these differences disappeared except for the outcome 'nausea or vomiting': nausea 1.07 (0.97 to 1.18); vomiting 1.08 (0.97 to 1.20); nausea or vomiting 1.43 (1.08 to 1.90); treatment 1.22 (0.85 to 1.74) (Alon 1993b; Bowhay 2001; Charuluxananan 2003; Davis 1995b; Dershwitz 1998; Goodarzi 1998; Helmers 1993; Honkavaara 1996b; Lawhorn 1997; Le Roy 1995; Paventi 2001; Pearman 1994; Principi 1996; Rose 1996b; Rust 1994; Sadhasivam 2000; Saur 1996; Splinter 1997c; TerRiet 1997; Trakya 1996; Tur 1995; Watcha 1995b; Zarate 2000).

### Ramosetron

Two outcomes were more frequent after smaller doses of ramosetron (half the dose) - relative risk (95% confidence interval): vomiting 2.12 (1.05 to 4.27); nausea or vomiting 2.20 (1.23 to 3.92) (Fujii 2000c; Fujii 2002e; Fujii 2003). Please see the post-hoc analysis and Discussion.

The risk of 'nausea or vomiting' was less with smaller doses of neostigmine - relative risk 0.66 (95%CI 0.47 to 0.91).

### Interstudy analyses: subgroup analyses, sensitivity analyses and post-hoc analyses

We examined the effect of subgrouping studies using the following four variables:

1. the age of the participant;
2. the type of surgery;
3. the sex of the participant;
4. the timing of antiemetic used (before, during, or after the operation, or at induction).

We examined the effect of each variable using the same outcomes that we used for the main analyses: nausea; vomiting; nausea or vomiting; rescue antiemetic. We compared subgroups that contained at least two studies. We compared the 95% confidence intervals of the treatment effect and we interpreted the absence of overlap as an indication that the treatment effect differed significantly between subgroups.

#### *Subgroup analysis: the age of the participant*

There were no consistent differences in the effects of any drug on any outcome when studies were subgrouped on the basis of participant age - children or adults. Subgrouping studies by age did not decrease statistical heterogeneity. The confidence intervals for all outcomes in children and adults overlapped, except for two outcomes with ondansetron that were prevented more in children than adults - relative risk (95% confidence interval): vomiting 0.49 (0.44 to 0.53) compared with 0.62 (0.59 to 0.65) in adults; treatment 0.35 (0.29 to 0.42) compared with 0.54 (0.51 to 0.58) in adults. And one outcome with tropisetron that was prevented more in children than adults: treatment 0.44 (0.35 to 0.56) compared with 0.67 (0.63 to 0.71) in adults.

#### *Subgroup analysis: the type of operation*

There were no differences in the effects of any drug on any outcome when studies were subgrouped on the basis of type of surgery: dental; otorhinolaryngological (ENT); general; gynaecological; maxillofacial; neurosurgical; obstetrical; ophthalmological; orthopaedic; plastic; urological. Subgrouping studies by type of operation did not decrease statistical heterogeneity. The only exception was the risk of nausea after granisetron versus placebo that differed in three comparisons. The relative risk in studies of neurosurgical participants was 0.94 (0.71 to 1.25) compared to 0.38 (0.21 to 0.67) in studies of ENT participants, 0.47 (0.35 to 0.65) in studies of gynaecological participants and 0.48 (0.38 to 0.61) in studies of general surgical participants. These three isolated differences contrast with the remaining 354 comparisons that showed no effect of type of operation (summarized in Additional Table 4).

#### *Subgroup analysis: the sex of the participant*

There were no differences in the effects of any drug on any outcome when studies were subgrouped on the basis of participant sex: male (men or boys) or female (women or girls). Subgrouping studies by sex did not decrease statistical heterogeneity.

#### *Subgroup analysis: the time of drug administration*

There were no consistent differences in the effects of any drug on any outcome when studies were subgrouped on the basis of timing of administration (preoperatively, at induction, intraoperatively, postoperatively). Subgrouping studies did not reduce statistical heterogeneity. Only three of 245 subgroup comparisons suggested a possible effect of timing (95% confidence intervals overlapped for the other 242 comparisons). It is possible that when ondansetron is given late (after the participant awoke from anaesthesia) it fails to prevent nausea - relative risk (95% confidence interval): preoperative 0.67 (0.54 to 0.84); induction 0.68 (0.61 to 0.76); intraoperative 0.61 (0.48 to 0.78); postoperative 1.17 (0.93 to 1.48).

#### *Sensitivity analysis: measures of methodological quality*

There were no differences in the effects of any drug on any outcome when studies were subgrouped on the basis of: allocation concealment; sequence generation; blinding of outcome assessor; blinding of anaesthetist. Subgrouping studies by methodological quality did not decrease statistical heterogeneity.

#### **Post-hoc interstudy analysis: studies authored by Fujii et al**

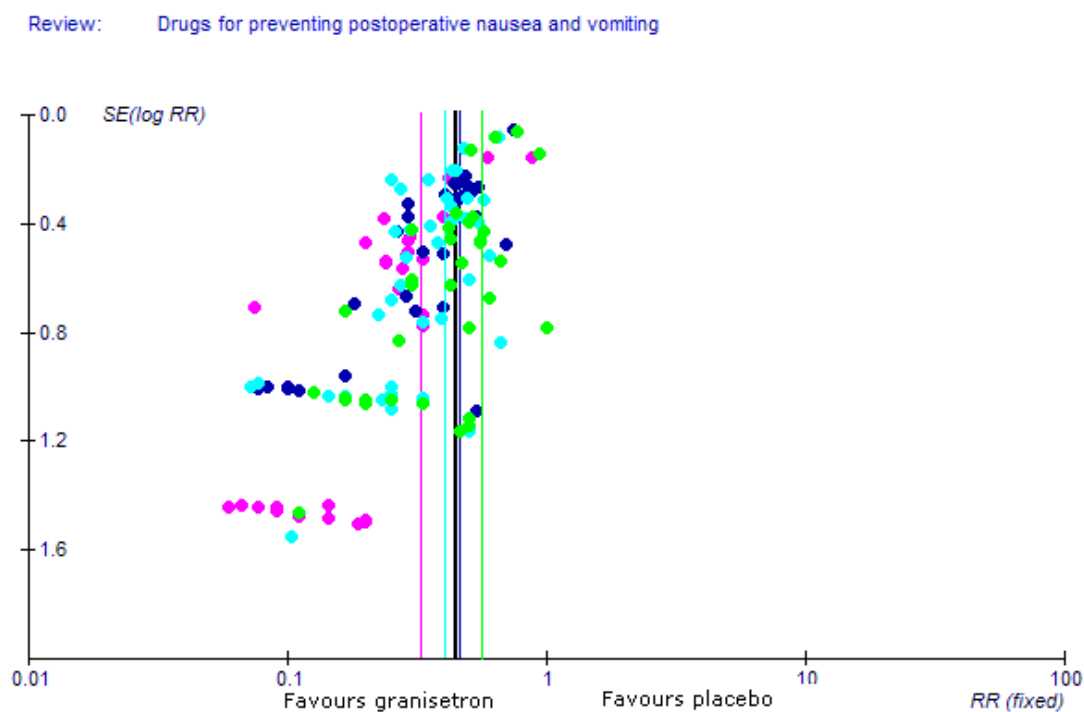
We performed this subgroup analysis because studies of granisetron authored by Fujii et al have been criticized (please see Discussion for details).

#### *13.1 to 13.4 Placebo versus Granisetron (Analysis 13.1 to Analysis 13.4)*

There was no consistent difference in the results of studies authored by Fujii and other studies. The effect of granisetron in both groups was similar for two outcomes - relative risk (95% confidence interval): vomiting 0.38 (0.33 to 0.44) for 39 Fujii studies (2719 participants) compared with 0.42 (0.33 to 0.54) for the other 12 studies (1369 participants); nausea or vomiting 0.41 (0.36 to 0.47) for 27 Fujii studies (1908 participants) compared with 0.53 (0.35 to 0.80) for the other seven studies (744 participants). The corresponding P values from interaction analyses are 0.25 and 0.50 respectively. There were differences for the other two outcomes; nausea 0.42 (0.34 to 0.53) for 28 Fujii studies (1839 participants) compared with 0.67 (0.55 to 0.81) for the other nine studies (1091 participants); treatment 0.23 (0.17 to 0.30) for 30 Fujii studies (2413 participants) compared with 0.48 (0.34 to 0.69) for the other nine studies (997 participants). The corresponding P values from interaction analyses are 0.002 and 0.001.

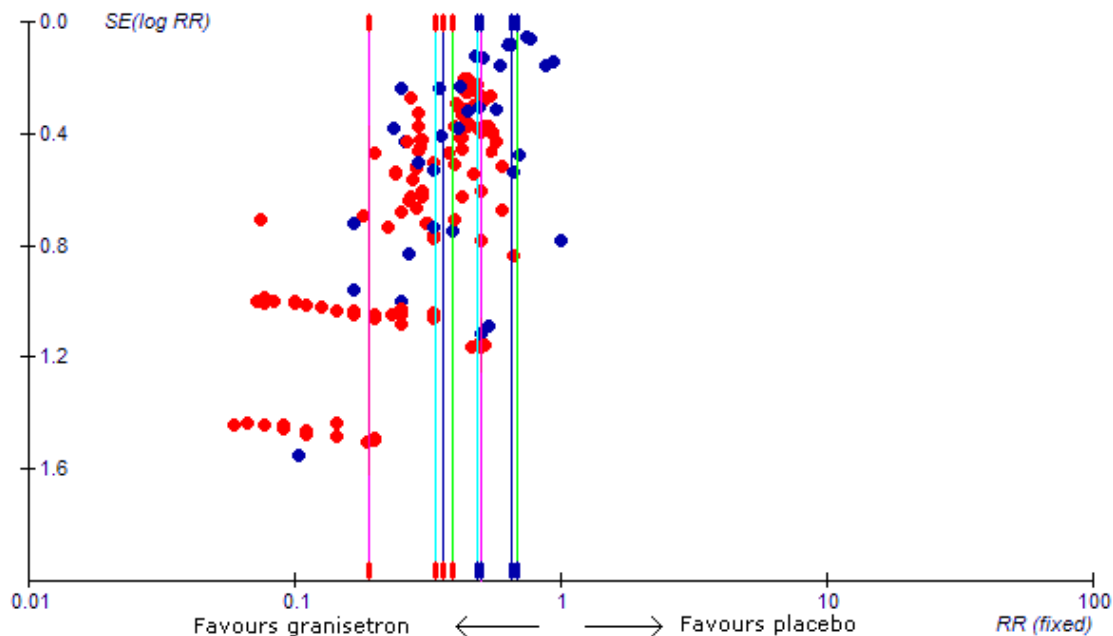
The Funnel plot for granisetron (versus placebo) appeared to be the most asymmetric of any drug. Therefore the effect of granisetron may be overestimated more than any other drug (see additional Figure 1 and Figure 2).

**Figure 1. Severe Funnel plot asymmetry: granisetron's effectiveness versus placebo is less than implied by the relative risk. [Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**





**Figure 2. Funnel plot of studies of granisetron versus placebo (compare with additional figure 02). In this plot results from studies authored by Fujii et al are red; results from other studies are blue. The vertical lines are the corresponding estimates of effect: green is nausea; light blue is vomiting; dark blue is nausea or vomiting; pink is treatment.**

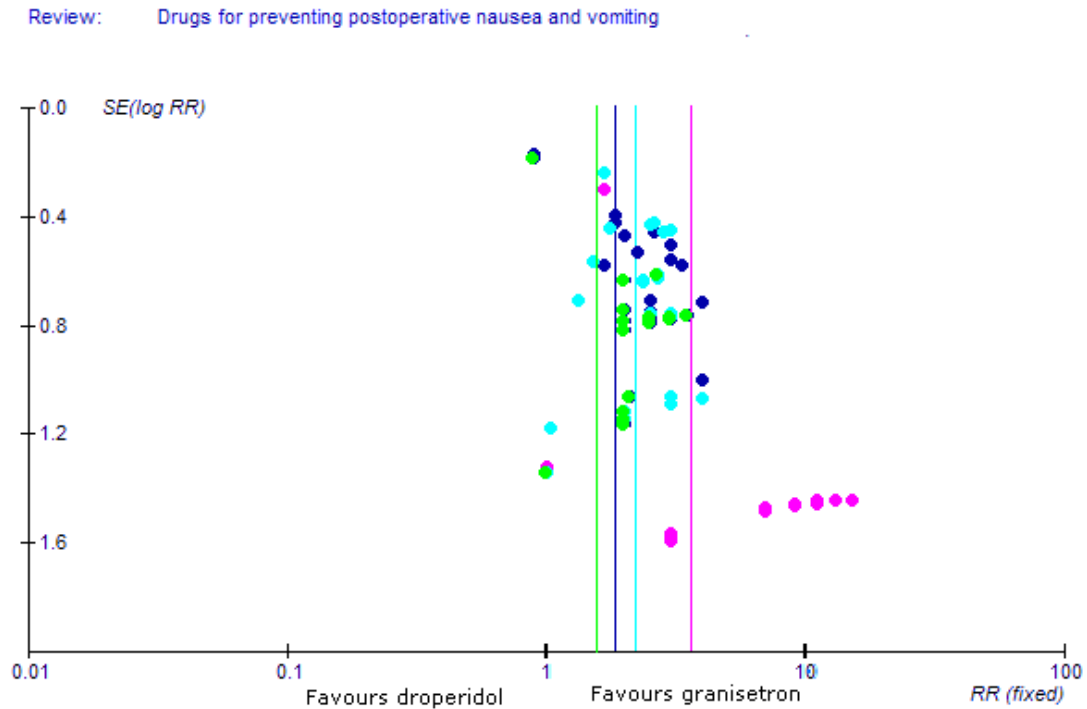


#### 13.5 to 13.8 Droperidol versus Granisetron (Analysis 13.5 to Analysis 13.8)

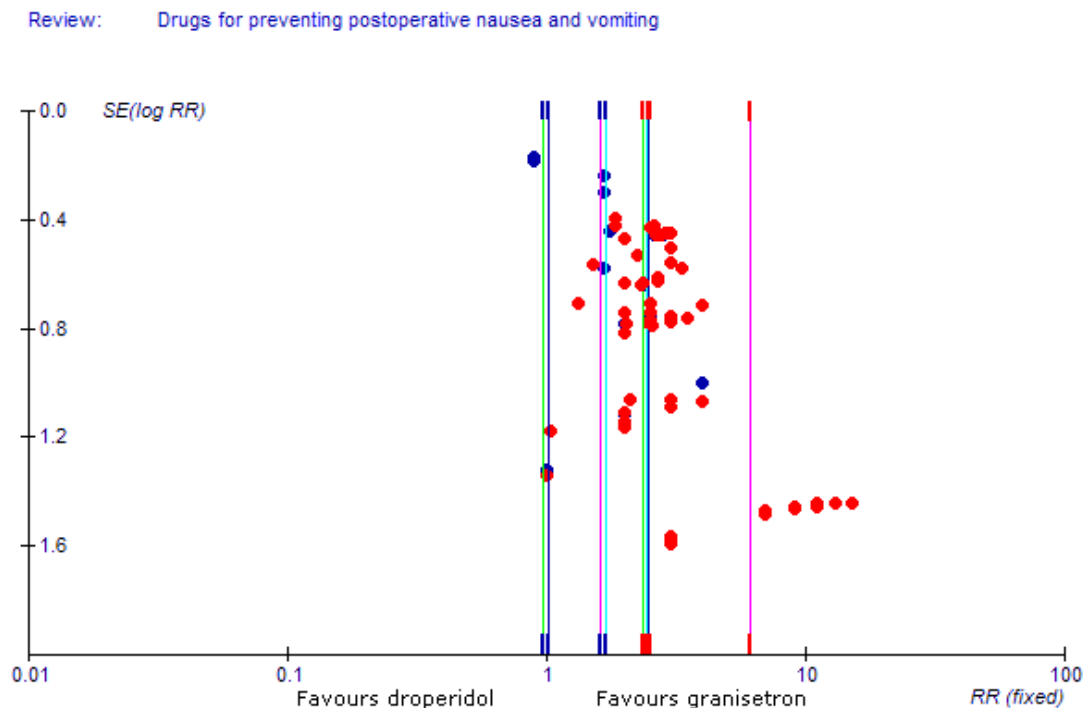
There was no consistent difference in the results of studies authored by Fujii and other studies. The effect of droperidol versus granisetron was similar in the two groups for two outcomes - relative risk (95% confidence interval): vomiting 2.42 (1.82 to 3.22) for 21 Fujii studies (838 participants) compared with 1.70 (1.14 to 2.55) for the other three studies (170 participants); nausea or vomiting 2.43 (1.84 to 3.22) for 15 Fujii studies (574 participants) compared with 1.22 (0.61 to 2.48) for the other three studies (170 participants). The corresponding P values from interaction anal-

yses are 0.16 and 0.08 respectively (Altman 2003). There were differences for the other two outcomes; nausea 2.33 (1.54 to 3.52) for 16 Fujii studies (612 participants) compared with 0.94 (0.67 to 1.33) for the other three studies (170 participants); treatment 5.10 (2.75 to 9.44) for 17 Fujii studies (700 participants) compared with 1.63 (0.91 to 2.89) for the other two studies (150 participants). The corresponding P values from interaction analyses are 0.001 and 0.008 respectively. The Funnel plot for droperidol versus granisetron appeared to be asymmetric. Therefore the effect of granisetron may be overestimated (see additional Figure 3 and Figure 4).

**Figure 3. Severe Funnel plot asymmetry: droperidol and granisetron's effectiveness are more similar than implied by the relative risk. [Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**



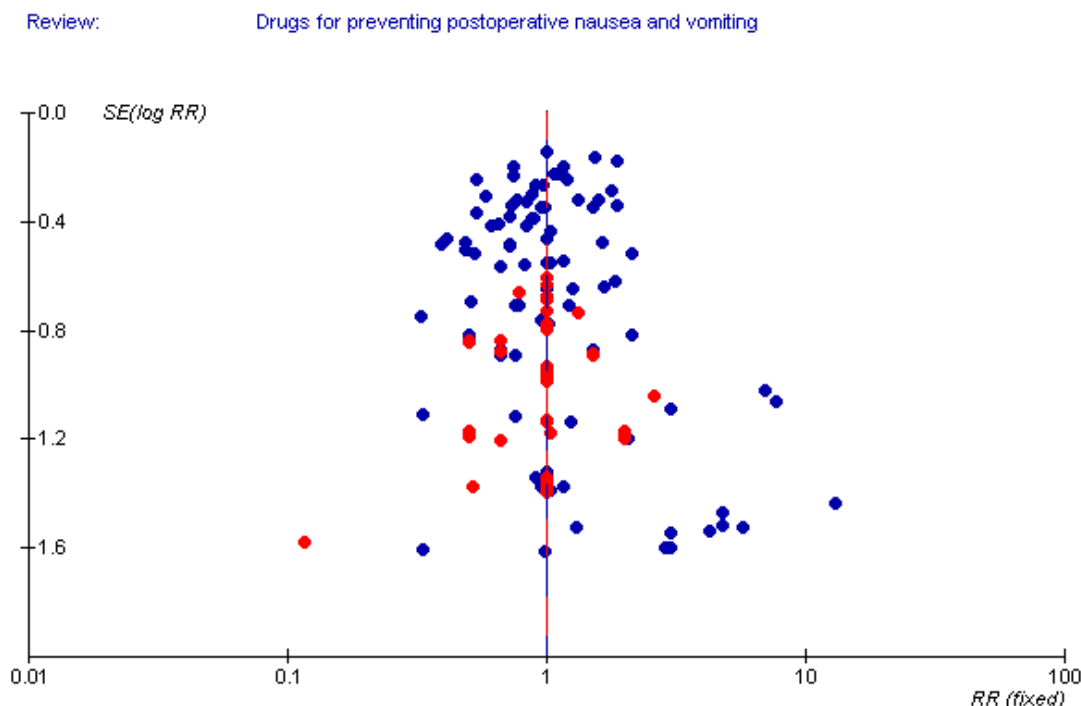
**Figure 4. Funnel plot of studies of droperidol versus granisetron (compare with additional figure 09). In this plot results from studies authored by Fujii et al are red; results from other studies are blue. The vertical lines are the corresponding estimates of effect: green is nausea; light blue is vomiting; dark blue is nausea or vomiting; pink is treatment.**



### 13.9 Risk of side effects (Analysis 13.9)

There were no differences in the effect estimates for side effects reported by Fujii et al compared to other authors. The pattern of relative risks reported by Fujii et al appeared different to other studies. Fujii reported exactly the same risks of side effects for most groups in each study. Table of comparison 13.09 lists the results of 261 studies in which side effects were assessed by Fujii and other authors. The risk for 140 of these 261 side effects was exactly the same in each group (the relative risk is exactly 1.0). The relative risk was exactly one in 128 of the 159 studies published by Fujii and exactly one in 12 of the 102 studies published by other authors (see additional Figure 5).

**Figure 5. One relative risk is plotted for each side-effect reported by each study: red are from studies by Fujii et al; blue are from studies by other authors. An equal risk for a side effect (relative risk one) was reported by Fujii et al for 128 out of 159 risks (they overlap on the dashed line  $RR=1$  and so appear fewer than 128), and reported by other authors for 12 out of 102 risks.**



#### Post-hoc interstudy analysis: giving one antiemetic with another

(Additional Table 5)

The IMPACT study (Apfel 2004) found that the effects of three drugs (dexamethasone, droperidol, ondansetron) were independent of whether the drug was given alone or with one or both of the other two drugs. To illustrate this result, consider a drug that confers a relative risk for PONV of 0.65 when compared with placebo. One can infer from the results of the IMPACT study that the drug would still confer a relative risk of 0.65 if it is given with another drug. If the second drug confers a relative risk of 0.7 for PONV (compared to placebo) the combined relative risk for PONV is 0.65 multiplied by 0.7, equalling 0.46. In summary, relative risks of the three drugs assessed in the IMPACT study were unaffected by coadministration with another drug.

We performed a post-hoc subgroup analysis to determine whether our results were consistent with the results of the IMPACT study. This subgroup analysis compared the relative risks in studies that

gave an antiemetic drug by itself with studies that coadministered an antiemetic drug with another. This subgroup analysis is an indirect comparison and so the results are less reliable than the direct comparison of the IMPACT study.

Our results were consistent with the IMPACT study. We did not find any evidence that the relative risk conferred by one drug was affected by coadministration with another drug. The only exception was granisetron, which was more effective when given with dexamethasone (please see the Discussion).

## DISCUSSION

### How effective is a drug?

A drug may appear to have different effects on the risks of nausea, vomiting, nausea or vomiting, and treatment. This systematic review cannot determine whether such differences were chance, due to systematic differences in measurement or systematic differences

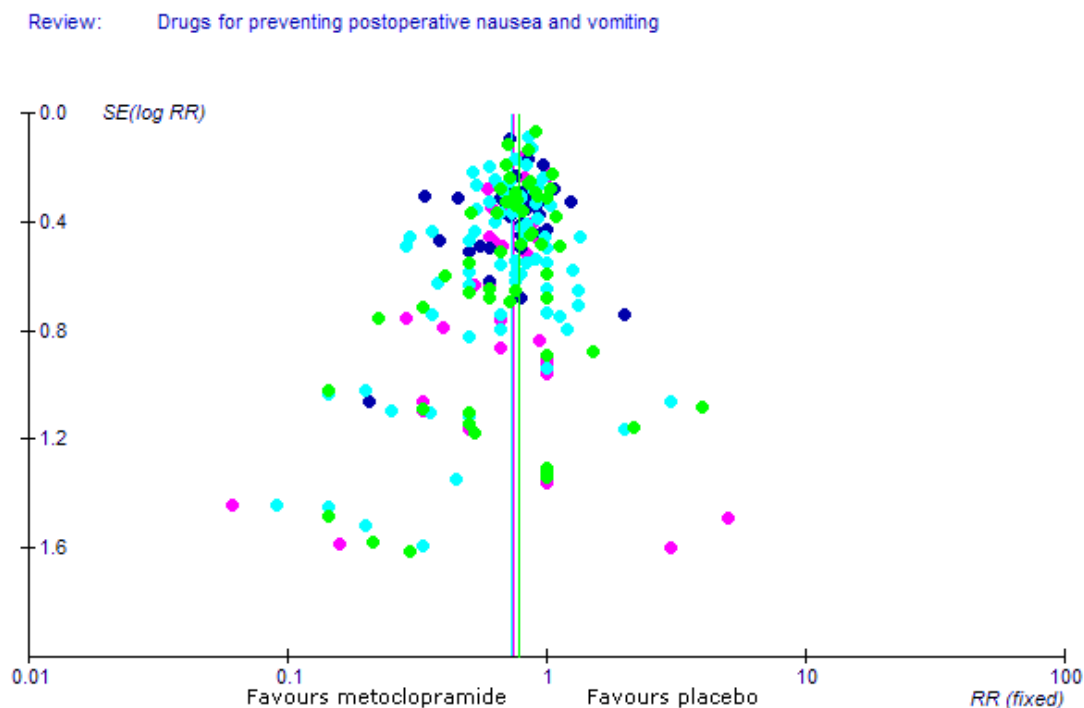
in effect. It may be more difficult to 'measure' nausea because it is an internal symptom and its measurement depends upon communication between the participant and the assessor. Rescue treatment also depends upon someone choosing whether or not to give a rescue antiemetic. For most comparisons in this review, the 95% confidence intervals overlap for all four outcomes. The decision to administer a prophylactic antiemetic should probably use the most precise measure of effect from the four outcomes (narrowest 95% confidence interval).

Please see the section "Which drug is best?" below for a discussion of whether one drug prevented nausea and vomiting more than another drug. This question is properly answered through direct comparisons of drugs within randomized controlled trials. The differences between the results of different drugs in different studies cannot be taken as reliable evidence that one drug is more effective versus placebo than another.

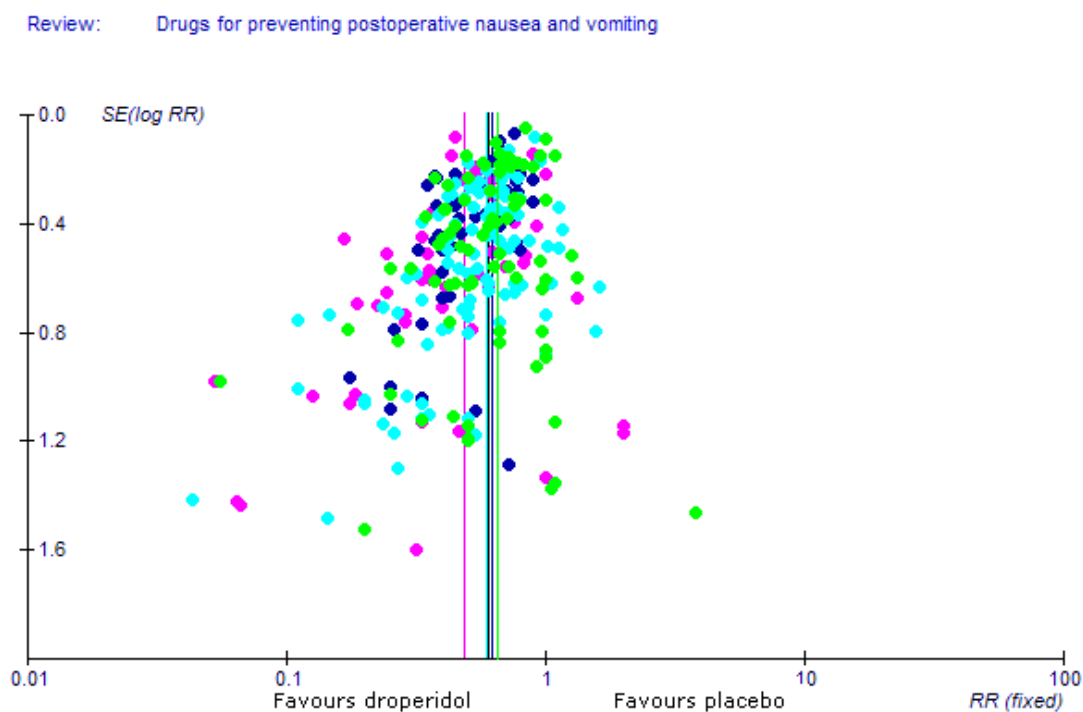
### Are the calculated effects overestimates?

Funnel plot asymmetry may be caused by: selection bias (publication or location bias); poor methodological quality of smaller studies (design, analysis or fraud); true heterogeneity (varying effect with study size); artefact or chance. We interpret most Funnel plots of drug versus placebo as asymmetric. All of the asymmetric plots had an excess of imprecise studies, with relative risks that favoured the drug. The asymmetry was present for each outcome for most drugs. For example look at some of the Funnel plots for studies of a drug versus placebo. The Funnel plot for metoclopramide showed asymmetry that we think is mild (Figure 6); we think that the plots for droperidol (Figure 7) and ondansetron (Figure 8) showed moderate asymmetry; and we think that the plot for granisetron versus placebo showed the most asymmetry (Figure 1 and Figure 2).

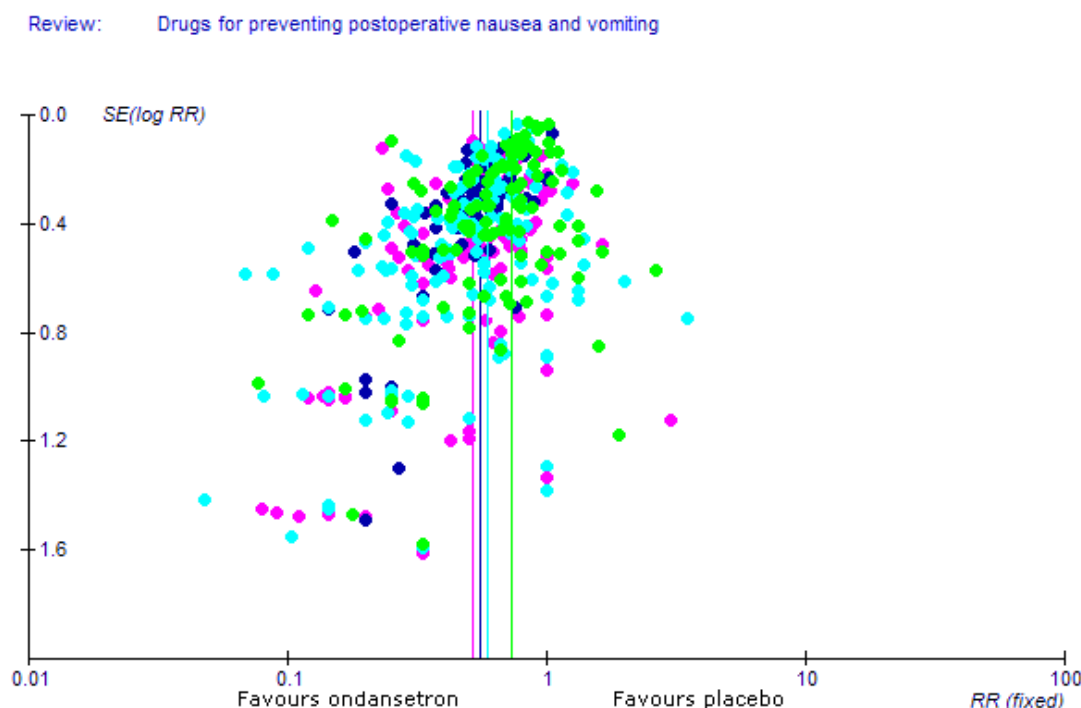
**Figure 6. Mild Funnel plot asymmetry: metoclopramide's effectiveness versus placebo is similar to the relative risk (closer than other antiemetics). Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise].**



**Figure 7. Moderate Funnel plot asymmetry: droperidol's effectiveness versus placebo is less than implied by the relative risk. [Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**



**Figure 8. Moderate Funnel plot asymmetry: ondansetron's effectiveness versus placebo is less than implied by the relative risk. [Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**



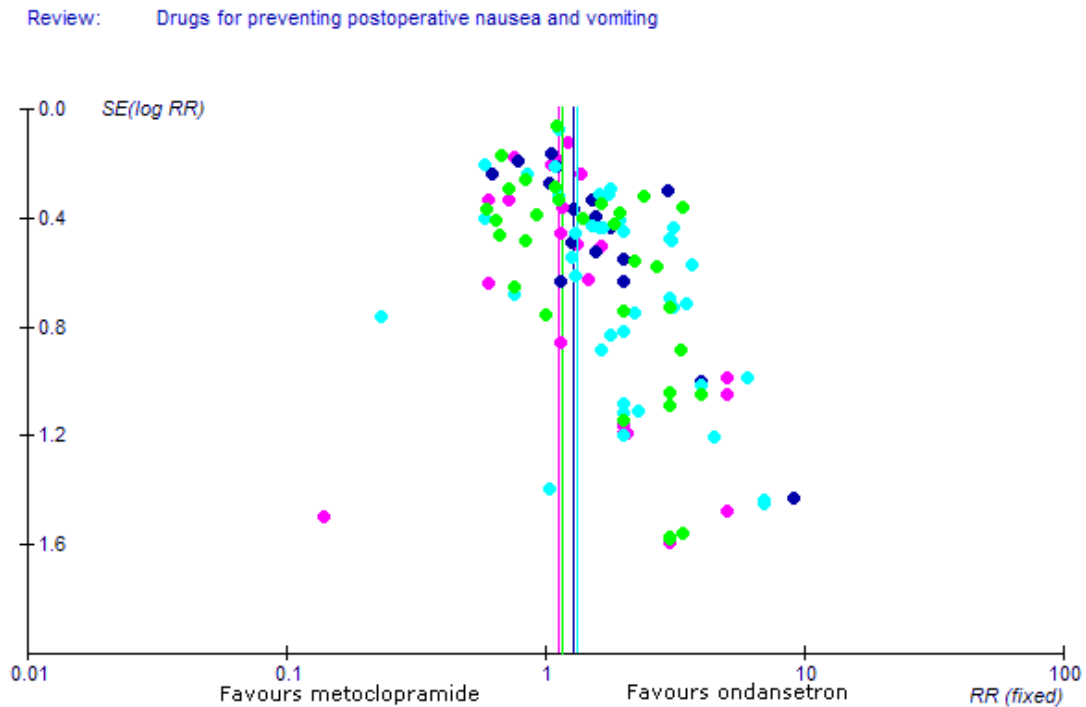
Because this asymmetric effect was constant across all four outcomes and was present for many drugs, we discount chance and true heterogeneity as likely causes. We think that the cause is either publication bias or poor methodological quality of smaller studies. Either cause justifies an adjustment of the calculated results that we reported in the review. The results for the comparisons with the most asymmetric Funnel plots overestimate the effect the most.

### Which drug is best?

We included 60 drugs. Twenty drugs had an effect compared to placebo (relative risk 95th percentile less than one) for at least one outcome (nausea, vomiting, 'nausea or vomiting', rescue antiemetic). We concentrate here on the nine drugs that had an effect on all four outcomes: cyclizine, dexamethasone, dolasetron, droperidol, granisetron, metoclopramide, ondansetron, ramosetron and tropisetron.

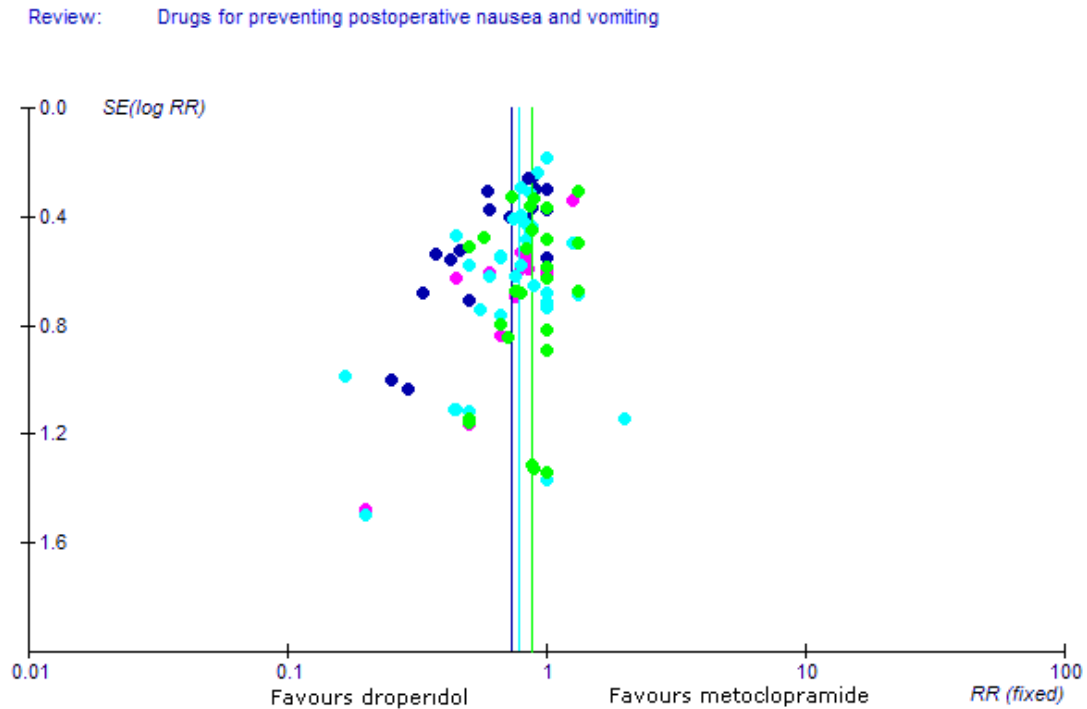
There are 36 ways of comparing two of nine drugs (see Additional Table 3). Twelve of the 36 comparisons have not been studied. Eleven of the 24 comparisons that have been studied produced evidence that one drug was more effective than another. Three comparisons have been studied extensively - droperidol versus metoclopramide, droperidol versus ondansetron, metoclopramide versus ondansetron - with between 22 and 45 studies contributing to each comparison. Because of the Funnel plot asymmetry for these comparisons, we cannot draw any conclusion as to whether these drugs differ in their ability to prevent PONV (additional Figure 9, Figure 10 and Figure 11). We believe that the likely causes for these asymmetries are the same as for comparisons of drugs versus placebo - either publication bias or poor methodological quality of smaller studies.

**Figure 9. Severe Funnel plot asymmetry: metoclopramide and ondansetron's effectiveness are more similar than implied by the relative risk. [Each dot is an outcome from one study. Nausea is green. Vomiting is light blue. 'Nausea or Vomiting' is dark blue. Rescue antiemetic is pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**

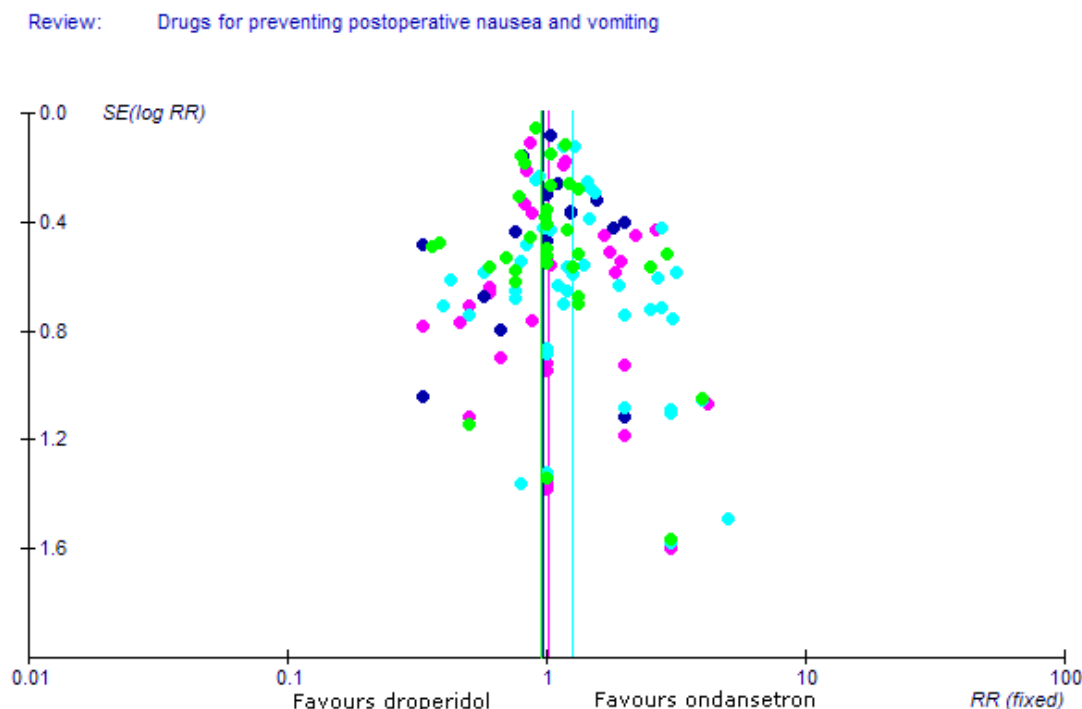




**Figure 10. Moderate Funnel plot asymmetry: droperidol and metoclopramide's effectiveness are more similar than implied by the relative risks. [Each dot is an outcome from one study. Nausea green, Vomiting light blue, 'Nausea or vomiting' dark blue, Rescue antiemetic pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**



**Figure 11. Moderate Funnel plot asymmetry: droperidol and ondansetron's effectiveness are more similar than implied by the relative risk for vomiting (light blue). [Each dot is an outcome from one study. Nausea green, Vomiting light blue, 'Nausea or vomiting' dark blue, Rescue antiemetic pink. Dots overlap. Coloured vertical lines mark the summative relative risk for each outcome. The outcomes of dots closer to the top (SE 0.0) are more precise]**



### Is more drug better than less drug?

We expected that the dose of a drug would have some effect on the risk of nausea or vomiting.

We found a consistent dose-response for only one drug - droperidol. When a larger dose of droperidol was given, the risk for PONV was decreased compared to smaller doses. Put another way, the risk for PONV was greater when less drug was given. We found only one or two studies for each dose comparison for droperidol. In isolation, few of these comparisons showed an effect of dose (the 95% confidence intervals included one). We found that when we combined studies that compared a dose of droperidol with a half-dose, the risk for each outcome was greater by about 1.2 for the smaller dose: nausea 1.28 (1.05 to 1.56); vomiting 1.33 (1.01 to 1.77); nausea or vomiting 1.20 (1.07 to 1.34); treatment 1.22 (1.02 to 1.46). The results of this systematic review do not show a maximum dose above which droperidol has no further effect and they do not show whether the dose-response is linear.

We calculated a dose-response for at least one outcome for four drugs: clonidine, dexamethasone, granisetron and ondansetron.

We do not know how to interpret the dose-response for clonidine, because clonidine was not effective when we combined all placebo-controlled studies. It is possible that higher doses of clonidine may have an effect when compared to placebo. We found that halving the dose of granisetron increased the risk for three outcomes: vomiting 1.64 (1.23 to 2.20), 'nausea or vomiting' 2.12 (1.48 to 3.05) and treatment 2.10 (1.21 to 3.66). We found that halving the dose of dexamethasone increased the risk of nausea by 1.5 (1.02 to 2.24) and 'nausea or vomiting' by 1.41 (1.05 to 1.88). We found that halving the dose of ondansetron increased the risk of 'nausea or vomiting' by 1.43 (1.08 to 1.90).

Overall we did not find convincing evidence that more drug is more effective for most of the drugs we assessed.

### Is the timing of drug administration important?

There were few direct comparisons of timing of drug administration. There were few statistically different direct or indirect comparisons and these were sporadic. Timing may be important but

there is no evidence at the moment to define what aspect of timing is important.

### **Does it matter what you give the drug with?**

We did a post-hoc analysis following the publication of the IMPACT study (Apfel 2004). This factorial study allowed the authors to assess the interaction of three antiemetic drugs (dexamethasone, droperidol, ondansetron) in 4083 participants. They found that the effect of each drug was independent of whether the drug was given alone or with one or both of the other two drugs.

We had decided to assume independence of effect in the design (protocol) of this systematic review. Imagine a study in which all participants received one antiemetic drug, and some participants are allocated to receive a second antiemetic drug. The participants who received one antiemetic (and a placebo for the second drug) were the control for participants that received the additional antiemetic. In Additional Table 5 we have tabulated a post-hoc subgroup analysis of this decision. We have categorized studies into those in which the control group participants received a recognised antiemetic ("Control received antiemetic") and those that did not ("Control did not receive antiemetic"). The final column "95% CI overlap?" details whether the confidence intervals overlapped and for how many outcomes.

We calculated that the 95% confidence intervals for these two categories of studies overlapped for every outcome for every drug; that is there was no evidence that the effects of these drugs were altered by coadministration with other drugs. This is an indirect comparison and is not as reliable as the result from the IMPACT study.

The only exception was for the drug granisetron. The 95% confidence intervals did not overlap for any of the outcomes, and the relative risk for each outcome was less for the subgroup of studies that coadministered granisetron with another antiemetic. By itself this result would support research into the hypothesis that the effect of granisetron is synergistic with other antiemetics.

### **Do side effects outweigh benefits?**

We don't know. Approximately one-third of the studies we included did not report side effects. We think that the range of side effects reported was partly dependent on the authors' expectations. It is possible that there are rare side effects that are either too infrequent to be reported or did occur but were not reported because the authors did not consider them to be potential side effects of a drug.

Clinicians should use other sources of information about side effects. For instance, in 2001 the United States of America's Food and Drug Administration revised the labelling for droperidol with a black box warning for cases of electrocardiographic QT wave prolongation, torsades de pointes arrhythmia and death. The evidence and lack of evidence for this side effect have since been discussed and some clinicians do not think that the association

is valid and causal (Kao 2003). In addition, a systematic review could include the results from all studies of these drugs versus placebo irrespective of the outcome being analysed, for instance the treatment of established nausea or vomiting and the prevention or treatment of nausea or vomiting after chemotherapy and radiotherapy.

### **Studies authored by Fujii et al**

We read a number of criticisms of studies authored by Fujii et al in the course of preparing this systematic review. These criticisms focus on studies of granisetron and the reported risks of side effects (Apfel 1999; Kranke 1999c; Kranke 2000; Kranke 2001). We therefore performed subgroup analyses that compared studies authored by Fujii et al with other studies (comparisons 13.01 to 13.09). Analyses for interactions do not show consistent differences in effect for the two groups of studies, either for granisetron versus placebo or droperidol versus granisetron. The most important aspect of results for granisetron that readers should take into account is the marked asymmetry of the Funnel plots (see "Are the calculated effects overestimated?" and "Which drug is best?", additional Figure 1; Figure 2, Figure 3, and Figure 4). These asymmetries suggest that the effect of granisetron is overestimated (versus placebo) and that there is not a reliable difference between granisetron and other antiemetics. We believe that the results for side effects support our conclusion that the research priority is the incidence of important adverse events.

### **Is prophylactic antiemesis worthwhile?**

Whether a prophylactic antiemetic drug causes net benefit or harm depends upon the risks and severities of the bad outcomes prevented (nausea, vomiting, sequelae, side effects of rescue antiemetic) and the unwanted outcomes caused (side effects, failure of expected benefit). The majority of people do not benefit when given a prophylactic antiemetic, but all are exposed to the risk of side effects. Attempts have been made to reduce the exposure of patients to unnecessary antiemetic prophylaxis by using scoring systems to predict the likelihood of postoperative nausea or vomiting, but in some circumstances these may not have useful predictive power (Van den Bosch 2005). We do not know of any attempt to predict the likelihood of a patient experiencing a side effect. We have presented the drug costs to prevent one episode of postoperative nausea or vomiting in Additional Table 6.

### **Does it matter what your age or sex is, what operation you are having or when you're given the antiemetic?**

None of these variables alter the effect of antiemetic drugs in a consistent way. Subgrouping studies did not reduce statistical heterogeneity. It is possible that metaregression may reveal subtle effects. However, even in the absence of an effect on the prophylactic

power of drugs, these variables may indeed 'matter', because the decision to administer an antiemetic depends upon the absolute effect of a drug (control rate of nausea or vomiting multiplied by the relative risk), not just on the relative risk alone. The control rate itself may be altered by these variables even if the relative risk is not.

## Turning relative risks into decisions

The decision to use a prophylactic antiemetic drug depends upon the expected wanted and unwanted effects caused by the drug, on their risks and severities.

The efficacy and safety of a drug depend upon the risks of nausea and vomiting and of 'side effects' in an untreated population. We have prepared a selection of control group risks and calculated absolute risk reductions and numbers needed to treat (Additional Table 1). A commonly reported risk for postoperative nausea or vomiting is 30 out of 100 people. If an antiemetic is given to all 100 people before surgery 20 will still vomit or be nauseated, so 10 people will have benefited and 90 people will not. When the risk of nausea or vomiting is higher more people will benefit, so if the risk is 80 out of 100 people, 28 would benefit and 72 would not.

## AUTHORS' CONCLUSIONS

### Implications for practice

Most patients given a drug to prevent nausea or vomiting after surgery will not benefit from it. Nausea or vomiting is reported to affect at most 80 out of 100 people after surgery. If all 100 of these people are given a drug, 28 would benefit, and 72 would not. Nausea and vomiting are usually less common and therefore drugs are less useful. For 100 people, of whom 30 would vomit or feel sick after surgery if given placebo, 10 people would benefit from a drug and 90 would not. Between one to five patients out of every 100 given a prophylactic antiemetic may expect to experience a mild side effect such as headache, sedation or dry mouth. There is convincing evidence that eight drugs reduce PONV by a similar amount: cyclizine, droperidol, granisetron, metoclopramide, ondansetron, tropisetron, dolasetron and dexamethasone. There is only limited evidence that more drug is more effective: there is convincing evidence that more drug is more effective for droperidol and limited evidence for dexamethasone and ondansetron. Evidence for differences in the efficacy of these eight drugs is not convincing.

### Implications for research

There are some questions that are inadequately answered by the evidence that we have reviewed.

1. What are the types and risks of side effects experienced by patients exposed to prophylactic antiemetics?
2. Are cyclizine, droperidol, granisetron, metoclopramide, ondansetron, tropisetron, dolasetron and dexamethasone equipotent?
3. Are there reproducible dose-effect relationships for these drugs?
4. Are clonidine, dimenhydrinate, hyoscine, prochlorperazine and ramosetron effective prophylactic antiemetics?
5. Do other drugs included in this review prevent PONV, such as alizapride, benzodiazepines, perphenazine and promethazine?

Because the majority of patients do not benefit from exposure to prophylactic antiemetics, the most important question to answer is "What are the types and risks of side effects experienced by patients exposed to prophylactic antiemetics?". Although we have produced evidence for the risks of 'mild' adverse outcomes in this review, such as constipation, dizziness, itchiness and sedation, there were little data on more severe outcomes such as infection, cardiac arrhythmia, extrapyramidal reactions and death. This information will probably require multicentre international collaboration to acquire because these side effects, if they occur, will be rare. Researchers may be tempted to answer easier but less important questions.

Researchers should use Additional Table 3 to decide what drugs to compare. Researchers should aim to conduct single studies that compare all eight drugs, as results from such studies will be most reliable. Potential researchers should conduct realistic sample size calculations before committing to research. Researchers should remember to distinguish between masking of allocation and generation of a (random) allocation sequence. When reporting results, authors should list all quality criteria clearly. Readers of studies should be able to determine how many people were nauseated, how many vomited, how many were both nauseated and vomited, and how many vomited without experiencing nausea. Authors should specify how they categorized retching and, again, readers should be able to determine how many people retched and whether they experienced any other symptoms. Authors should report how many people feel nauseated or vomit before operation (because drug administration would be treatment, not prophylaxis). Authors should report the risk of each outcome for the total observation period: if authors report risks during two or more periods, readers should be able to determine how many people experienced an outcome in each period and how many periods each person experienced an outcome for. Otherwise the units of analysis are unclear.

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## CHARACTERISTICS OF STUDIES

### Characteristics of included studies [ordered by study ID]

#### Aasboe 1998

Methods	Y; B; Y; Y; N; N	
Participants	80 adults; 63 women; orthopaedic/general; >18; ASA1-3; exc’ study drug contraindication, pregnant	
Interventions	Induction Either: PLACEBO; or BETAMETHASONE 12mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-4; 5-24 hours.	
Notes	Male/female incidences not reported. Nausea and vomiting commonest 5-24 hours, rescue antiemetic 0-4 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

#### Abdulatif 2002

Methods	N; A; Y; N; Y; Y	
Participants	60 boys; hypospadias; ASA1; 2-10; exc' study drug allergy, bleeding tendency, CNS/spinal disease	
Interventions	Induction Either: PLACEBO +/- caudal NEOSTIGMINE 2 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2 hours.	
Notes	No side effects. Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Abou Zeid 2002

Methods	Y; B; Y; N; Y; Y	
Participants	80 women; breast; ASA1-3; mean 50; exc lung/cardiac/liver/renal disease, fever, antiemetic, N&V, hypertension, obese, alcoholic	
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 8mg iv; or DOLASETRON 12.5mg iv; or METOCLOPRAMIDE 20mg iv	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	No side effects. Unclear ifretchers/vomiters nauseated. Retching categorized separately	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Abramowitz 1983

Methods	Y; B; Y; N; Y; Y	
Participants	52 children; no sex data; 2-13; strabismus; ASA1; exc' drug/infection	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 75 to 100 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-48 hours.	
Notes	Male/female incidences not recorded. No side effects. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Adducci 2002

Methods	N; A; Y; N; Y; Y	
Participants	180 adults; 127 women; lap' chole'; 18-75 (mean 49); ASA1,2; exc' GI/ NM disease, drug abuse, <18 >75 years, antiemetic	

### Adducci 2002 (Continued)

Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg iv / ONDANSETRON 8mg iv +/- DEXAMETHASONE 8mg iv	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear ifretchers/vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Agarwal 2002

Methods	N; A; N; N; Y; cY	
Participants	150 adults; 101 women; lap' chole'; ASA1,2; 18-60 (mean 40); exc' PONV/motion sickness, renal disorder, DM, obese, antiemetic	
Interventions	Induction Either: PLACEBO; ONDANSETRON 4mg iv; PLACEBO and P6 acupressure	
Outcomes	All outcomes. Postop 0-6; 6-24 hours.	
Notes	Outcomes commonest 0-6 hours. Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ahmed 2000

Methods	Y; B; Y; N; N; N	
Participants	139 women; gynaecological; exc' pregnant/breastfeeding, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.+/- CYCLIZINE 50 mg i.v	

**Ahmed 2000** (Continued)

Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes	Vomiting commonest 0-3 hours. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Akcabay 1997**

Methods	N; B; Y; N; Y; Y	
Participants	60 adults; no sex data; ASA1,2; thyroidectomy; exc' abnormal blood	
Interventions	Induction Either: NO TREATMENT; or PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Akkaya 2001**

Methods	N; B; N; N; Y; Y	
Participants	45 adults; 24 women; mastoidectomy; ASA1,2; exc' antiemetic, PONV, GI disease, pregnant/menstrual	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg i.v. AND GRANISETRON 3mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic Postop 0-24 hours.	

**Akkaya 2001** (Continued)

Notes	Male/female incidences not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Alexander 1995**

Methods	N; B; Y; N; N; N	
Participants	145 adults; 77 women; ASA1,2; orthopaedic; exc' asthma, antiemetic, alcoholic, dopamine drug, renal failure, study drug allergy	
Interventions	Intraoperative AND postoperative PCA Either: PLACEBO twice; or DROPERIDOL 1.25mg i.v. then 5mg/60ml; or ON-DANSETRON 4mg i.v. then 8mg/60ml	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Alexander 1997**

Methods	Y; A; Y; Y; N; N	
Participants	124 adults; 76 women; ASA 1,2; orthopaedic; 16-80 (mean 56); exc antiemetic, alcoholic, renal failure	
Interventions	Preoperative Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 8mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	

**Alexander 1997** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Ali-Melkkila 1996**

Methods	Y; B; Y; N; Y; Y	
Participants	120 adults; 50 women; 18-75 (mean 45); ASA1-3; eyes; exc' fertile, lactating, confounding condition, heart/liver/renal disease, study drug allergy, drug abuse	
Interventions	Intraoperative end Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or TROPISETRON 0.1mg/kg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear if vomiters nauseated or categorized once or twice. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Allen 1999**

Methods	Y; A; Y; Y; Y; Y
Participants	58 children; 33 girls; 8-15 (mean 12); various surgeries; exc' antiemetic
Interventions	Induction Either: PLACEBO i.v.; or TROPISETRON 0.1mg/kg i.v.
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-12; 12-18; 18-24; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting
Risk of bias	

**Allen 1999** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Alon 1982**

Methods	N; B; N; N; Y; Y
Participants	30 adults; no sex data; 19-79 (mean 46); exc' DM, liver/CNS diseases
Interventions	Intraoperative Either: NO TREATMENT; or DOMPERIDONE 0.2mg/kg i.v.
Outcomes	Vomiting. Postop 0-4 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Alon 1987**

Methods	N; B; N; N; Y; Y
Participants	362 women; gynaecological
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or HALOPERIDOL 1 or 2 or 5mg i.v.; or METOCLOPRAMIDE 10 or 20mg i.v
Outcomes	Vomiting. Postop time unclear.
Notes	Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Alon 1992

Methods	N; B; Y; Y; N; N	
Participants	67 women; STOP; ASA1; 15-37 (mean 25); exc’ renal, blood, liver disease, drug abuse, study drug allergy, antiemetic	
Interventions	Preoperative Either: DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg i.v.; or ON-DANSETRON 8mg i.v	
Outcomes	All outcomes Postop 0-3 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Alon 1993b

Methods	N; B; Y; N; Y; Y	
Participants	40 women; gynaecological; ASA1,2	
Interventions	Induction Either: ONDANSETRON 4 or 8mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Alon 1994

Methods	N; B; Y; Y; Y; Y	
Participants	40 women; gynaecological; ASA1,2; exc' antiemetic, allergy, renal/liver/blood disease	

**Alon 1994** (Continued)

Interventions	Preoperative Either: DROPERIDOL 1.25mg i.v; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects not recorded. Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	D - Not used

**Alon 1996**

Methods	N; B; Y; N; N; N	
Participants	84 women; gynaecological; 17-72 (mean 34); ASA1,2; exc' renal/blood/liver disease, drug abuse/allergy, antiemetic	
Interventions	Preoperative Either: PLACEBO; or TROPISETRON 5mg i.v.	
Outcomes	All outcomes. Postop 0-4 ; 4-24; 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Alsner 1976**

Methods	N; B; N; N; Y; Y	
Participants	84 adults; 52 women; general; 16-73 (mean 46); exc' cardiac/lung disease, DM, disorder affecting outcome	
Interventions	Preoperative Either: DROPERIDOL 0.2mg/kg (max 10mg) i.m.; or PENTOBARBITONE 2mg/kg i.m	



**Alsner 1976** (Continued)

Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Altintas 1997**

Methods	N; B; N; N; Y; Y	
Participants	30 adults; no sex data; urological/plastic; ASA1,2; mean 26	
Interventions	Induction Either: PLACEBO; or intrathecal NEOSTIGMINE 200 or 500 mcg	
Outcomes	Nausea or vomiting. Postop 0-4 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Altunkaya 2003**

Methods	N; B; Y; N; Y; Y	
Participants	40 adults; 19 women; thyroidectomy; ASA1,2; 18-60 (mean 43); exc' GI disease, antiemetic	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg iv	
Outcomes	Nausea; vomiting. Postop immediate; 0-15 minutes.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear if vomiters nauseated or categorized once or twice. Retching categorized as nausea	

**Altunkaya 2003** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Anderson 1990**

Methods	N, B, Y; Y, Y; Y
Participants	339 children; 92 girls; various surgeries; exc' preference for IM drugs
Interventions	Preoperative Either: Placebo; or Alprazolam 5mcg/kg; or Chloral hydrate 40mg/kg; or Diazepam 0.25mg/kg; or Midazolam 0.3mg/kg
Outcomes	Vomiting. Postop 0-1; 1-3 hours.
Notes	Vomiting commonest 1-3 hours. Unclear how retching categorized

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ang 1998**

Methods	Y; Y; Y; N; N; N
Participants	48 children; 2-12 years (mean 6); ASA1,2; tonsil +/- adenoids; excluded cardiac/renal/liver disease
Interventions	Intraoperative Either: PLACEBO; or TROPISETRON 0.1mg/kg i.v.
Outcomes	Vomiting. Postop 0-2;2-6; 6-12 ;12-18; 18-24; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

<i>Risk of bias</i>		
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**Ang 1998** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Aouad 2001**

Methods	Y; B; Y; Y; N; N	
Participants	110 children; 74 girls; tonsil +/- adenoids; ASA1,2; exc' drug affecting outcomes, study contraindication	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 0.5 mg/kg (max 8mg) i.v.	
Outcomes	Vomiting; rescue antiemetics. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Apfel 1998**

Methods	N; B; Y; N; Y; Y	
Participants	473 patients; no sex or age data; ENT or eye	
Interventions	Intraoperative Either: NO TREATMENT; or DROPERIDOL 50 mcg/kg (route unclear)	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-2; 2-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

## Apfel 2002

Methods	Y; B; Y; N; N; N	
Participants	1180 children & adults; excluded <20% incidence of PV, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DIMENHYDRINATE 62.5 mg i.v. (1.25mg/kg); or DROPERIDOL 2.5mg i.v. (50 mcg/kg); or METOCLOPRAMIDE 50 mg/kg i.v.; or TROPISETRON 2.5mg i.v. (50 mcg/kg)	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Nausea and 'nausea or vomiting' reported for adults. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

## Apfel 2004

Methods	Y; A; Y; N; Y; N	
Participants	5199 adults, PONV risk > 0.40; six interventions; 4086 analysed; 3279 women; mean 47; various surgeries	
Interventions	Intraoperative 20 minutes after start. Either: DEXAMETHASONE 4mg i.v.; or DROPERIDOL 1.25mg i.v.; or NO TREATMENT. Intraoperative 20 minutes before end. Either; ONDANSETRON 4mg i.v.; or NO TREATMENT.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences reported. Side effects not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

#### April 1996

Methods	N; B; Y; N; Y; Y	
Participants	80 children; 35 girls; tonsil & adenoids; 3-15 (mean 7); exc' ulcer, DM, chronic disease, steroid	
Interventions	Intraoperative Either: PLACEBO; DEXAMETHASONE 1mg/kg (max 16mg) i.v.	
Outcomes	Vomiting. Postop 0-6 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

#### Arcioni 2002

Methods	Y; B; Y; Y; N; N	
Participants	60 adults; 7 women; various surgeries; mean 62; exc' pregnant, ASA>3, unable to use PCA, drug allergy/abuse, epilepsy, antiemetic, antidepressant	
Interventions	Postoperative infusion Either: PLACEBO; or ONDANSETRON 1mg/ml iv	
Outcomes	See notes.	
Notes	Incidence not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

#### Arfeen 1995

Methods	N; B; Y; N; N; N	
Participants	108 women; gynaecological; ASA1,2; 18-75 (mean 32); exc' study drug allergy, pregnant/lactating, dislike spicy food, antiemetic	

**Arfeen 1995** (Continued)

Interventions	Preoperative Either: PLACEBO; or oral GINGER 500mg or 1g	
Outcomes	Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Argiriadou 2002**

Methods	N; A; Y; Y; Y; Y	
Participants	87 adults; 66 women; lap' chole'; mean 44; ASA1,2; exc' PONV/motion sickness, GI disease, antiemetic	
Interventions	Induction Either PLACEBO; or ONDANSETRON 4mg iv; or TROPISETRON 5mg iv	
Outcomes	Nausea; vomiting; rescue antiemetic. Immediate; 3; 6; 12; 0-12 hours.	
Notes	Nausea commonest 3 hours. Unclear if vomiters nauseated or vomiters categorized once or twice. Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Ascari 1999**

Methods	N; B; N; N; Y; Y	
Participants	89 adults; various surgeries	
Interventions	Intraoperative Either: PLACEBO i.v.; or DROPERIDOL 0.625mg i.v.	
Outcomes	Nausea or vomiting. PACU; 24 hours.	

**Ascari 1999** (Continued)

Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ascaso 1997**

Methods	N; B; Y; N; Y; Y	
Participants	251 children & adults; 122 female; 5-89 (mean 69); ASA1,2; cataracts; exc' confounding conditions	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg i.v	
Outcomes	Nausea; vomiting, Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects: "no differences". Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Awad 2002**

Methods	Y; B; Y; N; N; N	
Participants	64 adults; 50 women; lap' chole' 18-80 (mean 50); ASA1,2; exc' motion sickness/PONV, antiemetic, GI disease, steroid	
Interventions	Induction Either: DROPERIDOL 1.25mg iv +/- ONDANSETRON 4mg iv	
Outcomes	All outcomes. Postop 0-1; 1-3; 3-24; 0-24 hours.	
Notes	Nausea or vomiting only 0-24 hours. Other outcomes commonest 3-24 hours. Male/female incidences not reported. Retching categorized as vomiting	

**Awad 2002** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bach-Styles 1997**

Methods	N; B; Y; Y; N; N.
Participants	?52 or 101 children; no sex data; eye; no exclusion
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or ONDANSETRON 0.15mg/kg i.v
Outcomes	See notes. Postop 0-4; 0-24 hours.
Notes	No group numbers. Percentage (not incidence) of retching/vomiting. Male/female incidences not recorded. Side effects not recorded

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bacic 1998**

Methods	N; B; N; N; N; N
Participants	50 women; thyroid; 18-45 (mean 33); exc' irregular cycle, oestrogen/progestagen, PONV/ motion sickness
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.
Outcomes	Nausea or vomiting. Postop (time unclear).
Notes	Unclear how retching categorized. Unclear if nauseated vomiters categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement



**Bacic 1998** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Badaoui 1998**

Methods	N; B; Y; N; Y; Y
Participants	68 adults; 45 women; lap' chole'; >18 (mean 54); ASA1-3
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1mg i.v.; or ONDANSETRON 4mg i.v
Outcomes	Nausea; vomiting. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Badaoui 1999**

Methods	N; B; Y; N; Y; Y
Participants	300; ASA 1 or 2; general
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 1mg i.v.; or ONDANSETRON 4mg i.v
Outcomes	Nausea; vomiting. Postop 4; 8; 12; 24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Barros-de 2002

Methods	N; B; N; N; Y; Y	
Participants	42 women; gynaecological; ASA1,2; mean 44; exc' opioid, antiemetic, antihistamine, benzodiazepine	
Interventions	Induction Either: PLACEBO;or epidural DROPERIDOL 2.5mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Barrow 1994

Barrow 1991

Methods	N; B; N; N; Y; Y	
Participants	60 women; hysterectomy; ASA1,2	
Interventions	Induction AND postoperative PCA Either: PLACEBO twice; or DROPERIDOL 1.25mg i.v. then PLACEBO; or DROPERIDOL 1.25mg i.v. then 0.1mg/ml	
Outcomes	Postop 0-24 hours.	
Notes	Unclear how retching categorized or if nauseated vomiters categorized once or twice. No side effects	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Barst 1999

Methods	Y; Y; Y; N; N; N	
Participants	92 children; 43 girls; ASA1,2; 1-18 (mean 7); tonsil +/- adenoids; exc' study drug allergy, motion sickness	

**Barst 1999** (Continued)

Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.1 mg/kg (max 4mg) i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Batra 2003**

Methods	N; B; N; N; Y; Y	
Participants	120 boys; hypospadias; ASA1; 2-8 (mean 6); exc' bleeding tendency, spinal/CNS disease	
Interventions	Intraoperative Either: NO TREATMENT; or caudal NEOSTIGMINE 10 or 20 or 30 or 40 or 50 mcg/kg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Baxendale 1993**

Methods	N; B; Y; Y; Y; N	
Participants	50 adults; 30 women; ASA1,2; dental extraction; 18-45 (mean 23)	
Interventions	Preoperative Either: PLACEBO; or oral DEXAMETHASONE 8mg	

### Baxendale 1993 (Continued)

Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Only incidence of vomiting clear. Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Beattie 1993

Seah 1995

Methods	N; B; Y; Y; Y	
Participants	100 women; lap' steri'; ASA1,2; exc' oral contraceptive, antiemetic, unclear or no menses	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 10 or 20 or 30 mcg/kg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6; 6-24; 0-24 hours.	
Notes	Side effects not recorded. Categorized by 'worst' symptom. Retching categorized with vomiting. Unclear if vomiters retched or nauseated	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Benhamou 1994

Methods	N; B; Y; Y; Y; Y.	
Participants	40 adults; abdominal; exc' >75, opioid abuse, heart/renal/hepatic/lung failure, high BP, postop' ventilation	
Interventions	Preoperative AND postoperative Either: PLACEBO twice; or oral CLONIDINE 300 mcg/kg twice	
Outcomes	Postop 0-24 hours.	
Notes		

**Benhamou 1994** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bharti 2003**

Methods	N; B; Y; N; Y; Y.
Participants	120 children; 63 girls; strabismus; 1-15 (mean 6); ASA1,2; exc' motion sickness/PONV
Interventions	Induction Either: PLACEBO; or DROPERIDOL 25 mcg/kg iv; or ONDANSETRON 150 mcg/kg iv
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-24; 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Biedler 1998**

Methods	N; B; Y; N; N; N
Participants	390 women; gynaecological; mean 51; exc' <18, >100kg, ASA>3, recent antiemetic/N&V, study drug allergy, pregnant
Interventions	Induction Either: PLACEBO; or ONDANSETRON 8mg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Side effects not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Biedler 1998** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Bilgin 1998**

Methods	N; B; Y; N; Y; Y
Participants	60 women; gynaecological; ASA1,2; 21-42 (mean 33); exc' pregnant, breast feeding, antiemetic, abnormal blood
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.; or TROPISETRON 5mg i.v
Outcomes	Nausea; vomiting. Postop 0-10; 10-20; 20-30; 30-60 min; 1-6; 0-6 hours.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bisgaard 2003**

Methods	Y; A; Y; Y; N; N
Participants	88 adults; 50 women; lap' chole'; ASA 1,2; mean 43; excluded >75, ASA>2, pregnant, ERCP, chronic pain, disease, opioid/tranquilizer, drug abuse
Interventions	Preoperative Either: PLACEBO; or DEXAMETHASONE 8mg iv
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Biswas 2003**

Methods	Y; B; Y; Y; Y; Y.	
Participants	120 adults; 96 women; lap' chole'; ASA1,2; 21-55 (mean 42); exc' GI/NM disease, motion sickness/PONV, pregnant, menstrual, smoked, DM, antiemetic	
Interventions	Induction Either: GRANISETRON 50 mcg/kg +/- DEXAMETHASONE 8mg iv	
Outcomes	All outcomes. Postop 0-4; 4-24; 0-24 hours.	
Notes	Nausea and rescue antiemetic commonest 0-4 hours, vomiting 4-24 hours. Male/female incidences not reported. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Blanc 1991**

Methods	N; B; Y; N; Y; Y	
Participants	100 children; 53 girls; strabismus; ASA1	
Interventions	Intraoperative Either: DROPERIDOL 75mcg/kg i.v. and PLACEBO; or PROMETHAZINE 0.5mg/kg i.v. and 0.5mg/kg i.m. (max 25mg)	
Outcomes	Vomiting. Postop 0-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bock 2002**

Methods	Y; A; Y; N; N; N	
Participants	80 children; 9 girls; minor surgery; ASA1,2; 3-8 (mean 5); exc' endocrine disease, MH risk, aortic stenosis, infection, preop' agitation	
Interventions	Induction Either: PLACEBO twice; or caudal CLONIDINE 1 or 3 mcg/kg AND PLACEBO; or PLACEBO AND CLONIDINE 3 mcg/kg iv	
Outcomes	Nausea or vomiting. Postop 0-2 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Boeke 1994**

Methods	N; B; Y; N; N; N	
Participants	80 adults; 38 women; general; ASA1,2	
Interventions	Intraoperative Either: No treatment; or Neostigmine 1.5mg i.v. AND Atropine 0.5mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postoperative 0-5; 5-24; 24-48; 0-24 hours.	
Notes	Male/female incidences not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear



**Bone 1990**

Methods	N; B; Y; N; Y; Y
Participants	60 women; gynaecological; ASA1,2; 16-65 (mean 41); exc' antiemetic/opioid
Interventions	Preoperative then induction Either; PLACEBO twice; or oral GINGER 1g then PLACEBO; or PLACEBO then METOCLOPRAMIDE 10mg i.v
Outcomes	Nausea; nausea or vomiting; rescue antiemetic. PACU; PACU-4 hours; 4-12; 12-24; 0-24 hours.
Notes	Nausea commonest PACU and 4-12 hours. No side effects.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bonhomme 2002**

Methods	N; B; Y; Y; Y; Y
Participants	40 women; caesarean
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL PCA 83mcg/ml
Outcomes	See notes.
Notes	Percentage not incidences. Side effects: "droperidol sedated breast-fed infant"

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Booij 1988**

Methods	N; B; Y; N; Y; Y
Participants	90 women; gynaecological; ASA1,2
Interventions	Intraoperative Either: PLACEBO; or ALIZAPRIDE 50 or 100 or 200mg i.v

**Booij 1988** (Continued)

Outcomes	Nausea, vomiting, rescue antiemetics Postop 0-4 hours	
Notes	Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Borgeat 1995**

Methods	N; B; Y; N; Y; Y	
Participants	Unclear number or sex of children; strabismus; 3-14	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 5mg/msq	
Outcomes	See notes.	
Notes	Percentage not incidence of nausea or vomiting. Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Boudierka 2003**

Methods	Y; B; Y; Y; Y; N	
Participants	90 adults; 31 women; plastic/orthopaedic; ASA1,2; mean 33	
Interventions	Induction Either: PLACEBO; or plexal NEOSTIGMINE 500 mcg; or s/c	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects.	

**Bouderka 2003** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Boulanger 1979**

Methods	N; B; Y; Y; Y; Y
Participants	106 patient; no other data
Interventions	Postoperative four times Either: PLACEBO; or DOMPERIDONE 30mg i.v. then 10mg i.v. thrice
Outcomes	Nausea or vomiting. Postop 0-3; 0-6; 0-9; 0-12; 0-15; 0-18; 0-21; 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bouly 1992**

Methods	N; B; Y; N; N; N
Participants	60 adults; 53 women; thyroid; mean 50; exc' drug interaction
Interventions	Preoperative Either: PLACEBO; or oral ONDANSETRON 8mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-12 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Bouly 1992** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Bouly 1993**

Methods	N; B; Y; N; N; N
Participants	60 adults; no sex data; thyroid
Interventions	Preoperative Either: PLACEBO; or oral ONDANSETRON 8mg
Outcomes	See notes.
Notes	Male/female incidences not recorded. Side effects not recorded. No number per group

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bowhay 2001**

Methods	Y; A; Y; Y; Y; N
Participants	131 children; 53 girls; strabismus; ASA1,2; 2-13 (mean 6); exc' antiemetic, renal/liver/metabolic/endocrine disease
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 0.04 or 0.1 or 0.2mg/kg i.v.
Outcomes	Vomiting; rescue antiemetic. Postop 0-8; 0-24 hours.
Notes	Male/female incidences not reported. Side effects incidence not reported. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Boyd 1973**

Methods	N; B; Y; Y; Y; Y.	
Participants	200 children; no sex data; 2-9; ENT surgery	
Interventions	Preoperative Either: oral DIAZEPAM 0.2mg/kg; or oral TRICLOFOS 71mg/kg	
Outcomes	Vomiting. Postop period unclear.	
Notes	No side effects. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Brady 1994**

Methods	N; B; N; N; N; N	
Participants	64 adults; 38 women; orthopaedic	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	Nausea. PACU	
Notes	Nausea not reported for 0-24 hours.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Breivik 1971**

Methods	N; B; Y; N; N; N	
Participants	60 women; cholecystectomy; 20-69 (mean 44); exc' post hoc NG & 'pethidine intolerance'	
Interventions	Intraoperative AND postoperative thrice Either: PLACEBO; or METOCLOPRAMIDE 10mg i.m. each time	

**Breivik 1971** (Continued)

Outcomes	Vomiting; nausea or vomiting. Postop 0-6; 6-18 hours.	
Notes	Outcomes commonest 6-18 hours. Side effects not recorded. Retching categorized as vom- iting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Briggs 1985**

Methods	N; B; Y; Y; Y; Y	
Participants	120 women; gynaecological; 18-65; ASA1,2; exc' liver, renal, blood/metabolic disease, obese, pregnant	
Interventions	Preoperative Either: NO TREATMENT; or oral DIAZEPAM 10 mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop time unclear.	
Notes	No incidences (physiology & propofol).	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Broadman 1990**

Methods	Y; B; Y; Y; Y; Y	
Participants	126 children; 57 girls; ASA1,2; 2-18 (mean 7.3); strabismus; exc' N&V risk, disorder affecting outcome	
Interventions	Postoperative Either: PLACEBO; or METOCLOPRAMIDE 0.15 mg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-8 hours.	

**Broadman 1990** (Continued)

Notes	Male/female incidences not reported. No side effects.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Brown 1991**

Methods	N; B; Y; N; Y; Y	
Participants	100 children; no sex data; strabismus; ASA1,2; 2-18 years	
Interventions	INDUCTION Either: PLACEBO; or DROPERIDOL 20 or 75 mcg/kg i.v.	
Outcomes	Vomiting. Postop 0-2 hours.	
Notes	Male/female incidences not recorded. Side effects “droperidol sedative” . Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Bugedo 1999**

Methods	N; B; Y; Y; Y; Y	
Participants	242 adults; 193 women; 18-60; ASA1,2; gynaecological/biliary	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5mg i.v. +/- ONDANSETRON 4mg i.v	
Outcomes	See notes.	
Notes	Male/female incidences not reported. Side effects 'droperidol sedative'. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Bugedo 1999** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Burmeister 2003**

Methods	Y; A; Y; N; Y; Y
Participants	40 adults; 23 women; lithotripsy; 20-77 (mean 48); ASA1,2; exc' ASA>3, COPD
Interventions	Preoperative Either: PLACEBO; or DOLASETRON 12.5mg iv
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-2; 0-2 hours.
Notes	Outcomes commonest 0-1 hour. Male/female incidences not reported. Side effects not recorded. Unclear how retching was categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Busoni 2000**

Methods	Y; A; N; N; Y; Y
Participants	569 boys; general; 2-12 (mean 5); ASA1,2; exc' sleep apnoea, PONV, antiemetic, benzo-diazepine
Interventions	Induction Either: NO TREATMENT; or DEXAMETHASONE 150 mcg/kg i.v.
Outcomes	Vomiting. Postop 0-24 hours.
Notes	Side effects not recorded. Retching not categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate



**Butrón 1996**

Methods	N; B; N; N; Y; Y	
Participants	120 adults; 90 women; rhinoplasty (ENT); ASA1,2; 15-45	
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v. +/- CIMETIDINE 300mg i.v.	
Outcomes	Nausea; vomiting. Postop (time unclear).	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Cade 1993**

Methods	N; B; Y; N; Y; Y	
Participants	60 women; gynaecological; ASA1	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.5mg i.v.	
Outcomes		
Notes	Side effects “no differences”. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Calamandrei 1994**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; no sex data; 4-12 (mean 6); ASA1,2; general; exc' previous GA, motion sickness, antiemetic, obese	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.12mg/kg i.v.; or ONDANSETRON	

**Calamandrei 1994** (Continued)

	5mg/msq	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-8 hours.	
Notes	Male/female incidences not recorded. Side effects: 'no difference'. Retching categorized as nausea	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Campbell 1990**

Methods	N; B; N; N; N; N.	
Participants	74 adults; ASA1,2; 18-59 (mean 31); no sex data; various surgeries	
Interventions	Induction Either: NO TREATMENT; or DROPERIDOL 0.015 mg/kg i.v.	
Outcomes	See notes.	
Notes	Percentages not incidences reported.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Campbell 1991**

Methods	N; B; Y; N; N; Y	
Participants	160 adults; 84 women; dental	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 0.15mg/kg (max 12mg); or PENTA-ZOCINE 0.4mg/kg (max 30mg) i.v	
Outcomes	Vomiting. Postop 0-24 hours.	

**Campbell 1991** (Continued)

Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Campbell 1995**

Methods	N; B; Y; N; Y; Y	
Participants	32 adults; 15 women; various surgeries; ASA1,2; 18-70 (mean 36); exc' pregnant, renal/ blood/liver disease, obese, drugs affecting outcome, N&V	
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Capouet 1996**

Methods	Y; B; Y; Y; N; N	
Participants	385 women; gynaecological; ASA1,2; 18-75 (mean 40); exc' N&V, antiemetic, NG, drug abuse, study drug allergy, pregnant	
Interventions	Induction Either: PLACEBO; or TROPISETRON 0.5 or 2 or 5mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	

**Capouet 1996** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Carabine 1992**

Methods	N; B; Y; N; Y; Y
Participants	100 adults; 54 women; ASA1,2; 30-75 (mean 64); orthopaedic; exc' drugs, contraindication to extradural
Interventions	Intraoperative AND postoperative Either: CLONIDINE 150 mcg then 25 or 50 mcg/hr; or MORPHINE 1mg then 0.1mg/hr; or both (CLONIDINE 150 mcg then MORPHINE)
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Unclear how retching categorized. Unclear if all vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Carnahan 1997**

Methods	N; B; Y; N; Y; Y
Participants	54 children; 26 girls; ASA1,2; tonsil + adenoid; exc' CNS/liver/renal/cardiac disease, study drug allergy
Interventions	Induction Either: PLACEBO; or GRANISETRON 10 mcg/kg i.v.
Outcomes	Vomiting. Postop 0-8; 8-24 hours.
Notes	Vomiting commonest 0-8 hours. Male/female incidences not reported. Unclear how retching categorized

<i>Risk of bias</i>		
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**Carnahan 1997** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Caron 2003**

Methods	N; B; Y; Y; Y; Y
Participants	172 children; 73 girls; strabismus; 3-10; exc' motion sickness/PONV, antiemetic/N&V, liver/renal/gastric disease
Interventions	Intraoperative AND postoperative every 8 hours Either: DROPERIDOL 0.05mg/kg iv then +/- oral DIMENHYDRINATE 1.25mg/kg; or ONDANSETRON 0.1mg/kg iv then +/- oral 0.15mg/kg
Outcomes	Nausea; vomiting. In hospital; discharge-24 hours; 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Carr 1994**

Methods	N; B; Y; N; Y; Y
Participants	234 children; 121 girls; strabismus; 2-12 (mean 6); ASA1,2
Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.1mg/kg (max 4mg) i.v.
Outcomes	Vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Carr 1994** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Celik 2001**

Methods	N; B; Y; N; Y; Y
Participants	90 children; 46 girls; 4-10 (mean 7); tonsils +/- adenoids; ASA1
Interventions	Induction Either: GRANISETRON 40 mcg/kg i.v.; or DROPERIDOL 50 mcg/kg i.v. AND METO-CLOPRAMIDE 0.25mg/kg i.v
Outcomes	All outcomes Postop 0-3; 3-24 hours.
Notes	Outcomes commonest 3-24 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Chan 1983**

Methods	N; B; N; N; Y; Y
Participants	431 women; STOP
Interventions	Preoperative Either: No treatment; or METOCLOPRAMIDE 10mg i.v.; or PROCHLORPERAZINE 6.25 or 12.5mg i.m
Outcomes	Vomiting. PACU
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Chan 1998

Methods	N; A; Y; Y; N; N	
Participants	150 women; breast; ASA1,2; exc' GI disease, drug abuse, pregnant/menstrual, N&V/antiemetic	
Interventions	Induction Either: PLACEBO; or TROPISETRON 2 or 5mg i.v.	
Outcomes	All outcomes Postop 0-2; 2-6; 6-12; 12-18; 18-24; 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Chapa 1987

Methods	N; B; N; N; Y; Y	
Participants	60 adults; 53 women; liver surgery; 20-94 (mean 43); exc' NG	
Interventions	Preoperative AND postoperative Either: PLACEBO twice; or RANITIDINE 50mg i.v. twice.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Charuluxananan 2003

Methods	Y; A; Y; Y; Y; Y	
Participants	240 women; caesarean; exc' study drug allergy, skin disorder	

**Charuluxananan 2003** (Continued)

Interventions	Intraoperative Either: PLACEBO; or NALBUPHINE 4mg iv; or ONDANSETRON 4 or 8mg iv	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-4 hours. [see notes].	
Notes	Unclear how retching categorized. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Chelly 1996**

Methods	N; B; Y; N; Y; Y	
Participants	351 adults; 308 women; laparoscopies; ASA1,2; 19-75; exc' fertile women, study drug allergy	
Interventions	Preoperative Either: oral PLACEBO; or oral POLONASETRON 0.3 or 1 or 3 or 10 or 30 mcg/kg	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Chen 1996**

Methods	Y; B; Y; N; N; N	
Participants	50 women; gynaecological; ASA1,2; 18-60 (mean 40); exc' N/V, opioids/antiemetic, pregnant, reflux, drug abuse	
Interventions	Intraoperative Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg i.v.	



**Chen 1996** (Continued)

Outcomes	All outcomes Postop 0-1; 1-4; 4-12; 12-24; 0-4; 0-24 hours.	
Notes	Side effects “sedation same”. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Chen 1998**

Methods	Y; A; Y; N; Y; N	
Participants	80 adults; 49 women; orthopaedic; >17 (mean 63); ASA1-3; exc' antiemetic, study drug allergy, pregnant/breast feeding	
Interventions	Introperative Either: PLACEBO AND ONDANSETRON 4mg iv; or PROCHLORPERAZINE 10mg im AND PLACEBO	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-48 hours.	
Notes	Side effects not recorded. Retching categorized as vomiting. Unclear if nauseated retchers/ vomiters categorized once, twice, thrice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Chen 2001**

Methods	Y; A; Y; Y; N; N	
Participants	105 women; laparoscopy; ASA1,2; 19-56 (mean 38); exc' antiemetic, psychoactive drug, obese, pregnant, ASA>2, N&V	
Interventions	Preoperative AND intraoperative twice Either: DOLASETRON 12.5mg i.v. then PLACEBO twice; or PLACEBO then DOLASETRON 12.5mg i.v. then PLACEBO; or PLACEBO twice then DOLASETRON 12.5mg i.v	

**Chen 2001** (Continued)

Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-4; 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Cherian 2001**

Methods	Y; A; Y; N; Y; Y	
Participants	81 women; Caesarean; exc' liver/renal/ psychiatric/CNS disease, preeclampsia	
Interventions	Intraoperative AND postoperative Either: NO TREATMENT then PCA; or ONDANSETRON 4mg i.v. then 0.13 mg/ml PCA	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Chestnutt 1986**

Methods	N; B; Y; Y; Y; Y	
Participants	120 women; gynaecological	
Interventions	Preoperative Either: PLACEBO; or CYCLIZINE 50 mg i.m.; or PERPHENAZINE 2.5mg i.m	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-6 hours.	

**Chestnutt 1986** (Continued)

Notes	Nausea commonest 1-6 hours, vomiting and 'nausea or vomiting' 0-1 hour. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Chhibber 1999**

Methods	Y; A; Y; N; N; N	
Participants	93 children; 48 girls; tonsil +/- adenoids; 3-16 (mean 7); ASA1,2; exc' drugs, post hoc bradycardia	
Interventions	Postoperative Either: ATROPINE 15 mcg/kg i.v.; or GLYCOPYRROLATE 10 mcg/kg i.v	
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching not categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Chisakuta 1995**

Chinnakara 1999

Methods	N, B, Y, N, Y, Y
Participants	121 children; 58 girls; strabismus; 1-12 (mean 6); exc' anaesthetic reaction
Interventions	Induction Either: Placebo ; or Atropine 15 mcg/kg i.v.; or Glycopyrrolate 7.5 mcg/kg i.v
Outcomes	Nausea or vomiting; rescue antiemetic. Postoperative 0-24 hours.
Notes	Male/female incidences not recorded. No side effects reported
<i>Risk of bias</i>	

**Chisakuta 1995** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Cholwill 1999**

Methods	Y; B; Y; Y; N; N
Participants	180 women; ASA1,2; gynaecological; exc' pregnant, breast feeding, obese, antiemetic
Interventions	Induction Either: PLACEBO; or CYCLIZINE 50 mg i.v.; or ONDANSETRON 4 mg i.v
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.
Notes	Side effects not recorded.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Christensen 1989**

Methods	Y; B; Y; N; Y; Y
Participants	150 children; no sex data; strabismus; ASA1,2; 2-15 (mean 5 )
Interventions	Induction Either: DROPERIDOL 0.075mg/kg i.v.; or LIDOCAINE 1.5mg/kg i.v.; or DROPERIDOL 0.025mg/kg i.v. AND LIDOCAINE 1.5mg/kg i.v
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 0-72 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Chung 1998

Methods	N; B; N; N; N; N	
Participants	80 pregnant women; caesarean; ASA 1,2; exc' obstetric/fetal complications	
Interventions	Induction Either: PLACEBO; or intrathecal MORPHINE 100 mcg; or NEOSTIGMINE 25 mcg; or both	
Outcomes	Nausea or vomitiing; rescue antiemetic. Postop 0-24 hours.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Cieslak 1996

Methods	Y; B; Y; Y; Y; Y	
Participants	97 children; 47 girls; ASA1,2; 2-16 (mean 5); various surgeries; exc' antiemetic, study drug allergy'	
Interventions	INDUCTION Either: PLACEBO; or GRANISETRON 10 or 40 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Clyburn 1986

Methods	N; B; N; N; Y; Y
Participants	60 women; gynaecological; ASA1,2; 15-65 (mean 28); exc' liver/renal/blood/metabolic diseases, drug abuse, neuroleptic
Interventions	Preoperative Either: DIAZEPAM 150 mcg/kg i.v.; or MIDAZOLAM 70 mcg/kg i.v
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3 hours.
Notes	Incidences of vomiting and 'nausea or vomiting' not reported. Side effects not reported

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Coloma 2001

Methods	Y; B; Y; N; Y; Y
Participants	80 adults; 43 women; general; ASA1-3; exc' NSAID allergy, heart/kidney/liver disease, steroid
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 4mg i.v.
Outcomes	Nausea Postop 0-2; 2-24 hours.
Notes	Nausea commonest 2-24 hours. Male/female incidences not reported. Side effects not reported

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Coloma 2002**

Methods	Y; B; Y; Y; Y; Y	
Participants	140 adults; 110 women; lap' chole'; ASA1,2; exc' antiemetic, disease, drug abuse, pregnant, obese, study drug allergy	
Interventions	Intraoperative Either: DOLASETRON 12.5mg i.v. AND PLACEBO or DEXAMETHASONE 4mg i.v	
Outcomes	Nausea; vomiting. Postop 0-5; 5-24 hours.	
Notes	Nausea commonest 0-5 hours, vomiting 5-24 hours. Male/female incidences and side effects not reported. Unclear if nauseated retching vomiters categorized once, twice or thrice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Conroy 1993**

Methods	N; B; Y; N; Y; Y	
Participants	44 children; no sex data; strabismus	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or ONDANSETRON 0.15mg/kg i.v	
Outcomes	Nausea or vomiting. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female not recorded. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Cook-Sather 2002

Methods	Y; A; Y; Y; N; N	
Participants	124 children; 24 girls; general; ASA1,2; 2-12 (mean 5); exc' reflux, gastroparesis, motion sickness, prior POV, renal/heart disease, antibiotic	
Interventions	Preoperative AND postoperative Either: PLACEBO; or oral CISAPRIDE 0.3mg/kg then PLACEBO; or PLACEBO then oral CISAPRIDE 0.3mg/kg	
Outcomes	Vomiting. Postop 0-4; 4-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Cooke 1979

Methods	N; B; Y; N; N; N	
Participants	195 women; gynae/caesarean; exc' renal, liver, CNS, cardiac disease	
Interventions	Induction Either: PLACEBO; or DOMPERIDONE 4mg i.v.; or METOCLOPRAMIDE 10mg i.v	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop time unclear.	
Notes	Unclear how retching categorized or if vomiters nauseated.	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Cosar 1997

Methods	N; B; N; N; Y; Y.	
Participants	30 women; gynaecological; ASA1,2	



**Cosar 1997** (Continued)

Interventions	Intraoperative Either: PLACEBO; or TROPISETRON 5mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Cote 2002**

Methods	Y; B; Y; Y; N; N	
Participants	405 children; no sex data; various surgeries; ASA1-3; 0.5-16 (mean 5); exc' seizures, con- founding condition	
Interventions	Preoperative Either: oral MIDAZOLAM 0.25 or 0.5 or 1mg/kg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop (time unclear).	
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Cozanitis 1996**

Methods	N; B; Y; N; Y; Y	
Participants	60 women; hysterectomy	
Interventions	Preoperative twice AND intraoperative Either: PLACEBO; or PLACEBO twice then DROPERIDOL 0.75mg i.v.; or oral RAN-ITIDINE 300mg twice then PLACEBO	

**Cozanitis 1996** (Continued)

Outcomes	Nausea or vomiting; rescue antiemetic. PACU; discharge-24 hours.	
Notes	Nausea or vomiting commonest second period, rescue antiemetic commonest first period. No side effects	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Cramb 1989**

Methods	N; A; Y; N; N; N	
Participants	100 adults; 84 women; ASA1,2; abdominal/head & neck; mean 39; exc' drug allergy, phenothiazine, pregnant/breast feeding	
Interventions	Intraoperative Either: PLACEBO; or PROCHLORPERAZINE 10mg i.v.	
Outcomes	Nausea; vomiting. Postop (pre-narcotics); (post-narcotics).	
Notes	Outcomes commonest first period. Male/female incidences not reported. Side effects not recorded. Unclear if vomiters nauseated. Retching a subset of vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Culebras 2003**

Methods	Y; A; Y; Y; N; N	
Participants	340 adults; 174 women; various surgery; ASA1-3; 18-80; exc' neuroleptics, spinal opioids, extrapyramidal, butyrophenones allergy, renal disease	
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL 5 or 15 or 50 mcg/ml	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	

**Culebras 2003** (Continued)

Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**D'Angelo 1997**

Methods	N; B; N; N; Y; Y	
Participants	192 women; laparoscopies	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.5mg i.v.; or METOCLOPRAMIDE 15mg i.v.; or ONDANSETRON 4mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. 0-PACU discharge; 0-24 hours.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Dabbous 1998**

Methods	N; B; Y; N; Y; Y	
Participants	85 adults; 53 women; lap' chole'; ASA1,2	
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Retching not categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Dabbous 1998** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Daftary 1998**

Methods	N; B; Y; Y; Y; Y
Participants	150 adults & children; 71 female; tonsil +/- adenoids; ASA1; mean 12; exc' <4, antiemetic
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.2 mg/kg i.v.; or ONDANSETRON 0.1 mg/kg i.v
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-6 hours.
Notes	Vomiting commonest 0-2 hours. Male/female incidences not reported. Unclear if retching vomiters categorized once or twice or if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Danner 2001**

Methods	N; B; Y; N; Y; Y
Participants	136 adults; 93 women; thyroid; ASA1-3; excluded 5HT/droperidol antagonist, antiemetic, heart/thyroid/renal/liver disease
Interventions	Preoperative AND induction Either: oral DOLASETRON 50mg then NO TREATMENT; or NO TREATMENT then PLACEBO/DOLASETRON 12.5mg i.v./DROPERIDOL 1.25mg i.v
Outcomes	Nausea or vomiting. Postop 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Davies 1971

Methods	N; B; Y; Y; Y; Y	
Participants	480 children; no sex data; strabismus	
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 0.22mg/kg i.m. +/- PHENOPERIDINE 0.044 mg/kg i.m	
Outcomes	Vomiting. Postop 0-4; 4-24 hours.	
Notes	Outcomes commonest 4-24 hours. Male/female incidences not reported. Unclear how retching was categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Davies 1983

GRADE 1b

Methods	N; B; Y; Y; Y; Y	
Participants	40 adults; 20 women; septoplasty; ASA1,2; mean 31	
Interventions	Preoperative Either: PLACEBO; or oral DIAZEPAM 10mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Davies 1996

Methods	Y; A; Y; N; N; N	
Participants	70 women; hysterectomy; ASA1,2; excluded study drug allergy	

**Davies 1996** (Continued)

Interventions	Induction AND postoperative Either: PLACEBO; or ONDANSETRON 4mg i.v. twice	
Outcomes	Nausea; vomiting. Postop 0-24; 0-120 hours.	
Notes	Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Davis 1995**

Methods	N; B; Y; Y; N; N	
Participants	102 children; no sex data; dental; ASA1,2; 2-8 (mean 4)	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or ONDANSETRON 100 mcg/kg i.v	
Outcomes	Vomiting. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Davis 1995b**

Methods	Y; B; Y; Y; Y; Y	
Participants	213 children & adults; 84 female; strabismus; ASA1,2; mean 12	
Interventions	Induction Either: DROPERIDOL 75 mcg/kg i.v.; or ONDANSETRON 75 or 150 mcg/kg i.v	

**Davis 1995b** (Continued)

Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Dershwitz 1998**

Methods	N; A; Y; Y; Y; Y	
Participants	175 women; 18-80 (mean 41); excluded pregnant, N&V, antiemetic, postop' ETT/NG/ICU	
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 0.5. or 1 or 2 or 4 or 8 or 16 mg i.v	
Outcomes	Rescue antiemetic. Postop 0-6; 0-24 hours.	
Notes	Side effects not reported. Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Diamond 1980**

Methods	N; B; Y; N; Y; Y	
Participants	206 adults; 115 women; orthopaedic/gynaecological	
Interventions	Preoperative Either: PLACEBO; or oral METOCLOPRAMIDE 20mg	
Outcomes	Nausea or vomiting. Postop 0-1; 1-3; 3-6 hours.	
Notes	Nausea or vomiting commonest 1-3 hours. Unclear how retching categorized	

**Diamond 1980** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Diamond 1988**

Methods	N; B; Y; N; Y; Y
Participants	90 women; laparoscopies; ASA1,2; excluded pregnant
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 20 or 50mg i.v.
Outcomes	Vomiting. Postop time unclear.
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Diemunsch 1997**

Methods	Y; B; Y; N; Y; Y
Participants	281 women; gynae; ASA1,2; 18-55 (mean 37); excluded pregnant/breast feeding/menstrual, liver/renal/cardiac/metabolic disease, cardiac drug, bowel obstruction, antiemetic, NG, drug abuse
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 12.5 or 25 or 50 or 100mg i.v
Outcomes	Vomiting. Postop 0-2; 0-6; 0-12; 0-24 hours.
Notes	Retching categorized as vomiting.

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement



**Diemunsch 1997** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Diemunsch 1998**

Methods	Y; B; Y; N; Y; Y
Participants	793 women; gynae; ASA1-3; 18-60 (mean 43); excluded pregnant, liver/renal/endocrine/cardiac disease, antiemetic, post hoc NG
Interventions	Preoperative 1-2 hours Either: PLACEBO; or oral DOLASETRON 25 or 50 or 100 or 200mg
Outcomes	Nausea; nausea or vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Retching categorized as vomiting.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Dillier 2000**

Methods	N; B; Y; N; Y; Y
Participants	98 children; 41 girls; tonsil +/- adenoids; ASA1,2; exc' N&V, study drug allergy
Interventions	Induction Either: PLACEBO; or TROPISERON 0.1mg/kg (max 2mg) i.v.
Outcomes	Vomiting. Postop 0-24 hours.
Notes	Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ding 1994

Methods	N; B; Y; N; Y; Y	
Participants	60 women; lap' steri'; ASA1,2; exc' analgesic/antiemetic, study drug allergy, lung disease	
Interventions	Intraoperative Either: NO TREATMENT; or NEOSTIGMINE 2.5mg i.v. AND GLYCOPYRROLATE 0.5mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-5; 5-24 hours.	
Notes	Outcomes commonest 0-5 hours. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Dobkin 1968

Methods	N; B; Y; Y; Y; Y	
Participants	284 adults; 159 women; GI surgery	
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 20mg i.v.; or TRIMETHOBENZAMIDE 300mg i.v	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Dodson 1978

Methods	N; B; Y; Y; N; N	
Participants	138 women; 16 to 70; gynaecological; exc' <16 >70, premed' preference	
Interventions	Preoperative Either: oral LORAZEPAM 2.5mg; or PROMETHAZINE 50mg	
Outcomes	Vomiting. Postop 1 hour.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Doe 1998

Methods	N; B; Y; N; Y; Y	
Participants	45 adults; 19 women; strabismus; ASA1-3; 15-65; excluded obese, liver disease, seizure, difficult airway, antiemetic/opioid, study drug allergy	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-5; 5-24 hours.	
Notes	Nausea commonest 1-5 hours, vomiting 5-24 hours. Male/female incidences not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Doenicke 1994

Methods	N; B; N; N; Y; Y	
Participants	1094 adults; regional/GA; ASA1-4; no sex data; no exclusion data	
Interventions	Preoperative twice Either: NO TREATMENT; or NO TREATMENT then CIMETIDINE 5mg/kg/RAN-ITIDINE 1.25mg/kg i.v.; or oral RANITIDINE 300mg then NO TREATMENT	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Doyle 1994

Methods	Y; B; Y; N; Y; Y	
Participants	40 children; 27 girls; general; 6-14 (mean 11); exc' antemetics	
Interventions	Induction Either: PLACEBO; or HYOSCINE 140 mcg, 5 microgram/hr (patch)	
Outcomes	All outcomes Postop 0-72 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Dresner 1998

Methods	Y; B; Y; N; Y; Y	
Participants	60 women; hysterectomy; ASA1,2; exc' study drug allergy, PONV	
Interventions	Intraoperative AND postoperative Either: DROPERIDOL 1.25mg i.v. then PCA 0.1mg/ml ; or ONDANSETRON 4 mg i. v. then PCA 1mg/ml	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 4; 8; 12; 24; 0-24 hours.	
Notes	Nausea commonest at 8 hours. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Duarte 1985

Methods	N; B; Y; N; N; N	
Participants	300 women; ASA1,2; excluded pregnant/breast feeding, heart/kidney/liver disease, postop NG	
Interventions	Postoperative Either:PLACEBO; or CLEBOPRIDE 2mg i.m.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-12 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Dundee 1975

Methods	N; B; Y; Y; Y; Y	
Participants	1300 women; gynaecological	
Interventions	Preoperative Either: PLACEBO; or CYCLIZINE 50mg i.m.; or PERPHENAZINE 2.5 or 5mg i.m	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6 hours.	
Notes	Summary of publications. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Dupeyron 1993

Methods	Y; B; Y; Y; N; N	
Participants	243 women; gynaecological; exc' pregnant, ASA>3, N&V/antiemetic, cardiac/lung/renal/liver/CNS/disease	
Interventions	Preoperative AND postoperative (twice) Either: PLACEBO; or oral ONDANSETRON 8mg thrice	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Nausea or vomiting incidences may be adjusted. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Eberhart 1996

Methods	N; B; Y; N; Y; Y	
Participants	304 adults; 183 women; general/gynaecological; 18-76 (mean 48); exc' N&V, antiemetic, ASA>3, NYHA>2, prostatism, glaucoma	

**Eberhart 1996** (Continued)

Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE patch
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-10; 10-24; 24-48; 0-48 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Eberhart 1999**

Methods	N; A; Y; Y; N; N
Participants	150 women; various surgeries; ASA1,2; 18-70 (mean 45); exc' antiemetic/N&V
Interventions	Induction AND postoperative suppository thrice Either: PLACEBO; or DIMENHYDRINATE 62mg i.v. then 150mg thrice
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-48 hours.
Notes	Side effects: "dry mouth with dimenhydramine". Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Eberhart 1999b**

Methods	Y; A; Y; Y; Y; Y.
Participants	140 men; ENT; ASA1,2; exc' antiemetic/N&V
Interventions	Induction AND Postoperative Either: PLACEBO; or DIMENHYDRINATE 1mg/kg i.v. twice; or DROPERIDOL 15 mcg/kg i.v. then PLACEBO; or DIMENHYDRINATE 1mg/kg i.v. AND DROPERIDOL 15 mcg/kg i.v. twice

**Eberhart 1999b** (Continued)

Outcomes	All outcomes Postop 0-24 hours.	
Notes	Unclear if vomiters nauseated or if nauseated vomiters categorized once or twice. Retching was categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Eberhart 1999c**

Methods	N; A; Y; N; N; N	
Participants	120 women; ENT; ASA1,2; 18-69	
Interventions	Intraoperative AND postoperative Either: PLACEBO; or DIMENHYDRINATE 1mg/kg i.v. twice; or METOCLOPRAMIDE 0.3mg/kg i.v. twice; or DIMENHYDRINATE 1mg/kg i.v. AND METOCLOPRAMIDE 0.3mg/kg i.v. twice	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects “not different ”. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Eberhart 1999d**

Methods	N; A; Y; N; Y; Y	
Participants	148 adults; cataracts; ASA1-3; 52-93	
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 12.5mg i.v.; or DROPERIDOL 10 mcg/kg i.v.; or both	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	



**Eberhart 1999d** (Continued)

Notes	Male/female incidences not reported. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Eberhart 1999e**

Methods	N; A; Y; N; N; N	
Participants	160 adults; 102 women; thyroid/lap' chole'; exc' mood-altering drugs, antiemetic, psychiatric disease/cancer, N&V	
Interventions	Induction Either: 5 to 7.5 mg i.v. of DROPERIDOL or MIDAZOLAM	
Outcomes	Vomiting; nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-10; 10-24; 24-48; 0-48 hours.	
Notes	Male/female incidences not reported. Side effects “impaired mood”. Retching categorized as vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Eberhart 2000**

Methods	Y; A; Y; N; Y; Y
Participants	160 men; ENT; ASA1,2; exc' study drug allergy, antiemetic/N&V
Interventions	Induction AND postoperative Either: PLACEBO; or DIMENHYDRINATE 1mg/kg i.v. twice; or METOCLOPRAMIDE 0.3mg/kg i.v. twice; or both twice
Outcomes	All outcomes. Postop 0-6 hours.
Notes	Retching categorized as vomiting.
<i>Risk of bias</i>	

**Eberhart 2000** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Eberhart 2000b**

Methods	N; A; Y; N; Y; Y
Participants	100 adults; oral surgery
Interventions	PREOPERATIVE Either: CLONIDINE 1.5 mcg/kg i.v.; or MIDAZOLAM 0.05mg/kg i.v
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	C - Inadequate

**Eberhart 2001**

Methods	N; A; Y; Y; N; N
Participants	240 adults; ENT; ASA1,2
Interventions	Induction AND postoperative Either: PLACEBO; or DIMENHYDRINATE 1mg/kg i.v. twice.; or DROPERIDOL 15 mcg/kg i.v. twice; or both twice
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects "no difference". Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Eberhart 2003**

Methods	Y; A; Y; Y; N; N	
Participants	184 women; gynaecological; mean 37; ASA1-3; exc' BMI>35, incomprehension, antiemetics	
Interventions	Preoperative AND postoperative twice Either: PLACEBO; or oral GINGER 100 or 200mg thrice	
Outcomes	All outcomes. Postop 0-3; 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**El Shobaki 2003**

Methods	N; B; Y; Y; Y; Y	
Participants	40 adults; 18 women; craniotomy; ASA 2,3; 20-70 (mean 55); exc' ASA>3, antiemetic, study drug allergy, pregnant/breast feeding, psychiatric	
Interventions	Intraoperative Either: PLACEBO; or GRANISETRON 3mg iv	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-30 mins; 0-1; 0-4; 0-8; 0-12; 0-24; 0-48 hours.	
Notes	Male/female incidences not reported. Unclear if vomiters nauseated or if nauseated vomiters categorized once or twice. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Elhakim 1995

Methods	N; B; Y; Y; Y; Y	
Participants	75 adults; 53 women; lap' chole'; exc' reflux	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v. +/- TENOXICAM 20mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching not categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Elhakim 2002

Methods	Y; A; Y; Y; Y; Y	
Participants	180 adults; 129 women; lap' chole'; mean 42; exc' opioid/NSAID	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg iv +/- DEXAMETHASONE (2 or 4 or 8 or 16mg i.v.)	
Outcomes	All outcomes. Postop 0-6; 6-12; 12-24 hours.	
Notes	Outcomes commonest 12-24 hours. Male/female incidences not reported. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Elhakim 2003

Methods	Y; A; Y; Y; N; N	
Participants	120 children; 49 girls; tonsil +/- adenoids; 4-11 (mean 5); exc' antiemetic/steroid/antihis- tamine/psychoactive	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 0.5mg/kg iv (max 8mg iv)	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Elliott 1994

Methods	N; A; Y; N; N; N	
Participants	50 women; laparoscopies; ASA1,2; mean 32; exc' antiemetic, DM, GI disease, fertility	
Interventions	Preoperative Either: PLACEBO; or oral METOCLOPRAMIDE 30mg	
Outcomes	Nausea; vomiting; rescue antiemetic. PACU; discharge-6; 6-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching treated or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ellis 1970

Methods	N; A; Y; Y; Y; Y	
Participants	44 women; gynaecological; 20-57 years; ASA1	

**Ellis 1970** (Continued)

Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 20mg i.v.	
Outcomes	Vomiting. Postop (time unclear).	
Notes	Side effects not recorded. Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ercelen 1996**

Methods	N; B; Y; Y; Y; Y	
Participants	100 children; 48 girls; strabismus; ASA1; mean 7; exc' antiemetic/PONV	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.075mg/kg i.v.; or METOCLOPRAMIDE 0.1mg/kg i.v.; or ONDANSETRON 0.1mg/kg i.v	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects “droperidol sedative”. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Eriksson 1996**

Methods	N; B; Y; N; N; N	
Participants	90 women; laparoscopy; ASA1,2; exc' pregnant, tubal ligations, obese, antiemetic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	

**Eriksson 1996** (Continued)

Outcomes	All outcomes. Postop 0-3; 3-8; 8-24 hours.	
Notes	Rescue antiemetic only 8-24 hours. Nausea and 'nausea or vomiting' commonest 0-3 hours, vomiting 8-24 hours. Side effects not reported. Retching categorized vomiting, unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Eustis 1987**

Methods	N; B; N; N; Y; Y	
Participants	60 children; no sex data; strabismus; >2 (mean 6); ASA1,2; exc' motion sickness, POV	
Interventions	Induction Either: DROPERIDOL 25 or 50 mcg/kg i.v	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Male/female incidences not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fabing 2000**

Methods	Y; B; Y; N; Y; Y	
Participants	60 adults; 32 women; 18-75 (mean 48); craniotomy ; exc' ASA>3, antiemetic, pregnant/ breast feeding, obese, mental retardation, psychiatric	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625mg i.v.; or ONDANSETRON 4mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetics. Postop 0-1; 0-4; 0-8; 0-12; 0-24; 0-48 hours.	

### Fabling 2000 (Continued)

Notes	Male/female incidences not reported. Side effects not recorded. Unclear if vomiters nauseated or categorized once or twice. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fabling 2002

Methods	Y; B; Y; Y; N; N	
Participants	50 adults; 23 women; craniotomy; 18-75 (mean 54); excluded ASA>3, antiemetic, study drug allergy, pregnant/breast feeding, obese, mental retardation, psychiatric	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 0-4; 0-8; 0-12; 0-24; 0-48 hours.	
Notes	Male/female incidences and side effects not reported. Retching categorised as vomiting. Unclear if vomiters nauseated or categorized once of twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fassolt 1977

Methods	N; B; N; N; N; N
Participants	585 adults; general; no exclusion
Interventions	Preoperative Either: NO TREATMENT; or DROPERIDOL 5mg i.m.
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-36 hours.
Notes	Male/female incidences not recorded. Unclear how retching categorized
<i>Risk of bias</i>	



**Fassolt 1977** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fazi 2001**

Methods	Y; B; Y; Y; Y; Y
Participants	134 children; 74 girls; tonsil +/- adenoid; exc' hypertension, CNS disease, obese, malabsorption, study drug allergy
Interventions	Preoperative AND preoperative Either: oral CLONIDINE 4 mcg/kg then PLACEBO; or PLACEBO then oral MIDA-ZOLAM 0.5mg/kg
Outcomes	Vomiting. Postop 0-10; 10-24; 0-24 hours.
Notes	Male/female incidences not recorded. Side effects "clonidine group excited". Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fillinger 2002**

Methods	Y; B; Y; Y; Y; Y
Participants	30 adults; no sex data; cardiac; exc' prior cardiac surgery, bacterial infection, immunodysfunction
Interventions	Preoperative AND postoperative four times Either: PLACEBO; or METHYLPREDNISOLONE 15mg i.v. each time
Outcomes	Nausea or vomiting. Postop 0-24; 24-48; 48-72 hours.
Notes	Male/female incidences not recorded. Nausea or vomiting commonest 24-48 hours. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

**Fillinger 2002** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Flores 1997**

Methods	N; B; N; N; Y; Y
Participants	75 children; 23 girls; day case; ASA1,2; 1-10 (mean 5)
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 150 mcg/kg i.v.; or ONDANSETRON 100 mcg/kg i.v
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fogarty 1993**

Methods	N; B; Y; N; Y; Y
Participants	90 adults; 35 women; orthopaedic; ASA1,2
Interventions	Induction Either: PLACEBO; or intrathecal CLONIDINE 75-100 mcg
Outcomes	Nausea; vomiting. Postop 0-24 hours.
Notes	

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fonseca 2001

Methods	N; A; Y; N; Y; Y	
Participants	40 women; D&C; 16-39; exc' ASA>1, hypertension, DM, asthma	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-3; 3-6; 6-12; 12-24 hours.	
Notes	Nausea and vomiting commonest 0-1 hour. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fortney 1998

Methods	N; B; Y; N; N; N	
Participants	2061 adults; 1817 women; day case; exc' ASA>1, obese, pregnant/breastfeed, drug abuse, antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.625 or 1.25 mg i.v.; or ONDANSETRON 4mg i.v	
Outcomes	Nausea; nausea or vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Foss 1994**

Methods	N; B; N; N; N; N	
Participants	180 adults; ASA 1,2; post hoc exclusion participants (56/180)	
Interventions	Postoperative on analgesic request Either: PLACEBO; or METHYLNALTREXONE 0.01 or 0.1 or 0.3mg/kg i.v	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Foster 1996**

Methods	N; B; Y; N; N; N	
Participants	120 women; gynaecological; exc' intubation, psychosis/psychotropic drug	
Interventions	Induction Either: NO TREATMENT; or DROPERIDOL 0.5 or 1mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fournier 2002**

Methods	Y; A; Y; Y; Y; Y	
Participants	45 adults; 21 women; orthopaedic; ASA2-4; >70 (mean 78); exc' psychiatric, study drug allergy, COPD, bleeding disorder	

**Fournier 2002** (Continued)

Interventions	Postoperative if pain score >3/10 Either: PLACEBO; or intrathecal CLONIDINE 30 mcg; or EPINEPHRINE 200 mcg	
Outcomes	Rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fozard 1977**

Methods	N; B; Y; Y; Y; Y	
Participants	87 children; 2-9; ENT, orthopaedic/general; <29kg	
Interventions	Preoperative Either: oral DROPERIDOL 0.4mg/kg; or DROPERIDOL 0.2mg/kg AND DIAZEPAM 0.1mg/kg	
Outcomes	Vomiting. Postop time unclear.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Frank 2000**

Methods	N; B; Y; N; Y; Y	
Participants	30 adults; 16 women; mean 31; ASA1,2; maxillofacial	
Interventions	Preoperative Either: oral CLONIDINE 5 mcg/kg; or MIDAZOLAM 100 mcg/kg	

**Frank 2000** (Continued)

Outcomes	Nausea or vomiting. Postop 0-2 hours.	
Notes	Male/female incidences not reported.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Freedman 1995**

Methods	Y; B; Y; N; Y; Y	
Participants	40 adults; 20 women; orthopaedic; ASA1,2; exc' CNS/GI disease, anxiety, chronic pain, opioid abuse, study drug allergy	
Interventions	Postoperative Either: PLACEBO; or PCA DROPERIDOL 0.0625 mcg/hr	
Outcomes	Vomiting Postop 0-12; 12-24; 24-36; 36-48; 48-60; 0-60 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Friesen 1992**

Methods	N; A; Y; Y; Y; Y	
Participants	100 children; 34 girls; >2 (mean 4); various surgeries; exc' ENT	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 50mcg/kg	
Outcomes	Nausea or vomiting. Postop 0-4 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	

**Friesen 1992** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1994**

Methods	N; B; Y; Y; Y; Y
Participants	60 women; gynaecological; ASA1,2; 28-67 (46); exc' cardiac/lung/renal/liver/CNS disease, antiemetic
Interventions	Postoperative Either: PLACEBO; or GRANISETRON 3mg i.v.; or METOCLOPRAMIDE 10mg i.v
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-24 hours.
Notes	Nausea and 'nausea or vomiting' commonest 3-24 hours, vomiting 0-3 hours. No side effects. Unclear how retching categorized or if vomiters nauseated

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1994b**

Methods	N; B; Y; Y; Y; Y
Participants	100 women; gynaecological; ASA1,2; 25-65 (mean 45); exc' cardiac/lung/renal/liver/CNS disease, antiemetic
Interventions	Postoperative Either: PLACEBO; or GRANISETRON 20 or 40 or 60 mcg/kg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	No side effects. Retching categorized as nausea.

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Fujii 1994b** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Fujii 1995**

Methods	N; B; Y; N; Y; Y
Participants	88 women; gynaecological; ASA1,2; 25-68 (mean 43); exc' cardiac/lung/renal/liver/CNS disease, antiemetic
Interventions	Postoperative Either: PLACEBO; or DEXAMETHASONE 8mg i.v.; or GRANISETRON 20 mcg/kg i.v.; or both
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Retching categorized as nausea. Unclear if vomiters nauseated/retching or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1995b**

Methods	N; B; Y; N; Y; Y
Participants	100 women; gynaecological; ASA1,2; 23-67 (mean 42); exc' cardiac/renal/lung/liver/CNS disease, antiemetic
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25 or 2.5mg i.v.; or GRANISETRON 40 mcg/kg i.v
Outcomes	Nausea; vomiting. Postop 0-3; 3-24 hours.
Notes	Nausea commonest 3-24 hours, vomiting 0-3 hours. Retching categorized as nausea. Unclear if vomiters nauseated/retching or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Fujii 1995b** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Fujii 1996**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; 25 girls; strabismus/tonsil +/- adenoid; 4-10 (mean 7); ASA1,2; exc' antiemetic, motion sickness	
Interventions	Induction Either: GRANISETRON 40 mcg/kg i.v. +/- DEXAMETHASONE 4mg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear if vomiters retched	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1996b**

Methods	N; B; Y; N; Y; Y	
Participants	50 children; 21 girls; strabismus/tonsil +/- adenoid; ASA1,2; 4-10 (mean 7); exc' antiemetic/ N&V	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear if vomiters retched	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1996c

Methods	N; B; Y; N; Y; Y	
Participants	70 children; 32 girls; strabismus/tonsil +/- adenoid; excluded motion sickness/PONV	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.; or METOCLOPRAMIDE 0.25mg/kg i.v	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24 hours.	
Notes	Rescue antiemetic only 3-24 hours. Vomiting commonest 0-3 hours. Male/female incidences not reported	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1996d

Methods	N; B; Y; N; Y; Y	
Participants	110 women; gynaecological; 21-63 (mean 43); ASA1,2; exc' cardiac/lung/GI/renal/liver/CNS disease, antiemetic, pregnant	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	All outcomes Postop 0-24 hours.	
Notes	Retching categorized as nausea. Unclear if vomiters retched or were nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1996e

Methods	N; B; Y; N; Y; Y	
Participants	80 children; 34 girls; strabismus/tonsil +/- adenoid; ASA1,2; >4 (mean 7); exc' antiemetic/vomiting	
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 40 or 80 mcg/kg i.v.	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997

Methods	Y; B; Y; N; Y; Y	
Participants	270 women; gynaecological; ASA1,2; 23-63 (mean 43); exc' GI disease, motion sickness, PONV, pregnant/menstrual, antiemetic	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 10mg; or each drug with DEXAMETHASONE 8mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear if nauseated retching vomiters categorized once, twice or thrice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997b

Methods	N; B; Y; N; Y; Y	
Participants	80 adults; 53 women; lap' chole'; 25-65, ASA1,2; exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or GRANISETRON 3mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear ifretchers/vomiters nauseated.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997c

Methods	N; B; Y; N; Y; Y	
Participants	120 women; gynaecological; 23-63; ASA1,2; exc' GI disease, pregnant/menstrual antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 10mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997d

Methods	N; B; Y; Y; Y; Y	
Participants	120 women; gynaecological; 21-45 (mean 38); ASA1,2; exc' GI disease, contraceptive, antiemetic	
Interventions	INDUCTION Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear if vomiters nauseated or categorized once or twice.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997e

Methods	N; B; Y; N; Y; Y	
Participants	90 women; gynaecological; 23-63; ASA1,2; exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	All outcomes Postop 0-24 hours.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1997f

Methods	N; B; Y; N; Y; Y	
Participants	120 women; breast; 42-66 (mean 53); exc' GI disease, antiemetic, menstrual/hormone drug	
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 40 or 80 mcg/kg i.v.	

**Fujii 1997f** (Continued)

Outcomes	All outcomes Postop 0-24 hours.	
Notes	Retching categorized as nausea.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1997g**

Methods	N; B; Y; N; Y; Y	
Participants	50 women; breast; 45-68 (mean 55); ASA1,2; exc' GI disease, menstrual, hormone drug, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 2.5mg i.v.	
Outcomes	All outcomes Postop 0-24 hours.	
Notes	Retching categorized as nausea.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1997h**

Methods	N; B; Y; Y; Y; Y	
Participants	60 adults; 43 women; ASA1; ENT; exc' pregnancy/menstrual, GI disease, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	All outcomes Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects.	

**Fujii 1997h** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998**

Methods	Y; A; Y; Y; Y; Y	
Participants	120 adults; 85 women; ASA 1; middle ear; exc' pregnant/menstrual, GI disease, antiemetic	
Interventions	Induction Either: DEXAMETHASONE 8mg i.v.; or GRANISETRON 3mg i.v.; or both	
Outcomes	All outcomes Postop 0-3; 3-24 hours	
Notes	Outcomes commonest 0-3 hours. Male/female incidences not reported	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998b**

Methods	N; A; Y; Y; Y; Y	
Participants	150 women; breast; ASA1,2; exc' GI disease, motion sickness, PONV, pregnant/menstrual, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v. +/- or DEXAMETHASONE 8mg i.v	
Outcomes	All outcomes. Postop 0-3; 3-24 hours	
Notes	Outcomes commonest 0-3 hours.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Fujii 1998b** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Fujii 1998c**

Methods	Y; B; Y; Y; Y; Y
Participants	100 women; gynaecological; ASA1,2; 23-63; exc' GI disease, motion sickness, PONV, pregnant/menstrual, antiemetic
Interventions	Preoperative Either: DOMPERIDONE 20mg oral; or GRANISETRON 2mg
Outcomes	All outcomes. Postop 0-3; 3-24 hours.
Notes	Outcomes commonest 3-24 hours. Unclear if vomiters retched or nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998d**

Methods	Y; B; Y; Y; Y; Y
Participants	80 children; 37 girls; strabismus/tonsil +/- adenoid; ASA1; 4-10 (mean 7); exc' motion sickness, PONV, antiemetic
Interventions	Induction Either: DROPERIDOL mcg/kg i.v.; or GRANISETRON 40 mcg/kg i.v
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not reported. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate



### Fujii 1998e

Methods	N; B; Y; N; Y; Y	
Participants	120 women; lap' chole'; ASA1,2; 25-65 years; exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25 mg/kg i.v.; or GRANISETRON 3mg i.v.; or METOCLOPRAMIDE 10mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1998f

Methods	N; A; Y; Y; Y; Y	
Participants	150 women; 23-65; elective lap' chole'; ASA1; exc' obese, GI disease, pregnant/menstrual, antiemetic	
Interventions	Induction Either: DROPERIDOL 1.25 mg i.v.; or GRANISETRON 3mg i.v.; or both	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1998g

Methods	Y; B; Y; N; Y; Y	
Participants	90 women; gynaecological; ASA1,2; 25-63 (mean 44); exc' GI disease, pregnancy/menstrual, antiemetic	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or GRANISETRON 2.5mg i.v.; or METOCLOPRAMIDE 10mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Categorized by severest (vomiting>retching>nausea). I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1998h

Methods	N; B; Y; N; N; N	
Participants	100 children; 44 girls; extremity surgery; ASA1; 4-10 (mean 7); exc' motion sickness, PONV, antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 50 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 0.25 mg/kg	
Outcomes	Vomiting; rescue antiemetics. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998i**

Methods	N; A; Y; Y; Y; Y	
Participants	120 women; caesarean; ASA1,2; 22-35; exc' motion sickness, PONV, antiemetic, GI disease	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 1.25 mg i.v.; or GRANISETRON 3mg; or METO-CLOPRAMIDE 10mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 0-3 hours.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998j**

Methods	N; B; Y; N; Y; Y	
Participants	120 women; gynaecological; ASA 1,2; menstruating; exc' antiemetic, GI disease	
Interventions	Induction Either: DROPERIDOL 25 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 0.2 mg/kg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998k**

Methods	N; A; Y; Y; Y; Y	
Participants	150 women; ASA1,2; breast; exc' motion sickness, PONV, menstrual, hormone drug, antiemetic	

**Fujii 1998k** (Continued)

Interventions	Induction Either: DROPERIDOL 1.25 mg i.v.; or GRANISETRON 3mg; or both	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-24; 0-24 hours.	
Notes	I combined retching and vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998L**

Methods	Y; A; Y; Y; Y; Y	
Participants	180 women; ASA1,2; middle ear; exc' pregnant, menstrual motion sickness, previous PONV, antiemetic	
Interventions	Induction Either: DROPERIDOL 20 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or METOCLO-PRAMIDE 0.2 mg/kg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours. I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998m**

Methods	Y; B; Y; Y; Y; Y	
Participants	150 women; ASA1,2; gynaecological; 21-63; exc' motion sickness, PONV, GI disease, pregnancy/menstrual, antiemetic	
Interventions	Induction Either: DROPERIDOL 1.25 mg i.v.; or GRANISETRON 2.5 mg; or both	

**Fujii 1998m** (Continued)

Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998n**

Methods	Y; A; Y; Y; Y; Y	
Participants	180 children; 88 girls; tonsil +/- adenoids; 4-10 (mean 7); exc' antiemetic, motion sickness	
Interventions	Induction Either: DROPERIDOL 50 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or both	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998o**

Methods	N; B; Y; Y; Y; Y
Participants	120 women; lap' chole'; ASA1,2; 25-63; exc' GI disease, pregnant/menstrual, antiemetic
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 30 or 40 mcg/kg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	I combined retching and vomiting. Unclear if vomiters retched or nauseated
<i><b>Risk of bias</b></i>	

**Fujii 1998o** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1998q**

Methods	Y; A; Y; Y; Y; Y
Participants	120 women; ASA1,2; gynaecological; exc' GI disease, pregnant/menstrual, antiemetic
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 1 or 2 or 4mg
Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.
Notes	I combined retching and vomiting. Unclear if vomiters retched or nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1998r**

Methods	N; B; Y; Y; Y; Y
Participants	120 women; ENT; ASA1; 25-60 (mean 44) ; exc' GI disease, motion sickness/PONV, pregnancy/menstrual, antiemetic
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 40 or 100 mcg/kg i.v.
Outcomes	All outcomes. Postop 0-3; 3-24 hours.
Notes	Outcomes commonest 0-3 hours. Unclear if all retchers vomited or nauseated. I combined retching and vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1998s

Methods	Y; A; Y; Y; Y; Y	
Participants	160 children; 89 girls; tonsil +/- adenoid; 4-10 (mean 7); ASA 1; exc' motion sickness, antiemetic	
Interventions	Preoperative Either: PLACEBO; or GRANISETRON 20 or 40 or 80 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects “no association”	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1998t

Methods	Y; A; Y; Y; Y; Y	
Participants	100 women; thyroid; ASA 1; exc' motion sickness, PONV, menstrual, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 40 or 100 mcg/kg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Nausea commonest 0-3 hours, vomiting and 'nausea or vomiting' 0-24 hours. I combined retching and vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1998u

Methods	Y; A; Y; Y; Y; Y	
Participants	120 women; breast; 43-64 (mean 53); exc' GI disease, antiemetic, menstrual/hormone drug	

**Fujii 1998u** (Continued)

Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5mg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 0.2 mg/kg	
Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes	Categorized by severest symptom (vomiting>retching>nausea).	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1999**

Methods	Y; A; Y; Y; Y; Y	
Participants	150 children; 55 girls; ASA1; 4-10 (mean 7); general; exc' motion sickness, PONV, antiemetic	
Interventions	INDUCTION Either: DEXAMETHASONE 150 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or both	
Outcomes	Vomiting; rescue antiemetics Postop 0-3; 3-24; 0-24 hours	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1999b**

Methods	Y; B; Y; Y; Y; Y	
Participants	120 women; caesarean; ASA1,2; 24-38 (mean 29); exc' GI disease, motion sickness/PONV, antiemetic	
Interventions	Intraoperative Either: GRANISETRON 3mg i.v. +/- DEXAMETHASONE 8mg	



**Fujii 1999b** (Continued)

Outcomes	All outcomes. Postop 0-24 hours.	
Notes	I combined retching and vomiting. Unclear ifretchers or vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1999c**

Methods	N; B; Y; N; Y; Y	
Participants	120 women; GA; thyroid; ASA 1; excluded PONV/motion sickness, pregnant/menstrual, GI disease, antiemetic	
Interventions	Induction Either: DROPERIDOL 20 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 0.2 mg/kg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1999d**

Methods	Y; A; Y; Y; Y; Y	
Participants	120 children; 63 girls; strabismus; 4-10 (mean 7); ASA1; exc' motion sickness/POV, antiemetic	
Interventions	Induction Either: DROPERIDOL 50 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or both	
Outcomes	Vomiting: rescue antiemetic. Postop 0-3; 3-24 hours.	

**Fujii 1999d** (Continued)

Notes	Vomiting commonest 3-24 hours. Male/female incidences not reported	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1999e**

Methods	Y; A; Y; N; Y; Y	
Participants	150 adults; 108 women; middle ear; ASA1; 20-68 (mean 45); exc' GI disease, motion sickness/PONV, antiemetic	
Interventions	Induction Either: DROPERIDOL 20 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or both	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 0-3 hours. Male/female incidences not reported	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1999f**

Methods	Y; B; Y; Y; Y; Y
Participants	180 women; thyroid; ASA1; 32-58 (mean 46); exc' GI disease, motion sickness, PONV, pregnant/menstrual, antiemetic
Interventions	Induction Either: DROPERIDOL 20 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or both
Outcomes	All outcomes. Postop 0-24 hours.
Notes	I combined retching and vomiting. Unclear ifretchers/vomiters nauseated
<i><b>Risk of bias</b></i>	

**Fujii 1999f** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1999g**

Methods	Y; B; Y; N; Y; Y
Participants	100 children; 55 girls; tonsil +/- adenoid; ASA1; 4-10 (mean 7); exc' POV, antiemetic, motion sickness
Interventions	Preoperative Either: GRANISETRON 40 mcg/kg i.v.; or PERPHENAZINE 70 mcg/kg
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24 hours.
Notes	Vomiting commonest 0-3 hours. Male/female incidences not reported. I combined retching and vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1999h**

Methods	Y; B; Y; Y; Y; Y
Participants	100 adults; 69 women; ASA I; middle ear; exc' previous PONV/motion sickness, pregnant/menstrual, antiemetic
Interventions	Induction Either: GRANISETRON 3mg; or RAMOSETRON 0.3mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24; 24-48 hours.
Notes	Outcomes commonest 24-48 hours. Male/female incidences not reported

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 1999i

Methods	Y; A; Y; Y; Y; Y	
Participants	80 women: lap' chole'; ASA1,2; 25-65 (mean 46); exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Intraoperative end Either: GRANISETRON 3mg i.v.; or RAMOSETRON 0.3mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24; 24-48 hours.	
Notes	Outcomes commonest 24-48 hours. Side effects “no differences”. Unclear ifretchers vomited or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1999j

Methods	Y; A; Y; Y; Y; Y	
Participants	120 women; gynaecological; ASA1,2; 23-65 (mean 44); exc' GI disease, motion sickness, pregnant/menstrual, antiemetic, PONV	
Interventions	Intraoperative end Either: GRANISETRON 2.5mg i.v.; or RAMOSETRON 0.3mg	
Outcomes	All outcomes. Postop 0-3; 3-24; 24-48 hours.	
Notes	Nausea and nausea or vomiting commonest 24-48 hours, vomiting 3-24. I combined retching and vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1999k

Methods	Y; B; Y; Y; Y; Y	
Participants	90 children; 47 girls; tonsil +/- adenoid; ASA 1; 4-10 (mean 7); exc' motion sickness, PONV, antiemetic	
Interventions	Induction Either: GRANISETRON 40 mcg/kg i.v.; or PERPHENAZINE 70 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours. Male/female incidences not reported. Granisetron and perphenazine dose units incorrect	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 1999L

Methods	Y; A; Y; N; Y; Y	
Participants	120 children; 54 girls; 4-10 (mean 6); general; exc' motion sickness/PONV, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 or 40 or 100 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 1999m**

Methods	Y; B; Y; Y; Y; Y	
Participants	120 children; 57 girls; 6 (4-10) years; ASA1,2; tonsil +/- adenoids; exc' POV, GI disease, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 40 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. I combined retching and vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 1999n**

Methods	Y; B; Y; Y; Y; Y	
Participants	120 children; 62 girls; 6-10 (mean 7); ASA1; strabismus; exc' motion sickness, PONV, antiemetic	
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 20 or 40 or 80 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 2000

Methods	Y; B; Y; Y; Y; Y	
Participants	120 adults; 83 women; lap' chole'; ASA1; 25-65 (47 mean); exc' GI disease, pregnant/ menstrual, antiemetic	
Interventions	Induction Either: GRANISETRON 40 mcg/kg i.v. +/- DEXAMETHASONE 8mg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Nausea commonest 0-3 hours, vomiting 3-24 hours. Male/female incidences not reported	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 2000b

Methods	Y; A; Y; Y; Y; Y	
Participants	130 women; thyroid; ASA1; 33-58 (mean 47); exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Induction Either: GRANISETRON 40 mcg/kg i.v. +/- DEXAMETHASONE 8mg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours	
Notes	I combined retching and vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 2000c

Methods	Y; A; Y; Y; Y; Y	
Participants	120 women; gynaecological; 21-63; ASA1,2; exc' GI disease, antiemetic, PONV	

**Fujii 2000c** (Continued)

Interventions	Intraoperative end Either: PLACEBO; or RAMOSETRON 0.15 or 0.3 or 0.6mg i.v.	
Outcomes	All outcomes. Postop 0-3; 3-24; 24-48 hours.	
Notes	Outcomes commonest 0-3 hours. Side effects “no difference”. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 2001**

Methods	Y; B; Y; N; Y; Y	
Participants	90 adults; 48 women; middle ear; ASA1; exc' pregnant/menstrual, antiemetic, disease	
Interventions	Intraoperative Either: DROPERIDOL 20mcg/kg i.v.; or METOCLOPRAMIDE 0.2mg/kg; or PROPOFOL 0.5mg/kg	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours. Male/female incidences not reported. Unclear how retching categorized or if nauseated vomiters categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2001b**

Methods	Y; B; Y; Y; Y; Y	
Participants	90 adults; 71 women; thyroid; ASA1; 33-58 (mean 46); exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Intraoperative Either: DROPERIDOL 20mcg/kg i.v.; or METOCLOPRAMIDE 0.2mg/kg; or PROPOFOL 0.5mg/kg	



**Fujii 2001b** (Continued)

Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not reported. Categorized by severest symptom (vomiting>retching>nausea). I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2001c**

Methods	Y; B; Y; Y; Y; Y	
Participants	90 children; 43 girls; tonsil +/- adenoid; ASA1; 4-10 (mean 6); exc' GI disease, POV, antiemetic	
Interventions	Induction Either: DROPERIDOL 50 mcg/kg i.v.; or GRANISETRON 40 mcg/kg; or METOCLOPRAMIDE 0.25 mg/kg	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2001d**

Methods	Y; A; Y; Y; Y; Y	
Participants	90 children; 47 girls; tonsil +/- adenoid; ASA 1; 4-10 (mean 6); exc' motion sickness, PONV, antiemetic	
Interventions	Intraoperative Either: GRANISETRON 40 mcg/kg i.v.; or RAMOSETRON 6 mcg/kg	
Outcomes	Vomiting. Postop 0-24; 24-48 hours.	

**Fujii 2001d** (Continued)

Notes	Vomiting commonest 24-48 hours. Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 2001e**

Methods	Y; A; Y; Y; Y; Y	
Participants	80 children; 42 girls; 4-10 (mean 7); strabismus; ASA1; exc' motion sickness, PONV, antiemetic	
Interventions	Intraoperative Either: GRANISETRON 40 mcg/kg i.v.; or RAMOSETRON 6 mcg/kg	
Outcomes	Vomiting. Postop 0-24; 24-48 hours.	
Notes	Vomiting commonest 24-48 hours. Male/female incidences not reported. No side effects. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Fujii 2001f**

Methods	Y; A; Y; Y; Y; Y	
Participants	100 women; mastectomy; ASA1; 29-66; exc' pregnant/menstrual; GI disease, antiemetic	
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 1 or 2 or 4mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects. Categorized by severest symptom (vomiting>retching>nausea). I combined retching and vomiting	

**Fujii 2001f** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2001g**

Methods	Y; A; Y; Y; Y; Y
Participants	130 adults; 98 women; lap' chole'; ASA1; 25-63 (mean 47); exc' antiemetic, steroid, post-hoc conversion
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 1 or 2 or 4mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear if vomiters retched or nauseated

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2002**

Methods	N; A; Y; Y; Y; Y
Participants	120 women; STOP; ASA1; 19-47 (mean 33); exc' antiemetic, GI disease, motion sickness, PONV
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 4 or 8 or 16mg i.v.
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	No side effects. Unclear if vomiters nauseated. I combined retching and vomiting

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Fujii 2002** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Fujii 2002b**

Methods	Y; B; Y; Y; Y; Y
Participants	100 children; 41 girls; general; 4-11 (mean 7); ASA1; exc' POV/motion sickness, antiemetic
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 20 or 40 or 80 mcg/kg
Outcomes	Vomiting. Postop 0-6; 6-24 hours.
Notes	Vomiting commonest 0-6 hours. Male/female incidences not reported. No side effects. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Fujii 2002c**

Methods	Y; B; Y; Y; Y; Y
Participants	80 adults; 65 women; thyroid; ASA1; median 46; exc' antiemetic, GI disease, motion sickness, PONV, pregnant/menstrual
Interventions	Induction Either: GRANISETRON 3mg i.v.; or RAMOSETRON 0.3mg
Outcomes	All outcomes. Postop 0-24; 24-48 hours.
Notes	Nausea, vomiting, 'nausea or vomiting, commonest 24-48 hours. Male/female incidences not reported

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 2002e

Methods	Y; B; Y; Y; Y; Y.	
Participants	110 adults; 71 women; lap' chole'; ASA1; 23-68 (mean 48); exc' antiemetic, cholecystitis, steroid, post-hoc conversion	
Interventions	Intraoperative Either: PLACEBO; or RAMOSETRON 0.15 or 0.3 or 0.6mg iv	
Outcomes	All outcomes. Postop 0-24; 24-48 hours.	
Notes	Nausea commonest 24-48 hours, others 0-24 hours. Side effects "headache 8% to 12%". I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Fujii 2002f

Methods	N; B; Y; N; Y; Y	
Participants	90 women; dental; 15-57 (mean 36); ASA1; exc' GI disease, pregnant/menstrual, antiemetic	
Interventions	Postoperative Either placebo; or PROPOFOL 0.25 or 0.5mg/kg iv.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-24 hours.	
Notes	Nausea and 'nausea or vomiting' commonest 3-24 hours, vomiting 0-3 hours. Unclear if retchers or vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Fujii 2003

Methods	Y; B; Y; Y; Y; Y	
Participants	80 adults; 58 women; orthopaedic; mean 61; exc' GI disease, motion sickness/PONV, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or RAMOSETRON 0.15 or 0.3 or 0.6mg iv	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Categorized by severest symptom (vomiting>retching>nausea). I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Furst 1994

Methods	Y; B; Y; Y; Y; Y	
Participants	256 children; 117 girls; ASA1,2; 2-12 (mean 6); tonsil +/- adenoid	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or METOCLOPRAMIDE 0.5 mg/kg i.v.; or ONDANSETRON 0.15 mg/kg i.v	
Outcomes	Vomiting; rescue antiemetic. Postop 0-7 hours.	
Notes	Vomiting reported at 0-8 hours and 8-24 hours. Male/female incidences not reported. No side effects	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Furst 1996

Methods	Y; A; Y; N; Y; Y	
Participants	67 children; 27 girls; craniotomy; 2-18 (mean 9); exc' antiemetic	
Interventions	Induction AND postoperative Either: PLACEBO; or ONDANSETRON 0.15mg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-8; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Galloon 1977

Methods	N; B; Y; Y; Y; Y	
Participants	84 women; D&C	
Interventions	Preoperative Either: DIAZEPAM 10mg/70kg i.m.; or LORAZEPAM 5mg/70kg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Incidences not reported. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gan 1994

Methods	N; B; Y; Y; Y; Y	
Participants	120 adults; 67 women; orthopaedic; ASA1,2; no exclusion	
Interventions	Postoperative Either: PLACEBO; or DROPERIDOL 1.25 mg i.v.; or ONDANSETRON 4mg	

**Gan 1994** (Continued)

Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Gan 1995**

Methods	N; B; Y; N; N; N	
Participants	82 adults; 40 women; orthopaedic; ASA1,2; exc' phenothiazine, study drug allergy	
Interventions	Postoperative immediate AND PCA Either: PLACEBO/DROPERIDOL 1.25mg i.v. then PLACEBO/DROPERIDOL PCA (0.08mg/ml)	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects "no extrapyramidal reaction". Retching categorized as vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Gan 1997**

Methods	Y; A; Y; Y; Y; Y	
Participants	60 women; hysterectomy; ASA < 4	
Interventions	Postoperative Either: PLACEBO; or NALOXONE 0.25 or 1 mcg/kg/h	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	



**Gan 1997** (Continued)

Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Gan 2002**

Methods	Y; B; Y; N; Y; Y	
Participants	60 women; gynaecological; ASA1,2	
Interventions	Postoperative Either: PLACEBO; or oral ONDANSETRON 8mg	
Outcomes	Nausea; vomiting. Postop 0-22 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice. Unclear if drug treatment not prophylaxis	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ganem 2001**

Methods	N; B; N; N; Y; Y
Participants	52 women; laparoscopies; ASA1,2; 21-50 (mean 34); exc' BMI>29, PONV, motion sickness, psychiatric, menstrual, drug abuse
Interventions	Induction Either: ALIZAPRIDE 50mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-12 hours.
Notes	Side effects not recorded. Unclear how retching categorized.
<i>Risk of bias</i>	

**Ganem 2001** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ganem 2002**

Methods	N; B; N; N; Y; Y
Participants	45 women; laparoscopies; ASA1,2; 18-46 (mean 31); exc' GI/psychiatric disease, PONV motion sickness, menstrual, drug abuse
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg iv
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-12 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Geens 1974**

Methods	N; A; Y; N; Y; Y
Participants	232 adults; no sex data; various surgeries; exc' <15 years
Interventions	Preoperative Either: DIAZEPAM 2mg/10kg i.v.; or FLUNITRAZEPAM; or METHOHEXITONE 10mg/10kg
Outcomes	Nausea or vomiting. Postop time unclear.
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Geiger 1993

Methods	N; B; Y; N; Y; Y	
Participants	60 women; gynaecological; ASA1	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg; or ON-DANSETRON 8mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	No side effect. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gentili 2001

Methods	Y; B; Y; Y; N; N	
Participants	88 adults; 38 women; arthroscopy; ASA1,2; mean 42; exc' analgesics, alpha 2 blockers	
Interventions	Intraoperative Either: PLACEBO; or articular CLONIDINE 150 mcg or NEOSTIGMINE 500 mcg or both and PLACEBO s/c; or articular CLONIDINE 150 mcg and NEOSTIGMINE 500 mcg s/c; or articular NEOSTIGMINE 500 mcg and CLONIDINE 150 mcg s/c	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not given. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gesztesi 2000

Methods	Y; B; Y; Y; N; N
Participants	157 women; hysterectomy; ASA1,2; exc' antiemetic, N&V, obese
Interventions	Preoperative AND intraoperative Either: oral CP-122,721 200mg then PLACEBO / ONDANSETRON 4mg i.v.; or oral PLACEBO then ONDANSETRON 4mg i.v
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-8; 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Giannoni 2002

Methods	N; A; Y; N; N; N
Participants	50 children; 25 girls; tonsil +/- adenoids; 3-15
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 1mg/kg (max 16mg) i.v.
Outcomes	Nausea or vomiting; rescue antiemetic Postop 0-4 hours; 0-5 days.
Notes	Nausea or vomiting 0-5 days, rescue antiemetic 0-4 hours. Male/female incidences not reported. Unclear how retching categorized

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gilliland 1996

Methods	N; A; N; N; N; N	
Participants	50 women; hysterectomy; ASA1,2; exc' >75years, >90kg	
Interventions	Intraoperative AND postoperative Either: PLACEBO twice; or MIDAZOLAM 0.07mg/kg i.v. then 0.014mg/kg/hr	
Outcomes	Nausea; rescue antiemetic. Postop 0-48 hours.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Godsiff 1995

Methods	N; B; Y; N; Y; Y	
Participants	40 adults; 17 women; various surgeries; ASA1 -4; exc' antiepileptic drug, obese, renal/liver disease	
Interventions	Induction Either: Propofol +/- Midazolam 2.5 to 5 mg	
Outcomes	All outcomes. Postop in PACU; at 24 hours	
Notes	Nausea or vomiting commonest 24 hours, others PACU. Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Goksu 2002

Methods	N; B; Y; N; Y; Y	
Participants	60 adults; 27 women; middle ear; ASA1,2; 20-60 (mean 37); exc' motion sickness, antiemetic, GI disease, menstrual	

**Goksu 2002** (Continued)

Interventions	Induction Either: DROPERIDOL 1.25mg iv; or GRANISETRON 3mg +/- DEXAMETHASONE 8mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 0-3 hours. Male/female incidences not reported. Inconsistent results. Unclear if vomiters nauseated or ifretchers/vomiters categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Goll 2001**

Methods	Y; A; Y; N; Y; Y	
Participants	240 women; laparoscopy; ASA1,2; 19-70 (mean 37); exc' pregnant/breastfeeding, post-menopausal, obese, renal/liver disease, CNS injury, cytostatic therapy, antiemetic	
Interventions	Induction Either: OXYGEN 30% or 80%; or ONDANSETRON 8 mg i.v.	
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Goodarzi 1998**

Methods	N; B; Y; Y; Y; Y	
Participants	80 children; 35 girls; ASA1,2; 2-14 (mean 10); orthopaedic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 60 mcg/kg i.v.; or ONDANSETRON 50 or 100 mcg/kg	

**Goodarzi 1998** (Continued)

Outcomes	Nausea or vomiting; rescue antiemetics. Postop 0-3; 3-48 hours.	
Notes	Outcomes commonest 3-48 hours. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Goode 1997**

Methods	Y; B; N; N; Y; Y	
Participants	70 children; no sex data; 2-10 years; tonsil +/- adenoids; ASA1,2; exc' ASA>2, obese, PONV, study drug allergy	
Interventions	Induction Either: PLACEBO; or GRANISETRON 1 or 10 or 100 mcg/kg i.v.	
Outcomes	Vomiting. Postop PACU; 0-hospital discharge; 0-24 hours.	
Notes	Unclear which groups had which drugs. Unclear how retching categorized. Male/female incidences not recorded. Side effects not recorded	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Gordon 1969**

Methods	N; B; Y; Y; Y; N	
Participants	161 children; 83 girls; adenotonsillectomy; 3-12	
Interventions	Preoperative Either: oral DIAZEPAM 0.22mg/kg; or PHENOBARBITONE 4.4mg/kg; or TRIMEPAZINE 3.3mg/kg	
Outcomes	Vomiting. Postop 0-18 hours.	

**Gordon 1969** (Continued)

Notes	Male/female incidences not reported. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Gougeon 1988**

Methods	N; B; N; N; Y; Y	
Participants	200 women; caesarean; mean 27	
Interventions	Postoperative Either: PLACEBO; or BROMOPRIDE 10mg i.m.	
Outcomes	Nausea; vomiting. Postop 2-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Goyagi 1996**

Methods	N; B; Y; N; Y; Y	
Participants	26 women; ASA1,2; hysterectomy; 37-60; exc' drug abuse	
Interventions	Preoperative Either: NO TREATMENT; or oral CLONIDINE 5 mcg/kg	
Outcomes	Nausea; rescue antiemetic. Postop 0-48 hours.	
Notes	Incidences not reported. No side effects.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement



**Goyagi 1996** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Goyagi 1999**

Methods	Y; B; Y; Y; N, N.
Participants	60 women; hysterectomy; ASA1,2; 17-56 (mean 44); exc' drug abuse
Interventions	Preoperative Either: PLACEBO; or oral CLONIDINE 5 mcg/kg
Outcomes	Nausea. 0-48 hours.
Notes	Incidence not reported.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Grace 1995**

Methods	N; B; N; N; Y; Y
Participants	90 adults; 48 women; orthopaedic; ASA1,2; 18-80 (mean 67); exc' obese, adrenergic/psychotropic/analgesic drugs, fertile
Interventions	Induction Either: PLACEBO; or intrathecal CLONIDINE 75 mcg
Outcomes	Vomiting; rescue antiemetics. Postop 0-6 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how 'emesis', retching or vomiting defined

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Grebenik 1996

Methods	N; B; Y; N; N; Y	
Participants	442 adults; 98 women; cardiac; mean age 62	
Interventions	Postoperative Either: PLACEBO; or DROPERIDOL 0.3 mg/hr	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Greif 1999

Methods	N; B; Y; N; Y; Y	
Participants	231 adults; 98 women; general; 18-80; exc' obese, antiemetic, N&V, fever/infection	
Interventions	Intraoperative AND postoperative Either: OXYGEN 30% or 80%	
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Grimsehl 2002

Methods	Y; B; Y; N; N; N	
Participants	74 women; laparoscopies; ASA1,2	
Interventions	Induction Either: CYCLIZINE 50 mg i.v.; or ONDANSETRON 4mg	

**Grimsehl 2002** (Continued)

Outcomes	All outcomes. Postop 0-6; 6-24 hours	
Notes	Outcomes commonest 0-6 hours. Side effects not recorded. Retching categorized as vom- iting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Grond 1995**

Methods	N; B; Y; N; Y; Y	
Participants	80 women; gynaecological; ASA1,2; 18-65 (mean 35); exc' pregnant, drug abuse, psychiatric, study drug allergy, antiemetic	
Interventions	Induction Either: DROPERIDOL 2.5mg i.v.; or ONDANSETRON 8mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Grottke 2003**

Methods	N; B; Y; N; Y; Y	
Participants	45 adults; 23 women; orthopaedic; ASA1-3; 18-78 (mean 52)	
Interventions	Preoperative Either: oral CLONIDINE 2 or 5 mcg/kg; or oral MIDAZOLAM 0.1mg/kg	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	

**Grottke 2003** (Continued)

Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Guard 1996**

Methods	Y; B; Y; Y; N; N	
Participants	60 women; lap' steri'; ASA1,2; 25-44; exc' NSAID intolerance, intubation	
Interventions	Induction Either: PLACEBO; or GLYCOPYRROLATE 0.3mg i.v.	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-3 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Guldager 1983**

Methods	N; B; Y; N; Y; Y	
Participants	50 women; STOP; mean 24	
Interventions	Induction Either: DOMPERIDONE 10mg i.v.; or METOCLOPRAMIDE 10mg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-0.5; 0.5; 1-2; 0-2 hours.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Guldager 1983** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Guldogus 1994**

Methods	N; B; Y; N; Y; Y
Participants	58 adults; 32-65 (mean 43); ASA1,2
Interventions	Induction Either: PLACEBO; or DROPERIDOL 5mg i.v.; or ONDANSETRON 8mg; or DROPERIDOL 5mg AND ONDANSETRON 4mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-6; 6-24; 0-24 hours.
Notes	Incidences not reported. Unclear how retching categorized or if nauseated vomiters categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Gulec 1998**

Methods	N; B; N; N; Y; Y
Participants	60 children; 32 girls; inguinal/urogenital; ASA1,2; 1-12 (mean 5)
Interventions	Postoperative Either: PLACEBO; or intrathecal MIDAZOLAM 50 mcg/kg
Outcomes	Vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gulhas 2003

Methods	Y; B; Y; Y; Y; Y	
Participants	80 children; 24 girls; strabismus; ASA1; 3-12 (mean 7); exc' obese, GI disease	
Interventions	Preoperative Either: PLACEBO; or oral CLONIDINE 4 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 6-24; 24-48; 0-48 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Gurler 1999

Methods	N; B; Y; N; Y; Y	
Participants	40 children; no sex data; craniofacial; mean 1	
Interventions	Induction AND postoperative Either: PLACEBO twice; or ONDANSETRON 0.15mg/kg i.v. twice	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Gurses 2003

Methods	Y; A; Y; Y; Y; Y	
Participants	90 women; hysterectomy; 20-68 (mean 52); ASA 1,2; exc' heart/lung/CNS disease, bleeding disorder, pregnancy	

**Gurses 2003** (Continued)

Interventions	Postoperative immediate Either: PLACEBO; or epidural DROPERIDOL 2.5mg or CLONIDINE 150 mcg	
Outcomes	Nausea; rescue antiemetics. Postop 10 minutes; 0-24 hours.	
Notes	Unclear how retching categorized. Side effects “clonidine sedative”	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Günes 2003**

Methods	N; B; Y; N; Y; Y	
Participants	60 participants; 38 women; laminectomy; ASA1,2	
Interventions	Intraoperative AND postoperative Either: DEXAMETHASONE 4mg iv then 0.005mg/kg/hour; or ONDANSETRON 4mg then 0.005mg/kg/hr	
Outcomes	Nausea; vomiting. Postop 0-18 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Hagemann 2000**

Methods	Y; A; Y; Y; N; N	
Participants	109 women; hysterectomy; ASA1,2; exc' heart disease, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or EPHEDRINE 0.5 mg/kg i.m.	

### Hagemann 2000 (Continued)

Outcomes	Vomiting; nausea or vomiting; rescue antiemetics. Postop 0-1; 1-2; 2-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Halvorsen 2003

Methods	Y; A; Y; Y; N; N	
Participants	300 adults; 60 women; CABG; mean 64; exc' steroid, arrhythmia	
Interventions	Induction AND postoperative Either: PLACEBO twice; or DEXAMETHASONE 4mg iv twice	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24; 24-48 hours.	
Notes	Rescue antiemetic only 0-24 hours. Nausea and vomiting commonest 0-24 hours. Male/ female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Hamid 1998

Methods	Y; A; Y; Y; N; N	
Participants	74 children; 39 girls; tonsil + adenoids; ASA1,2; 2-10 (mean 6); exc' sleep apnoea, PONV, obese, antiemetic, study drug allergy	
Interventions	Induction Either: PLACEBO; or DIMENHYDRINATE 0.5mg/kg i.v.; or ONDANSETRON 0.1 mg/kg	



**Hamid 1998** (Continued)

Outcomes	Vomiting. Postop 0-10; 10-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Hammas 2002**

Methods	N; A; N; N; N; N	
Participants	180 adults; 106 women; breast or abdominal	
Interventions	Induction or continuous AND postoperative Either: NO TREATMENT twice; or DEXAMETHASONE 4mg i.v.+ DROPERIDOL 1.25mg + METOCLOPRAMIDE 10mg + ONDANSETRON 4mg then NO TREATMENT; or PROPOFOL 1mg/kg/hr	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-4; 5-8; 0-24 hours.	
Notes	Side effects not recorded. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Hammond 1985**

Methods	N; B; N; N; Y; Y	
Participants	100 adults; no sex data; corneal graft	
Interventions	Induction Either: DOMPERIDONE 10mg i.v.; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	All outcomes. Postop 0-1; 1-6; 6-15; 0-15 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded	

**Hammond 1985** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Handa 2001**

Methods	Y; A; Y; Y; Y; Y	
Participants	60 children; 29 girls; 2-12 (mean 8); ASA1; strabismus; exc' motion sickness, POV, antiemetic	
Interventions	Preoperative Either: oral CLONIDINE 4 mcg/kg; or oral DIAZEPAM 0.4 mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not given. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Handley 1967**

Methods	N; B; Y; N; Y; Y	
Participants	65 women; gynaecological; <60 years	
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 10mg i.m.; or PERPHENAZINE 5mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-4 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Hardy 1986

Methods	N; B; Y; N; N; N
Participants	80 children; 28 girls; strabismus; ASA1,2; 1-6 (mean 3)
Interventions	Induction Either: PLACEBO; or DROPERIDOL 50 mcg/kg i.v.
Outcomes	Nausea or vomiting; rescue antiemetic. 0-PACU discharge; 0-5; 5-24; 24-48; 5-48 hours.
Notes	Rescue antiemetic only 0-5 hours. Nausea or vomiting commonest 5-48 hours

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Harris 1991

Methods	N; B; N; N; N; N
Participants	40 women; gynaecological; ASA1,2; exc' study drug allergy, glaucoma, bladder atony, H2 antagonist, antiemetic, NG
Interventions	Postoperative Either: NO TREATMENT; or SCOPOLAMINE patch
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-4; 4-6; 6-24 hours.
Notes	Outcomes commonest 0-2 hours. Unclear how retching categorized. Unclear if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Harti 1994

Methods	N; B; N; N; Y; Y
Participants	36 men; colorectal; mean 51

**Harti 1994** (Continued)

Interventions	Induction Either: NO TREATMENT; or DROPERIDOL 0.5mg/kg i.v.; or METOCLOPRAMIDE 0.5mg/kg	
Outcomes	Nausea; vomiting. Postop 0-2; 2-12; 12-24 hours.	
Notes	Outcomes commonest 0-2 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Hechler 2001**

Methods	Y; A; N; N; N; N	
Participants	1334 adults; 992 women; various surgeries; exc' <18 >75	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL mcg/kg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Helmerts 1993**

Methods	Y; B; Y; N; N; N	
Participants	923 women; gynaecological; ASA1-3; 18-65 (mean 43); exc' CNS, renal, liver, heart, metabolic/endocrine disease, N&V/antiemetic, NG, pregnant/breastfeeding	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 1 or 8 or 16mg i.v.	

### Helmers 1993 (Continued)

Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Helmy 1999

Methods	N; B; Y; Y; Y; Y	
Participants	160 adults; 125 women; ASA1,2; lap' chole'; exc' study drug allergy, N&V/antiemetic, drug abuse, renal/liver/heart/lung/CNS/blood or endocrine disease	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg	
Outcomes	Nausea; vomiting. Postop 0-1; 1-4; 4-24; 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Hildyard 2001

Methods	N; B; N; N; N; N	
Participants	224 women; pregnant; caesarean; ASA1,2; post-hoc exclusion	
Interventions	INTRAOPERATIVE Either: PLACEBO; or CYCLIZINE 50mg i.m.; or PROCHLORPERAZINE 12.5mg	
Outcomes	All outcomes. Postop 0-8; 8-24 hours.	

**Hildyard 2001** (Continued)

Notes	Side effects not recorded. Incidences not reported.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ho 2001**

Methods	Y; B; Y; Y; N; N	
Participants	225 women; hysterectomy; ASA1,2; 35-55 (mean 45); exc' PONV, motion sickness/GI disease, antiemetic	
Interventions	Intraoperative end Either: PLACEBO; or DEXAMETHASONE 2.5 or 5 or 10mg i.v.; or DROPERIDOL 1.25mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects: “restless with droperidol”. Retching categorized as vomiting. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Holt 2000**

Methods	Y; A; Y; N; N; N	
Participants	132 children; 60 girls; tonsil +/- adenoids; ASA1,2; 2-14 (mean 6); exc' previous PONV, GI ulcer/bleeding, HZV, hypertension, study drug allergy	
Interventions	Induction Either: TROPISETRON 0.1mg/kg i.v. (maximum 2mg) +/- DEXAMETHASONE 0.5mg/kg (maximum 8mg)	
Outcomes	All outcomes. Postop 0-1; 0-2; 0-4; 0-8; 0-12 hours.	
Notes	Male/female incidences not reported.	

**Holt 2000** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Honkavaara 1994**

Methods	N; A; Y; Y; Y; Y
Participants	60 adults; 29 women; ASA1,2; 15-60 (mean 41); middle ear, exc' antiemetic
Interventions	Preoperative AND induction Either: PLACEBO then GLYCOPYRROLONIUM 0.2mg i.v.; or HYOSCINE patch then PLACEBO
Outcomes	All outcomes. Postop 0-2; 2-6; 6-12; 12-18; 18-24; 0-24 hours.
Notes	Male/female incidences not reported. Unclear if vomiters nauseated or categorized once or twice. I combined retching and vomiting

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Honkavaara 1995**

Methods	N; B; N; N; Y; Y
Participants	50 adults; 27 women; plastic; exc' antiemetic, pregnancy/breastfeeding, obese
Interventions	Preoperative AND induction Either: PLACEBO then ATROPINE 100 mcg/kg i.v.; or SCOPOLAMINE patch 0.5mg then PLACEBO
Outcomes	All outcomes. Postop 0-2; 2-6; 6-12; 12-18; 18-24; 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear if vomiters retched or if either nauseated or categorized once or twice

<i>Risk of bias</i>		
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### Honkavaara 1995 (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Honkavaara 1996

Methods	N; B; Y; N; Y; Y
Participants	56 adults; 33 women; ENT; ASA1,2; 21-55 (mean 40); exc' antiemetic/N&V
Interventions	Preoperative Either: PLACEBO; or HYOSCINE 0.5mg
Outcomes	All outcomes Postop 0-24 hours.
Notes	Male/female incidences not reported. Categorized by severest symptom (vomiting>retching>nausea). Unclear if vomiters retched or if either nauseated

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Honkavaara 1996b

Methods	N; B; Y; N; Y; Y
Participants	75 adults; ASA1,2; 15-62; middle ear; exc' antiemetic or N&V
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4 or 8mg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Honkavaara 1999

Methods	N; B; Y; N; Y; Y	
Participants	50 children; mean 10; ASA1,2; otoplasty; exc' obese, antiemetic	
Interventions	Preoperative AND induction Either: SCOPOLAMINE patch (0.25 or 0.5mg) then placebo; or PLACEBO then AT-ROPINE 10mcg/kg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Horimoto1991

Methods	N; B; N; N; N; N	
Participants	54 children; 25 girls; ASA1,2; strabismus; 1-11 (mean 6)	
Interventions	Preoperative Either: NO TREATMENT; or SCOPOLAMINE 0.38 mg patch	
Outcomes	Vomiting. Postop 0-48 hours.	
Notes	Male/female incidences not reported. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Horta 1993

Methods	N; B; N; N; N; N.	
Participants	112 women; caesarean; ASA1,2	
Interventions	Intraoperative Either: NO TREATMENT; or DROPERIDOL 2.5mg i.v.	

**Horta 1993** (Continued)

Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Hovi-Viander 1980**

Methods	N; B; Y; N; Y; Y	
Participants	50 adults; dental ; no sex data	
Interventions	Preoperative Either: oral DIAZEPAM 10mg; or oral PENTOBARBITONE 100mg	
Outcomes	All outcomes. Postop 0-1 hour.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Hovorka 1997**

Methods	Y; B; Y; N; N; N
Participants	162 women; hysterectomy; ASA1,2; 35-65 (mean 49)
Interventions	Intraoperative end Either: PLACEBO; or NEOSTIGMINE 2mg i.v. AND GYLCOPYRROLATE 0.4mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-2; 2-3; 3-9; 9-15; 15-21; 21-27; 0-27 hours.
Notes	Side effects not recorded. Unclear how retching categorized. Unclear if vomiters nauseated
<i><b>Risk of bias</b></i>	

**Hovorka 1997** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Huang 2001**

Methods	Y; A; Y; N; N; N
Participants	120 women; tubal ligation; ASA1,2; mean 34; exc' breast feeding, PONV, motion sickness, antiemetic
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 5mg i.v.; or METOCLOPRAMIDE 10mg
Outcomes	All outcomes. Postop 0-4; 4-24; 0-24 hours.
Notes	No side effects. Retching categorized as vomiting. Unclear if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Hunting 1997**

Methods	N; B; Y; N; Y; Y
Participants	80 women; breast; 27-69 (mean 50); ASA1,2
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Huston 1996

Methods	N; B; Y; N; Y; Y
Participants	60 women; laparoscopies; ASA1,2; 18-60
Interventions	Preoperative AND induction Either: PLACEBO then DROPERIDOL 1.25mg i.v. or GRANISETRON 10 microgram/kg; or oral GRANISETRON 1mg then PLACEBO
Outcomes	See notes.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice. Side effects not recorded

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Hyrkas 1993

Methods	N; B; N; N; Y; Y
Participants	72 adults; 39 women; dental; exc' allergy
Interventions	Preoperative Either: PLACEBO; or METHYLPREDNISOLONE 40mg i.v.
Outcomes	Nausea. Postop 0-8 hours.
Notes	Male/female incidences not reported. No side effects.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Iannuzzi 1994

Methods	N; B; N; N; Y; Y
Participants	30 adults; 20 women; hepato-biliary; ASA1,2; mean 48; exc' liver/renal/cardiac/blood/endocrine disease, antiemetic

**Iannuzzi 1994** (Continued)

Interventions	Preoperative Either: NO TREATMENT; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ilbeigi 1999**

Methods	N; B; Y; N; Y; Y	
Participants	45 women; gynaecological; 18-63 (mean 38)	
Interventions	Induction AND intraoperative Either: NO TREATMENT then METOCLOPRAMIDE 10mg i.v.; or ON-DANSETRON 4mg i.v. then NO TREATMENT; or both	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Imbeloni 1987**

Methods	N; B; N; N; Y; Y	
Participants	40 adults; 13 women; abdominal and leg; ASA1,2; 16-82 (mean 50); exc' cardiac/lung disease	
Interventions	Preoperative Either: oral DIAZEPAM 10mg; or sublingual FLUNITRAZEPAM 2mg	

**Imbeloni 1987** (Continued)

Outcomes	Nausea; vomiting; nausea or vomiting. Postop time unclear.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ismail 2003**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; 32 girls; strabismus; ASA1,2; 3-14 (mean 6); exc' N&V/antiemetic, trial drug, NG	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 0.15mg/kg iv	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Iwamoto 1978**

Methods	N; B; Y; N; Y; Y	
Participants	165 adults; 87 women; eye; 15-87 (mean 60)	
Interventions	Postoperative Either: NO TREATMENT; or DROPERIDOL 5mg i.v.	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded.	

**Iwamoto 1978** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Jakobsson 1999**

Methods	N; B; N; N; Y; Y	
Participants	68 women; laparoscopies; ASA1,2; 18-50 (mean 35)	
Interventions	Preoperative Either: NO TREATMENT; or oral TROPISETRON 5mg	
Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear if vomiters nauseated. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Janknegt 1999**

Methods	Y; A; Y; N; Y; N	
Participants	397 adults; 339 women; various surgeries; exc' ASA>3, antiemetic, pregnant/breastfeeding, glaucoma, study drug allergy, opiates/cytotoxic	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or GRANISETRON 1mg i.v. +/- DEXAMETHA- SONE 5mg	
Outcomes	All outcomes. Postop 0-24; 72-120 hours.	
Notes	Outcomes commonest 72-120 hours. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Janknegt 1999** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Jeffs 2002**

Methods	Y; B; Y; Y; Y; Y
Participants	60 adults; 50 women; general/gynaecological; ASA1,2; 18-75 (mean 45); exc' hypertension, IHD, depression, alcohol abuse, antidepressant, beta blocker, liver/renal disease
Interventions	Intraoperative AND postoperative PCA. Either: PLACEBO twice; or CLONIDINE 4 mcg/kg i.v. then PCA bolus 20 mcg i.v
Outcomes	Nausea or vomiting. Postop 0-12; 12-24; 24-36 hours.
Notes	Outcomes commonest 0-12 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Jellish 1995**

Methods	N; B; Y; N; Y; Y
Participants	102 adults; 61 women; middle ear; 18-65 (mean 45); exc' gastropathy, obese
Interventions	Induction Either: NO TREATMENT; or DROPERIDOL 25 mcg/kg i.v.
Outcomes	Nausea; vomiting. Postop 0-PACU discharge; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Jellish 1997

Methods	N; A; Y; Y; Y; Y	
Participants	120 adults; 62 women; middle ear; ASA1,2; exc' DM, cholecystitis, neuropathy, NM disorder, pregnant, obese	
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 25 mcg/kg i.v.; or ONDANSETRON 4mg i.v	
Outcomes	All outcomes. Postop 0-2; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Jellish 2003

Methods	Y; A; N; N; N; N	
Participants	120 adults; 36 women; laminectomy; mean 51; ASA1-3; exc' pregnant, heart/liver/renal disease/bleeding abnormality	
Interventions	Induction Either: PLACEBO; or epidural CLONIDINE 150 mcg	
Outcomes	Nausea; vomiting. Postop 0-1; 1-25 hours.	
Notes	Outcomes commonest 1-25 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Jensen 2000

Methods	Y; A; Y; N; N; N
Participants	76 children; 29 female; tonsil +/- adenoids; ASA1,2; 2-14 (mean 6)
Interventions	Induction Either: PLACEBO; or TROPISETRON 0.2mg/kg (maximum 5mg)
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-4; 4-8; 8-12; 12-24; 0-24 hours.
Notes	Retching categorized as vomiting.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Jokela 1999

Methods	Y; B; Y; Y; N; Y
Participants	120 women; lap' chole'; ASA1-3; exc' pregnant/breastfeeding; Parkinson's, metabolic disease, antiemetic
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or TROPISETRON 5mg i.v.
Outcomes	All outcomes. Postop 0-2; 2-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Jokela 2000

Methods	Y; B; Y; N; Y; Y
Participants	180 women; breast; ASA1-3
Interventions	Intraoperative Either: NO TREATMENT; or ONDANSETRON 8mg i.v.

**Jokela 2000** (Continued)

Outcomes	All outcomes. Postop 0-2; 2-24; 0-24 hours.	
Notes	Side effects “did not differ”. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Jokela 2002**

Methods	Y; B; Y; Y; N; N	
Participants	200 women; thyroid/parathyroid; ASA1-3; mean 50	
Interventions	Preoperative Either: oral METOCLOPRAMIDE 10mg; or ONDANSETRON 16mg; or TROPISETRON 5mg	
Outcomes	All outcomes. Postop 0-2; 2-24; 0-24 hours.	
Notes	Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Jorgensen 1990**

Methods	N; B; Y; Y; Y; Y	
Participants	60 adults; 44 female; various surgeries; ASA1,2	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 10 or 20 mcg/kg i.v.	
Outcomes	Nausea or vomiting. Postop 0-2 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	

**Jorgensen 1990** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Joris 2003**

Methods	Y; B; Y; Y; Y; Y
Participants	150 adults; 126 women; thyroid; 19-70 (mean 50); ASA1-3; exc' obese, reflux, PONV/ motion sickness, antiemetic, lung disease
Interventions	Induction AND intraoperative AND postoperative Either: No treatment then 30% O2; or Droperidol 0.625mg iv then O2 30%; or air then 80% O2
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-24; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Joshi 1993**

Methods	N; B; Y; N; Y; Y
Participants	75 women; ERPC; ASA1; 17-40 (mean 29); exc' hyperemesis, antiemetic, sedative/analgesic
Interventions	INDUCTION Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or TIAPRIDE 100mg
Outcomes	All outcomes. Postop 0-1; 1-6; 0-6 hours.
Notes	Nausea and vomiting commonest 0-1 hour, rescue antiemetic 1-6 hours. Unclear how retching treated or if vomiters nauseated or categorized once or twice

*Risk of bias*

**Joshi 1993** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kafali 1994**

Methods	N; B; Y; N; Y; Y
Participants	40 women; gynaecological; ASA1,2; 40-65 years
Interventions	Induction AND postoperative Either: METOCLOPRAMIDE 10mg i.v. thrice; ONDANSETRON 8mg thrice
Outcomes	Nausea or vomiting. Postop 0-24 hours.
Notes	No side effects. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kandler 1993**

Methods	N; B; Y; N; N; N
Participants	47 adults; 21 female; 55-72 (mean 60); exc' heart/liver/GI/renal disease
Interventions	Induction AND postoperative Either: PLACEBO twice; or METOCLOPRAMIDE 1mg/kg i.v. then 1.5mg/kg
Outcomes	Nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Karabayirh 2003

Methods	N; B; N; N; Y; Y
Participants	62 adults; 36 female; middle ear; ASA1,2; 18-60 (mean 34); exc' CNS/ear disease, motion sickness/PONV
Interventions	Induction AND postoperative Either: NO TREATMENT or DEXAMETHASONE 5mg i.v. or ONDANSETRON 8mg then 50% O2 + 50% N2O; or NO TREATMENT then 75% O2 + 25% N2O
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-6; 6-24 hours.
Notes	Rescue antiemetic only 6-24 hours. Nausea commonest 6-24 hours. Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Karamanlioglu 2003

Methods	Y; A; Y; Y; Y; Y
Participants	150 children; 74 female; various surgery; exc' antiemetics, DM, reflux
Interventions	Preoperative Either: PLACEBO; or oral DOLASETRON 1.8mg/kg; or ONDANSETRON 0.15mg/kg iv
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-2; 0-24 hours.
Notes	Male/female incidences not reported. No side effects. I combined retching and vomiting. Unclear ifretchers or vomiters nauseated

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Karhunen 1981**

Methods	N; B; N; N; Y; Y	
Participants	100 women; cataract; mean 72	
Interventions	Preoperative Either: NO TREATMENT; or DROPERIDOL 0.04 mg/kg	
Outcomes	Nausea; vomiting. Postop 0-8; 8-14; 14-20; 20-26 hours.	
Notes	Nausea commonest 8-14 hours, vomiting 0-8 hours. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Karlsson 1993**

Methods	N; B; N; N; Y; Y	
Participants	116 children; no sex data; strabismus; 2-16 (mean 5)	
Interventions	Intraoperative Either: NO TREATMENT; or DIXYRAZINE 0.25mg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Katayama 1995**

Methods	N; B; N; N; Y; Y	
Participants	84 adults; 37 female; ENT; exc' ASA>1	

### Katayama 1995 (Continued)

Interventions	Induction AND intraoperative Either NO TREATMENT twice; or DROPERIDOL 0.15mg/kg i.v. then METOPROLOL 0.1mg/kg	
Outcomes	Nausea or vomiting. Postop 0-3 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kathirvel 1998

Methods	N; B; Y; N; Y; Y.	
Participants	90 adults; no sex data; ASA1,2; craniotomy; 18-72; exc' PONV/motion sickness	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kathirvel 1999

Methods	N; B; Y; Y; Y; Y	
Participants	100 children; 49 female; strabismus; ASA1,2; 1-15 (mean 7); exc' motion sickness/PONV	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 250 mcg/kg i.v.; or ONDANSETRON 150 mcg/kg; or METOCLOPRAMIDE 150 mcg/kg AND ONDANSETRON 100 mcg/	



### Kathirvel 1999 (Continued)

	kg
Outcomes	Nausea or vomiting. Postop 0-2; 2-6; 6-24; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized
<b><i>Risk of bias</i></b>	
<b>Bias</b>	<b>Authors' judgement</b> <b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk B - Unclear

### Kathirvel 2001

Methods	Y; A; Y; N; N; N
Participants	170 adults; 58 female; craniotomy; ASA1,2; exc' motion sickness/PONV, VP shunt, antiemetic/N&V
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated.
<b><i>Risk of bias</i></b>	
<b>Bias</b>	<b>Authors' judgement</b> <b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk B - Unclear

### Kaufman 1996

Methods	N; B; Y; Y; Y; Y
Participants	49 children; no sex data; ASA1-3; 1-17; ophthalmic
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or ONDANSETRON 0.15mg/kg
Outcomes	Postop before discharge.

### Kaufman 1996 (Continued)

Notes	Incidences not reported. Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kaufmann 1994

Methods	N; A; Y; Y; Y; Y	
Participants	286 adults; 156 female; orthopaedic; ASA1,2; exc' PONV, ASA>2, N&V	
Interventions	Postoperative AND PCA Either: PLACEBO twice; or DROPERIDOL 2.5mg i.v. then 0.125mg bolus; or METO-CLOPRAMIDE 20mg, 1mg bolus; or TROPISETRON 5mg then PLACEBO	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-10; 10-18; 0-18; 18-36; 0-36 hours.	
Notes	Male/female incidences not reported.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Kaul 1996

Methods	N; B; Y; N; Y; Y
Participants	241 adults; 133 female; elective surgery; ASA1,2; <65 years; mean 39; exc' liver/renal/CNS/endocrine disease, pregnant/lactating, study drug allergy, emesis, NG
Interventions	Preoperative Either: PLACEBO; or oral METOCLOPRAMIDE 10mg; or ONDANSETRON 8mg
Outcomes	Nausea; vomitiing; nausea or vomiting. Postop 0-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated.
<i><b>Risk of bias</b></i>	

**Kaul 1996** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kauste 1986**

Methods	N, B, Y, N, Y, Y
Participants	182 women; orthopaedic; ASA1,2; 16-60 (mean 36); exc' antiemetic, alcoholism, GI disease, DM
Interventions	Intraoperative Either: PLACEBO; or ALIZAPRIDE 100 or 200 mg i.v.; or DROPERIDOL 1.25mg; or METOCLOPRAMIDE 20 mg
Outcomes	All outcomes. Postop 0-24 hours
Notes	I combined retching and vomiting.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kaya 2002**

Methods	Y; B; Y; N; Y; Y
Participants	90 adults; no sex data; inguinal/anal; ASA1,2; 18-74 (mean 34)
Interventions	Induction Either: PLACEBO; or intrathecal MORPHINE 100 or 200 mcg; or NEOSTIGMINE 100 or 200 mcg; or MORPHINE 50 mcg AND NEOSTIGMINE 50 mcg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Khalil 1992

Methods	N; B; Y; N; N; N	
Participants	129 children; strabismus; 63 female; 1-13 (mean 6)	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or LORAZEPAM 10 mcg/kg	
Outcomes	Vomiting. Postop 0-6; 6-24 hours.	
Notes	Vomiting commonest 6-24 hours. Male/female incidences not reported	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Khalil 1996

Methods	N; B; Y; N; Y; Y	
Participants	41 children; no sex data; middle ear	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 0.15mg/kg (maximum 4mg) i.v.; or PROMET- HAZINE 0.25mg/kg	
Outcomes	Vomiting. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. I combined retching and vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Khalil 1997

Methods	N; B; Y; N; Y; Y	
Participants	45 adults; no sex data; middle ear	

**Khalil 1997** (Continued)

Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.; or PROMETHAZINE 25mg; or ONDANSETRON 2mg AND PROMETHAZINE 12.5mg	
Outcomes	See notes.	
Notes	Side effects not recorded. Unclear how retching categorized. Percentages of an unknown number	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Khalil 1999**

Methods	Y; A; Y; Y; Y; Y	
Participants	87 adults; 41 female; middle ear; ASA1,2; exc' obese, retardation	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.; or PROMETHAZINE 12.5mg; or ONDANSETRON 2mg AND PROMETHAZINE 12.5mg	
Outcomes	All outcomes. Postop 0-3; 0-24 hours.	
Notes	Rescue antiemetic only 0-3 hours. Male/female incidences not reported. No side effect. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kimya 1996**

Methods	N; B; Y; N; Y; Y	
Participants	140 women; gynaecological; exc' pregnant, liver/CNS disease	
Interventions	Induction Either: NO TREATMENT; or ONDANSETRON 8mg i.v.	

**Kimya 1996** (Continued)

Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	No side effect.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**King 1988**

Methods	N; B; Y; N; Y; Y	
Participants	38 adults; no sex data; ASA1,2; orthopaedic; exc' significant disease, antiemetic	
Interventions	Intraoperative Either: No treatment; or Atropine 1.2mg i.v. AND neostigmine 2.5mg	
Outcomes	All outcomes. Period: 0-24 hours postoperatively.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Klahsen 1996**

Methods	Y; B; Y; Y; N; N	
Participants	80 women; gynaecological; ASA1,2; 18-70 (mean 41); exc' pregnancy/lactation, Parkinsonism, GI disease, study drug allergy, antipsychotic, antihistamine	
Interventions	Induction AND postoperative Either: PLACEBO twice; or DROPERIDOL 1mg i.v. then PLACEBO/DROPERIDOL 0.02mg/ml or 0.04mg/ml PCA	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	

**Klahsen 1996** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Klockgether 1992**

Methods	N; B; Y; N; Y; Y
Participants	100 children; 50 female; strabismus; 3-10 (mean 6); ASA1,2
Interventions	Postoperative Either: PLACEBO; or DROPERIDOL 0.075mg/kg i.v.; or METOCLOPRAMIDE 0.15mg/kg
Outcomes	Vomiting. Postop 0-3; 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting. Unclear if retching vomiters categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Klockgether 1993**

Methods	N; B; Y; N; Y; Y
Participants	100 children; 46 female; strabismus; 3-12 (mean 6)
Interventions	Induction AND postoperative Either: DROPERIDOL 75 mcg/kg +/- ATROPINE 10 mcg/kg i.v. then no treatment; or no treatment then DROPERIDOL 75 mcg/kg +/- ATROPINE 10 mcg/kg
Outcomes	Vomiting. Postoperative 0-24 hours.
Notes	Male/female incidences not recorded. Retching categorized as vomiting

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Klockgether 1993** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Klockgether 1997**

Methods	N; B; Y; Y; Y; Y	
Participants	160 children; 78 female; ASA1,2; 4-14 years; strabismus	
Interventions	Induction AND intraoperative Either: PLACEBO twice; or DROPERIDOL 75 mcg/kg i.v. then PLACEBO or ON DANSETRON 0.1 mg/kg; or ONDANSETRON 0.1 mg/kg then PLACEBO	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Knudsen 1994**

Methods	N; B; Y; N; N; N	
Participants	60 adults; 34 women; hip arthroplasty; exc' heart/GI/renal/extraparasydral disease	
Interventions	Induction AND postoperative Either: PLACEBO twice; or METOCLOPRAMIDE 20mg i.m. twice	
Outcomes	Vomiting; rescue antiemetic. Postop 0-5 hours.	
Notes	Male/female incidences not reported. No side effects.	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate



### Koivuranta 1996

Methods	N; A; Y; Y; Y; Y	
Participants	63 adults; female 49; ASA1,2; exc' pregnant/breastfeeding, antiemetic, liver disease	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg/kg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-2; 2-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Koivuranta 1997

Methods	N; B; Y; Y; Y; Y	
Participants	94 women; laparoscopies; previous PONV; ASA 1-3; exc' breastfeeding/pregnant, antiemetic, liver or Parkinson's disease	
Interventions	Intraoperative Either: DROPERIDOL or 1.25mg i.v.	
Outcomes	All outcomes. Postop 0-2; 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Koivuranta 1997b

Methods	Y; A; Y; N; Y; Y	
Participants	439 women; laparoscopies; > 15 years; ASA1-3; exc' pregnant/breastfeeding, liver/Parkinson's disease, antiemetic	

**Koivuranta 1997b** (Continued)

Interventions	INDUCTION Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or ONDANSETRON 8mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Koivuranta 1999**

Methods	Y; B; Y; N; N; N	
Participants	88 women; gynaecological; >18 years (mean 40); ASA1-3; exc' pregnant/breastfeeding, liver/metabolic/Parkinson's disease, antiemetic	
Interventions	Intraoperative Either: ONDANSETRON 8mg i.v.; or TROPISETRON 5mg	
Outcomes	All outcomes. Postop 0-2; 0-24 hours.	
Notes	Nausea or vomiting only 0-2 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Kokinsky 1999**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; 30 female; various surgeries; 5-16 (mean 11); exc' epilepsy	
Interventions	Induction Either: PLACEBO; or DIXYRAZINE 0.25 mg/kg i.v.	

**Kokinsky 1999** (Continued)

Outcomes	All outcomes. Postop 0-2; 2-24 hours.	
Notes	Outcomes commonest 2-24 hours. Male/female incidences not reported. Side effects “dixyrazine sedative”. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Korttila 1979**

Methods	N; B; Y; N; Y; Y	
Participants	185 women; orthopaedic; ASA1,2; mean 42; exc' antiemetics	
Interventions	Intraoperative Either: PLACEBO; or DOMPERIDONE 5 or 10mg i.v.; or DROPERIDOL 1.25mg; or METOCLOPRAMIDE 10mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Korttila 1985**

Methods	N; B; Y; N; Y; Y	
Participants	112 women; orthopaedic; ASA1,2; exc’ antiemetic	
Interventions	Preoperative OR intraoperative Either: PLACEBO twice; or PLACEBO then DROPERIDOL 1.25mg i.v.; or DROPERIDOL 2.5mg i.m. then PLACEBO	
Outcomes	All outcomes. Postop 0-24 hours.	

**Korttila 1985** (Continued)

Notes	Side effects not recorded. I combined retching and vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Korttila 1997**

Methods	N; B; Y; N; N; N	
Participants	517 adults; 486 female; various surgeries; ASA1-3; 18-65 (mean 43); exc' pregnant, NG, antiemetic, cardiac/liver disease, obese, alcohol abuse	
Interventions	Induction Either: PLACEBO; or DOLASETRON 25 or 50mg i.v.; or ONDANSETRON 4mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear if vomiters nauseated or categorized once or twice.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Koski 1990**

Methods	N; B; Y; N; N; N
Participants	283 women; various surgeries; ASA1-3; mean 22; exc' study drug allergy
Interventions	Preoperative 12 hours for 48 hours Either: PLACEBO; or HYOSCINE patch (140 mcg then 5 mcg/hr)
Outcomes	All outcomes Postop 0-3; 3-48 hours.
Notes	Rescue antiemetic only 0-3 hours. Others commonest 3-48 hours. Unclear if vomiters nauseated or categorized once or twice. Unclear how retching categorized
<i><b>Risk of bias</b></i>	

**Koski 1990** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kotake 2000**

Methods	N; A; Y; N; Y; Y
Participants	60 adults; 24 female; anal; ASA1,2
Interventions	Intraoperative AND postoperative Either; NO TREATMENT; or epidural BUTORPHANOL 0.85 mg/hr; or DROPERIDOL 0.11 mg/hr
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear if vomiters andretchers nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kothari 2000**

Methods	N; A; Y; N; N; N
Participants	138 adults; 79 female; lap' chole'; ASA1-3; mean 49
Interventions	Induction Either: DIMENHYDRINATE 50mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kovac 1996b

Methods	N; B; Y; N; Y; Y	
Participants	468 men; various surgeries; ASA1,2; exc' obese, NG, antiemetic, study drug	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kranke 1999

Methods	Y; B; Y; N; Y; Y	
Participants	380 adults and children; no sex or age data; ENT/strabismus.	
Interventions	Induction AND intraoperative Either: PLACEBO twice; or METOCLOPRAMIDE 1mg/kg (max 50mg) i.v. then PLACEBO; or vice versa	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not reported. Unclear if vomiters nauseated or categorized once or twice. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Kranke 1999b

Methods	Y; B; Y; N; Y; Y	
Participants	372 adults (increased risk) and children; no sex or age data; ENT/strabismus	

**Kranke 1999b** (Continued)

Interventions	Induction AND intraoperative Either: PLACEBO twice; or TROPISETRON 50 mcg/kg (max 2.5mg) i.v. then PLACEBO; or vice versa	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kraus 1991**

Methods	N; B; N; N; Y; Y	
Participants	61 children; 34 female; strabismus; 3-14 (mean 6); ASA1,2	
Interventions	Induction AND intraoperative Either: NO TREATMENT twice; or DROPERIDOL 0.075mg/kg i.v. then NO TREATMENT; or vice versa	
Outcomes	Nausea or vomiting. Postop 0-4 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kreisler 2000**

Methods	N; B; Y; N; Y; Y	
Participants	150 adults; 91 women; various surgeries; exc' pregnant, study drug allergy, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625mg i.v.	

**Kreisler 2000** (Continued)

Outcomes	All outcomes. Postop 0-4; 4-24 hours.	
Notes	Nausea or vomiting commonest 4-24 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ku 2000**

Methods	N; B; Y; N; Y; Y	
Participants	58 adults; 33 women; tympanoplasty; excluded <18 >75, drug abuse, antiemetic, renal/ liver disease, pregnant	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-1; 1-2; 2-4; 4-8; 8-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kumar 1992**

Methods	N; B; Y; Y; Y; Y	
Participants	100 adults; 49 women; eye; ASA1,2; exc' IOP>25mmHg, clonidine, calcium/betablocker	
Interventions	Preoperative 2 hours. Either: oral CLONIDINE 300 mcg/kg; or DIAZEPAM 0.15 mg/kg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6 hours,	



**Kumar 1992** (Continued)

Notes	Male/female incidences not given. Unclear how retching categorized. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kumar 1996**

Methods	N; B; Y; N; Y; Y	
Participants	30 women; gynaecological	
Interventions	Preoperative Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kymer 1995**

Methods	N; B; Y; N; Y; Y	
Participants	154 children; no sex data; strabismus; ASA1,2; 1-15 (mean 4)	
Interventions	Preoperative Either: PLACEBO; or oral DROPERIDOL 300 mcg/kg; or METOCLOPRAMIDE 0.15mg/kg; or both	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	

**Kymer 1995** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Kyokong 1999**

Methods	N; B; Y; Y; N; N	
Participants	408 adults; 242 women; GI; ASA1,2; 18-75 (mean 50); exc' N&V/antiemetic, pregnant/ breastfeeding, >100kg, drug abuse, study drug allergy	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lamond 1998**

Methods	N; A; Y; Y; N; N
Participants	80 women; gynaecological; 18-85 years; ASA1,2; exc' opioid, antiemetic, Parkinsonism, study drug allergy
Interventions	Postoperative PCA Either: DROPERIDOL bolus 0.05 or 0.1 or 0.15 or 0.2 mg/ml
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Unclear how retching categorized. Patients categorized by severest symptom (vomiting>nausea)
<i>Risk of bias</i>	

**Lamond 1998** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Laraki 1996**

Methods	N; B; N; N; Y; Y
Participants	26 adults; 24 female; thyroidectomy
Interventions	Preoperative 16 AND 1 hour Either: PLACEBO twice; or oral LORAZEPAM 2.5mg twice
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-12; 0-12 hours.
Notes	Nausea and vomiting commonest 0-2 hours. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Larsson 1988**

Methods	N; B; Y; N; N; N
Participants	90 adults; 49 female; various surgeries
Interventions	Preoperative Either: PLACEBO; or DIXYRAZINE 0.5mg/kg i.m.
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-6 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Larsson 1990

Methods	N; B; Y; N; Y; Y	
Participants	61 children; no sex data; strabismus ; ASA1; 2-14 (mean 7)	
Interventions	Intraoperative Either: NO TREATMENT; or DIXYRAZINE 0.25mg/kg i.v.; or DROPERIDOL 0.075mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 0-4; 0-6; 0-8; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Latasch 2003

Methods	N; B; Y; N; Y; Y	
Participants	100 adults; 85 women; cholecystectomy; mean 45	
Interventions	Intraoperative Either: PLACEBO; or PHYSOSTIGMINE 2mg iv	
Outcomes	Nausea; vomiting. Postop 0-10; 10-20; 20-40; 40-60 minutes.	
Notes	Outcomes commonest 40-60 minutes. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Lauretti 1997

Methods	Y; B; Y; N; N; N
Participants	100 adults; 48 female; orthopaedic; ASA1,2; exc' analgesic/antiemetic, epilepsy
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 0.5mg i.v.; or METOCLOPRAMIDE 10mg
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Lauretti 1997b

Methods	Y; B; Y; N; N; N
Participants	100 women; hysterectomy; ASA1,2; mean 47; exc' analgesic/antiemetic, epilepsy, N&V
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 0.5mg i.v.; or METOCLOPRAMIDE 10mg
Outcomes	Nausea; nausea or vomiting. Postop 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Lauretti 1997c

Methods	N; B; Y; N; Y; Y
Participants	60 adults; 23 female; orthopaedic; ASA1,2; mean 38
Interventions	Induction Either: PLACEBO; or intrathecal NEOSTIGMINE 25 or 50 or 100 mcg

**Lauretti 1997c** (Continued)

Outcomes	See notes.	
Notes	Incidences not reported. Male/female incidences not reported. Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Lauretti 1998**

Methods	Y; A; Y; Y; Y; Y	
Participants	92 women; hysterectomy; ASA1,2; mean 53; exc' >70 years, study drug allergy, bradycardia	
Interventions	Intraoperative Either; PLACEBO; or intrathecal NEOSTIGMINE 25 or 50 or 75 mcgs	
Outcomes	Rescue antiemetic. Postop 0-24 hours.	
Notes	Side effects not recorded.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Lawhorn 1993**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; no sex data; ASA1,2; 1-12; tonsils +/- adenoids	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 20 mcg/kg i.v.; or ONDANSETRON 0.15mg/kg	
Outcomes	Vomiting. PACU.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	

**Lawhorn 1993** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lawhorn 1993b**

Methods	N; B; Y; N; Y; Y
Participants	60 children; no sex data; strabismus; ASA1,2
Interventions	Induction Either: PLACEBO; or DROPERIDOL 20 mcg/kg i.v.; or ONDANSETRON 0.15mg/kg
Outcomes	Vomiting. PACU.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lawhorn 1996**

Methods	N; B; Y; Y; N; N
Participants	165 children; no sex data; adenotonsillectomy; ASA1,2; 1-12 (mean 5)
Interventions	Preoperative AND intraoperative Either: PLACEBO then DROPERIDOL mcg/kg i.v. or ONDANSETRON 0.15mg/kg; or oral METOCLOPRAMIDE 0.15mg/kg then PLACEBO or DROPERIDOL or ON- DANSETRON
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24 hours.
Notes	Vomiting commonest 3-24 hours. Male/female incidences not recorded. Side effects not recorded. Unclear how many in each group. Unclear how retching categorized

<i>Risk of bias</i>		
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**Lawhorn 1996** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lawhorn 1997**

Methods	Y; A; Y; N; Y; Y
Participants	320 children; tonsil + adenoids, strabismus; exc' PONV, motion sickness, antiemetic
Interventions	Preoperative Either: NO TREATMENT or oral METOCLOPRAMIDE 0.15mg/kg AND PLACEBO or ONDANSETRON 0.05 or 0.1 or 0.15mg/kg i.v
Outcomes	Vomiting. Postop 0-3; 3-24 hours.
Notes	Vomiting commonest 3-24 hours. Male/female incidences not recorded. Side effects not recorded. Unclear how many in each group. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Lawrence 1997**

Methods	Y; A; Y; N; Y; Y
Participants	50 adults; various surgeries; 1 female; ASA1,2; exc' fertile women, >100kg
Interventions	Preoperative Either: PLACEBO; or DEXMEDETOMIDINE 2 mcg/kg i.v.
Outcomes	Rescue antiemetic. Postop 0-3 hours.
Notes	Incidence not reported.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



#### Layfield 1984

Methods	N; B; Y; N; Y; Y
Participants	60 children; no sex data; <33kg; 1-9; ENT/general.
Interventions	Preoperative Either: NO TREATMENT; or DROPERIDOL 0.2mg/kg oral
Outcomes	Vomiting. Postop time unclear.
Notes	Male/female incidences not recorded. Side effects “no extrapyramidal”. Unclear how retching categorized

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

#### Lazar 1984

Methods	N; B; Y; Y; Y; Y
Participants	35 adults; 19 female; 21-69 years; middle ear
Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE patch
Outcomes	Nausea; vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

#### Le Roy 1995

Methods	N; B; Y; N; Y; Y
Participants	45 women; gynaecological

**Le Roy 1995** (Continued)

Interventions	Induction AND intraoperative Either: PLACEBO twice; or ONDANSETRON 4 or 8mg i.v. twice	
Outcomes	Nausea; rescue antiemetic. Postop 0-30 hours.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lee 2001**

Methods	Y; A; Y; Y; Y; Y	
Participants	135 women; thyroidectomy; ASA1,2; exc' motion sickness, GI disease, antiemetic, obese, smoker	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 5 or 8mg i.v.	
Outcomes	All outcomes. Postop 0-2; 2-24; 0-24 hours.	
Notes	No side effects. Unclear if vomiters nauseated. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Lee 2002**

Methods	N; B; Y; N; Y; Y	
Participants	113 adults; 104 women; thyroid; ASA1,2; 18-65 (mean 40); exc' obese, GI disease, antiemetic	
Interventions	Induction Either: PLACEBO; or GRANISETRON 20 mcg/kg iv; or RAMOSETRON 4 mcg/kg	
Outcomes	All outcomes. Postop 0-1; 1-2; 0-24 hours.	

**Lee 2002** (Continued)

Notes	Male/female incidences not reported. Retching categorized as vomiting. Categorized by severest symptom (vomiting > nausea). Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lee 2002b**

Methods	Y; A; Y; N; N; N	
Participants	90 women; orthopaedic; ASA1,2; 28-69 (mean 43); exc' GI disease, liver/renal disease, antiemetic, N&V, obese, smoker	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg iv	
Outcomes	All outcomes Postop 0-6; 6-12; 12-24; 0-24 hours.	
Notes	No side effects. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lee 2003**

Methods	Y; B; Y; Y; Y; Y
Participants	168 women; laparoscopies; 28-58 (mean 39); ASA1,2; exc' pregnant, obese, smoker, steroid, GI/liver/renal/ear disease, N&V, antiemetic
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg iv
Outcomes	All outcomes. Postop 0-2; 0-6; 6-12; 12-18; 0-24 hours.
Notes	No side effects. Retching categorized as vomiting.
<i><b>Risk of bias</b></i>	

**Lee 2003** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Leeser 1991**

Methods	Y; B; Y; N; Y; Y
Participants	84 women; gynaecological; 18-65 (mean 44); exc' pregnant/breastfeeding, renal/hepatic/heart/metabolic/endocrine disease, antiemetic
Interventions	Preoperative AND postoperative Either: PLACEBO twice; or oral ONDANSETRON 8mg twice
Outcomes	All outcomes. Postop 0-1; 0-24 hours.
Notes	No side effects. Retching categorized as nausea. Vomitters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lekprasert 1996**

Methods	N; B; Y; N; Y; Y
Participants	82 adults; 61 female; ASA1,2; 12-75 (mean 50); GI; exc' obese, ASA>2, N&V/antiemetic, pregnant/breastfeeding, drug abuse, study drug allergy
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Lepouse 1999

Methods	N; B; N; N; N; N	
Participants	60 adults; no sex data; thyroid/breast	
Interventions	Postoperative Either: PLACEBO; or ONDANSETRON 4mg i.v. +/- DEXAMETHASONE 8mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Incidences not reported.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Lessard 1997

Methods	N; B; Y; Y; N; N	
Participants	100 adults; 35 female; various surgeries; ASA1,2; exc’ CNS, NM, renal, liver disease, BMI <20 >30, pregnant	
Interventions	Intraoperative Either: PLACEBO; or NEOSTIGMINE AND GLYCOPYRROLATE (10 mcg/kg AND 2.5 mcg/kg i.v.; or double or quadruple doses)	
Outcomes	Nausea or vomiting. Postop 0-1 hour.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Lewis 1994

Methods	Y; B; N; Y; N; N	
Participants	60 women; <70 years; ASA1,2; hysterectomy; exc' psychiatric, antiemetic	
Interventions	Preoperative Either: oral METOCLOPRAMIDE 10mg; or oral NABILONE 2mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop about 4 hours; 4-24 hours.	
Notes	Outcomes commonest 4-24 hours. No side effects. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Liberman 2000

Methods	N; A; Y; Y; N; N	
Participants	100 adults; 66 women; lap' chole'; mean 34; exc' < 15 >65, pregnant	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-12 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Lim 1991

Methods	N; B; N; N; Y; Y	
Participants	325 women; STOP; ASA1,2; exc' antiemetic/N&V, ergometrine	

**Lim 1991** (Continued)

Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.25 or 1.25 or 2.5mg i.v.; or METOCLOPRAMIDE 10 mg	
Outcomes	Nausea or vomiting. Postop 0-6 hours.	
Notes	Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lim 1999**

Methods	N; B; N; N; N; N	
Participants	228 women; laparoscopies; ASA1,2	
Interventions	Intraoperative Either: DROPERIDOL 10 or 20 mcg/kg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-7; 7-24 hours.	
Notes	Rescue antiemetic only 0-7 hours, nausea 7-24 hours. Vomiting commonest 0-7hours. Retching categorized with vomiting. Unclear if nauseated vomiters categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lin 1992**

Methods	N; B; Y; N; N; N	
Participants	110 children; 57 female; strabismus; mean 5; ASA1,2	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.075mg/kg i.v.; or METOCLOPRAMIDE 0.15 or 0.25 mg/kg	

**Lin 1992** (Continued)

Outcomes	Vomiting. Postop 0-3 hours.	
Notes	Male/female incidences not reported. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lind 1970**

End 17/6

Methods	N; A; Y; Y; Y; Y	
Participants	188 women; gynaecological.	
Interventions	Intraoperative Either: METOCLOPRAMIDE 10mg i.m.; or PERPHENAZINE 5mg i.m.	
Outcomes	Vomiting. Postop 0-6 hours.	
Notes	Side effects “metoclopramide sedating”. Retching categorized as vomiting. Unclear if vom- iters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Litman 1994**

Methods	N; B; Y; Y; N; N	
Participants	67 children; 34 girls; ASA1,2; mean 7; tonsil +/- adenoids; exc' motion sickness/PONV	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.15mg/kg (to 8mg) i.v.	
Outcomes	Vomiting. Postop 0-24; 24-48 hours.	
Notes	Vomiting commonest 0-24 hours. Male/female incidences not reported. Unclear how retch- ing categorized	



**Litman 1994** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Litman 1995**

Methods	N; A; Y; Y; Y; Y	
Participants	57 children; 23 female; strabismus; ASA1,2; 3-14 (mean 6); exc' GI dysmotility	
Interventions	Induction Either: DROPERIDOL 0.075mg/kg i.v.; or ONDANSETRON 0.15mg/kg	
Outcomes	Vomiting. Postop 0-24; 24-48 hours.	
Notes	Vomiting commonest 0-48 hours. Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Liu 1999**

Methods	Y; B; Y; N; Y; Y	
Participants	150 women; gynaecological; ASA1,2; exc' motion sickness/PONV, GI disease, menstrual, hormone	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 1.25 or 2.5 or 5 or 10mg i.v	
Outcomes	Vomiting; rescue antiemetic Postop 0-24 hours.	
Notes	No side effects.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Liu 1999** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Liu 2001**

Methods	Y; B; Y; Y; Y; Y
Participants	80 adults; 47 female; middle ear; ASA1,2; exc' antiemetic, GI disease, PONV
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 10mg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting. Categorized by severest symptom (vomiting>nausea)

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Loach 1975**

Methods	N; A; Y; N; N; N
Participants	22 women; gynaecological; ASA1; 21-64
Interventions	Preoperative Either: PLACEBO; or LORAZEPAM 2mg oral
Outcomes	Nausea; vomiting. Postop 0-6 hours.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Loewen 2003

Methods	Y; A; Y; Y; Y; Y	
Participants	73 women; breast; mean 50; exc' study drug allergy, liver/renal/cardiac/CNS/GI disease, pregnant, drug abuse, antiemetic	
Interventions	Intraoperative Either: DOLASETRON 50mg iv; or DROPERIDOL 1mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Loo 1997

Methods	N; B; Y; N; Y; Y	
Participants	80 women; STOP; ASA1; mean 34; exc' pessary, N&V	
Interventions	Induction Either: NO TREATMENT; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	All outcomes. Postop 0-1; 1-2 hours.	
Notes	Outcomes commonest 0-1 hour. No side effects.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Loper 1989

Methods	N; B; Y; N; Y; Y	
Participants	32 women; gynaecological	
Interventions	Preoperative Either: PLACEBO; or HYOSCINE patch (1.5mg / 3 days)	

**Loper 1989** (Continued)

Outcomes	Nausea. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lopez-Olaondo 1996**

Methods	N; B; Y; Y; Y; Y	
Participants	100 women; gynaecological; ASA1,2; 18-65 (mean 47); exc' opioid, NSAID, steroid/antiemetic, study drug allergy	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg i.v.; or ONDANSETRON 4mg; or both	
Outcomes	All outcomes. Postop 0-2; 0-12; 0-24; 0-48 hours	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lovstad 2001**

Methods	N; A; Y; N; N; N	
Participants	90 women; laparoscopies; ASA1,2; 18-60 (mean 37); exc' pregnant, antiemetic/analgesic/bambuterol, >100kg	
Interventions	Intraoperative Either: PLACEBO; or NEOSTIGMINE 50 mcg/kg AND GLYCOPYRROLATE 10 mcg/kg	
Outcomes	All outcomes. Postop 0-6; 6-24; 0-24 hours.	

**Lovstad 2001** (Continued)

Notes	Side effects not recorded. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Lunn 1995**

Methods	Y; A; Y; N; N; N	
Participants	270 children; various surgeries; 31 female; 1-15 (mean 5)	
Interventions	Induction Either: NO TREATMENT; or DROPERIDOL 20 mcg/kg i.v.	
Outcomes	Vomiting. Postop 0-6; 6-24 hours.	
Notes	Vomiting commonest 6-24 hours. Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**López Herrera 1998**

Methods	N; B; N; N; Y; Y
Participants	40 adults; laparoscopies; 33 female; ASA1,2; mean 42
Interventions	Preoperative AND postoperative twice Either: ONDANSETRON 4mg i.v. thrice; or TROPISETRON 5mg i.v. then NO TREATMENT twice
Outcomes	Nausea; vomiting. Postop 0-8 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice
<i>Risk of bias</i>	

**López Herrera 1998** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Madan 2000**

Methods	N; A; Y; Y; Y; Y
Participants	120 children; 58 female; strabismus; ASA1,2; 1-15 (mean 6); exc' motion sickness/PONV
Interventions	Induction AND intraoperative Either: ONDANSETRON 100 mcg/kg i.v. then PLACEBO; or vice versa
Outcomes	Vomiting; rescue antiemetics. Postop 0-2; 2-6; 6-24; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not reported. Retching not categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Madej 1986**

Methods	N; B; Y; N; N; N
Participants	200 women; gynaecological; ASA1,2; 16-70 (mean 39); exc' antiemetic
Interventions	Intraoperative Either: PLACEBO; or DOMPERIDONE 20mg i.v.; or DROPERIDOL 2.5mg; or METOCLOPRAMIDE 10mg
Outcomes	Nausea or vomiting. Postop 0-6; 0-24 hours.
Notes	Unclear if 'nausea and vomiting' is 'nausea or vomiting'. Unclear if nauseated vomiters categorized once or twice. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Madaj 1986b

Methods	N; B; Y; N; N; N	
Participants	201 women; gynaecological; ASA1,2; 16-70 (mean 36); exc' antiemetic	
Interventions	Induction Either: PLACEBO; or DOMPERIDONE 20mg i.v.; or DROPERIDOL 2.5mg; or METOCLOPRAMIDE 10mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 0-2; 0-3; 0-4 hours.	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Madenoglu 2003

Methods	Y; B; Y; N; N; N	
Participants	65 adults; 31 women; craniectomy; 18-76 (mean 44); ASA1-3; exc' N&V, antiemetic, study drug allergy, pregnant/breastfeeding, obese, psychiatric	
Interventions	Intraoperative Either: PLACEBO; or TROPISETRON 2mg iv	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-12; 12-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Malins 1994

Methods	N; B; Y; Y; Y; Y	
Participants	153 women; gynaecological; ASA1,2; exc' postmenopausal, ectopic, reflux	
Interventions	Preoperative Either: PLACEBO; or oral METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg	
Outcomes	All outcomes. Postop 0-48 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Maltepe 1996

Methods	N; B; N; N; Y; Y	
Participants	60 children; 31 female; strabismus	
Interventions	Intraoperative Either: DROPERIDOL 0.05mg/kg i.v.; or METOCLOPRAMIDE 0.15mg/kg; or ON-DANSETRON 0.15mg/kg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Manani 1996

Methods	N; B; Y; N; Y; Y	
Participants	200 children; 109 girls; strabismus; exc' premature, obese, GI/liver disease, DM, inner ear disease	



**Manani 1996** (Continued)

Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.075mg/kg i.v; or ONDANSETRON 0.4mg/kg	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mansfield 1997**

Methods	N; B; Y; Y; Y; Y	
Participants	40 women; various surgeries; ASA1,2; exc' drugs, drug abuse, pregnant, renal disease	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 8mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Marcus 2002**

Methods	N; B; Y; N; Y; Y	
Participants	120 adults; 104 female; plastic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting.	

**Marcus 2002** (Continued)

Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Martin 1987**

Methods	N; B; N; N; Y; Y	
Participants	60 adults; no sex data; ASA1,2; 17-59; various surgeries; exc' antiemetic, cold, ear infection	
Interventions	Intraoperative Either: NO TREATMENT; or DROPERIDOL 0.015 mg/kg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 to 72 hours.	
Notes	Male/female incidences not reported. I combined retching and vomiting. Unclear if vomiters retched or nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Martins 1995**

Methods	N; A; N; N; Y; Y
Participants	105 adults; 92 female; urological/gynaecological; ASA1,2; 18-65; exc' ASA>3
Interventions	Preoperative AND induction Either: NO TREATMENT twice; or NO TREATMENT then ONDANSETRON 4mg i.v.; or PROMETHAZINE 25mg i.m. then NO TREATMENT
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded
<i>Risk of bias</i>	

**Martins 1995** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Martínez 1995**

Methods	N; B; N; N; Y; Y
Participants	40 children; 20 female; dental; 3-5 (mean 4)
Interventions	Preoperative Either: oral DIAZEPAM 0.3mg/kg; or nasal MIDAZOLAM 0.3mg/kg
Outcomes	Vomiting. Postop time unclear.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mathia 1988**

Methods	N; B; N; N; Y; Y
Participants	52 women; gynaecological; ASA1,2; 19-45 (mean 31)
Interventions	Preoperative twice Either: oral PLACEBO twice; or oral METOCLOPRAMIDE 20mg twice; or NO TREATMENT twice
Outcomes	All outcomes. Postop 0-1; 1-2; 2-3; 3-4; 0-24 hours.
Notes	Nausea and rescue antiemetic commonest 2-3 hours, vomiting 0-1 hour. Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Mathia 1988** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Mattila 1974**

Methods	N; B; Y; Y; Y; Y
Participants	102 women; STOP
Interventions	Induction Either: PLACEBO; or DIAZEPAM 10mg i.v.
Outcomes	Nausea; vomiting. Postop time unclear.
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mattila 1979**

Methods	N; B; Y; N; Y; Y
Participants	109 women; STOP/D&C; 14-49; exc' psychiatric
Interventions	Induction Either: PLACEBO; or DIAZEPAM 10 mg i.v.
Outcomes	Nausea; vomiting. Postop 0-3 hours.
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mattila 1979b**

Methods	N; B; Y; Y; N; N	
Participants	90 women; gyneacological/general; exc' poor risk	
Interventions	Intraoperative Either: DIAZEPAM 10mg i.v.; or FLUNITRAZEPAM 1mg	
Outcomes	All outcomes. Postop time unclear.	
Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mattila 1981**

Methods	N; B; Y; N; Y; Y	
Participants	41 adults; no sex data; 65-85; laparotomy	
Interventions	Intraoperative twice Either: PLACEBO twice; or DIAZEPAM 5mg twice	
Outcomes	Nausea; vomiting. Postop time unclear.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mattila 1981b**

Methods	N; B; Y; N; Y; Y	
Participants	113 women; gynaecological	
Interventions	Induction Either: PLACEBO; or DIAZEPAM 10mg i.v.	

**Martila 1981b** (Continued)

Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mayson 2000**

Methods	Y; A; Y; Y; N; N	
Participants	52 men; prostatectomy; ASA1-3; mean 62; exc' clonidine, study drug allergy, cardiac disease, alcohol abuse, psychotropic/analgesic	
Interventions	Preoperative Either: oral PLACEBO; or CLONIDINE 3 mcg/kg	
Outcomes	Nausea. Postop 0-48 hours.	
Notes	The incidence not reported.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**MayznerZawadzka 1996**

Methods	N; B; Y; N; Y; Y	
Participants	32 children; no sex data; strabismus; ASA1; median 10	
Interventions	Preoperative AND induction AND postoperative twice Either: NO TREATMENT then PROMETAZINE 0.5mg/kg i.m. then oral PROMETAZINE 3.3 or 6.6mg/kg twice; or ONDANSETRON 0.1mg/kg i.v. then NO TREATMENT then ONDANSETRON 0.1mg/kg i.v. twice	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	

**MayznerZawadzka 1996** (Continued)

Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized. Second postoperative ondansetron not given if asymptomatic	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**McAllister 1996**

Methods	N; B; Y; N; Y; Y	
Participants	50 children; no sex data; strabismus; ASA1,2	
Interventions	Intraoperative Either: PLACEBO; or GRANISETRON 10 or 40 mcg/kg i.v.	
Outcomes	Vomiting. Postop hospital; home; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**McCall 1999**

Methods	N; B; Y; N; N; N
Participants	104 adults/children; 50 female; burns; 2-25 (mean 12)
Interventions	Intraoperative AND postoperative Either: PLACEBO twice; or DIMENHYDRINATE 0.5mg/kg i.v. twice; or ON-DANSETRON 0.1mg/kg twice
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting
<i><b>Risk of bias</b></i>	

**McCall 1999** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**McCartney 2003**

Methods	Y; B; Y; Y; Y; Y
Participants	54 adults; 24 women; hand; mean 44; ASA1,2; exc' Raynaud's, sickle cell, study drug allergy, conduction abnormality, COPD
Interventions	Induction Either: PLACEBO; or NEOSTIGMINE 1mg iv
Outcomes	Nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**McKenzie 1982**

Methods	N; A; Y; N; Y; Y
Participants	150 women; STOP; exc' ASA>2, epilepsy, renal/liver disease
Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5mg i.m.; or HYDROXYZINE 100mg i.m
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3 hours.
Notes	

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### McKenzie 1993b

Methods	N; B; Y; N; N; N
Participants	207 women; various surgeries; ASA1-3; 18-65 (mean 39); exc' antiemetic, obese, liver disease, NG
Interventions	Induction AND postoperative Either: PLACEBO twice; or ONDANSETRON 8mg i.v. twice
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters/retchers nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### McKenzie 1994

Methods	N; B; Y; N; Y; Y
Participants	180 women; gynaecological; ASA1,2; 18-70; antiemetics, study drug allergy, NG
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 0-4; 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### McKenzie 1995

Methods	N; A; Y; Y; Y; Y
Participants	60 women; hysterectomy; ASA1,2; mean 43; exc' NG, study drug contraindicated

### McKenzie 1995 (Continued)

Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL 0.5 or 1mg/30ml	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	No side effects. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### McKenzie 1996

Methods	Y; A; Y; Y; N; Y	
Participants	120 women; laparoscopies; ASA1,2	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects “droperidol sedative”. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### McKenzie 1997

Methods	Y; A; Y; Y; Y; Y	
Participants	80 women; gynaecological; ASA1-3; exc' DM, antiemetic, NG, study drug allergy	
Interventions	Induction Either: (PLACEBO or DEXAMETHASONE 20mg i.v.) AND ONDANSETRON 4mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	

**McKenzie 1997** (Continued)

Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Mecklem 1994**

Methods	N; B; Y; Y; Y; Y	
Participants	100 adults; 72 female; various surgeries; exc' sedative/analgesic, study drug allergy	
Interventions	Induction Either: LIDOCAINE 10mg i.v.; or METOCLOPRAMIDE 20mg	
Outcomes	Nausea; vomiting. Postop 0-1 hour.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Memis 2003**

Methods	N; A; N; N; N; N
Participants	45 children; no sex data; hernia; 1-5 (mean 3); ASA1; exc' caudal contraindicated, CNS disease
Interventions	Induction Either: PLACEBO; or caudal NEOSTIGMINE 1 mcg/kg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized
<i>Risk of bias</i>	

**Memis 2003** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Migliavacca 1992**

Methods	N; B; Y; N; Y; Y	
Participants	80 women; gynaecological	
Interventions	Postoperative Either PLACEBO; or CLEBOPRIDE 1mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6 hours.	
Notes	Unclear how retching categorized. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mikawa 1995**

Methods	N; B; Y; N; Y; Y	
Participants	140 children; 84 girls; strabismus; 3-12 (mean 7); ASA1; exc' GI disease, obese, previous operation	
Interventions	Preoperative Either: PLACEBO; or oral CLONIDINE 2 or 4 mcg/kg; or oral DIAZEPAM 0.4mg/kg	
Outcomes	Vomiting. Postop (time unclear)	
Notes	Male/female incidences not recorded. Retching not categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Mikawa 1995b**

Methods	N; B; Y; N; Y; Y
Participants	120 women; gynaecologic; ASA1; 22-65 (mean 45); exc' antiemetic, GI disease, pregnant, obese, NG
Interventions	Intraoperative Either: PLACEBO; or GRANISETRON 20 or 40 microgram/kg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mikawa 1997**

Methods	Y; B; Y; N; Y; Y
Participants	90 children; no sex data; ASA1; 2-11 (mean 6); exc' ASA>1, obese, previous operation, GI disease
Interventions	Induction Either: PLACEBO; or FLURBIPROFEN 0.5 or 1 mg/kg i.v.
Outcomes	Vomiting. Postop 0-8 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Retching not categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Mikawa 1997b

Methods	N; B; Y; Y; Y; Y	
Participants	200 women; gynaecological; ASA1; 20-67 (mean 46); exc' antiemetic, GI disease, pregnant, obese, liver/renal disease, NG	
Interventions	Induction Either: PLACEBO; or GRANISETRON 2 or 5 or 10 or 20 mcg/kg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Side effects not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Miles 1996

Methods	N; B; Y; Y; N; N	
Participants	105 adults; no sex data; ASA1-3; various surgeries; exc' obese, NG, motion sickness/PONV, antiemetic, pregnancy	
Interventions	Preoperative Either: DROPERIDOL 1.25mg i.v.; or ONDANSETRON 4mg	
Outcomes	Unclear. Postop unclear.	
Notes	Male/female incidences not recorded. Unclear number per group or how retching categorized	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Millar 1987

Methods	N; B; Y; Y; N; N	
Participants	150 women; STOP; ASA1,2; exc' antiemetics, drugs interacting with droperidol	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.25 or 0.5mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetics. Postop 0-24 hours.	
Notes		
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Miller 1988

Methods	N; B; N; N; Y; Y	
Participants	101 women; gynaecological; exc' GI complaints	
Interventions	Preoperative Either: NO TREATMENT; or oral METOCLOPRAMIDE 10mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop time unclear.	
Notes	Side effects not recorded. Unclear how retching categorized. All vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Millo 2001

Methods	Y; A; Y; Y; N; N	
Participants	142 women; hysterectomy; exc' PONV, study drug allergy, opioid, liver disease	
Interventions	Induction AND postoperative Either: DROPERIDOL 0.5mg i.v. then 3mg/60ml PCA; or ONDANSETRON 4mg then 8mg/60ml PCA	

**Millo 2001** (Continued)

Outcomes	All outcomes. Postop 0-24 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Mjahed 1996**

Methods	N; A; Y; N; Y; Y	
Participants	30 children; 15 female; strabismus; ASA1; 4-12 (mean 10)	
Interventions	Preoperative AND postoperative twice Either; oral METOCLOPRAMIDE 5mg thrice; or oral ONDANSETRON 4mg thrice	
Outcomes	Nausea; vomiting. Postop 0-2; 2-12; 12-24; 0-24 hours.	
Notes	Male/female incidences not reported. Retching not categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Moens 1997**

Methods	Y; B; Y; N; N; Y	
Participants	208 adults; 144 women; laparoscopies; 18-75 (mean 47); exc' antiemetic/N&V, NG, <45kg >100kg, pregnancy/breastfeeding	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported.	



**Moens 1997** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Moerman 1995**

Methods	Y; B; Y; N; Y; Y
Participants	120 women; gynaecological; ASA1-3; mean age 38; exc' analgesic, pregnant/breastfeeding, obese or thin, post hoc NG
Interventions	Intraoperative end Either: PLACEBO; or METHYLNALTREXONE 20mg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic Postop 0-6 hours.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Mogensen 1986**

Methods	N; B; Y; N; Y; Y
Participants	30 adults; 23 women; orthopaedic; 50-80 (mean 70); exc' hypertensive, heart/lung/kidney/ CNS disease, alcoholism, psychoactive drug
Interventions	Preoperative AND intraoperative Either: ATROPINE 0.01 mg/kg i.m. then 1mg i.v.; or GLYCOPYRROLATE 5 mcg/kg i. m. then 0.5 mg i.v
Outcomes	Nausea or vomiting. Postop 0-3 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Mogensen 1986** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Monagle 1997**

Methods	Y; B; Y; N; N; N
Participants	96 women; gynaecological; exc' multiple pregnancy, hydatiform, antiemetic, allergy, epilepsy, liver/renal disease
Interventions	Induction Either: METOCLOPRAMIDE 0.4mg/kg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-discharge; discharge-24 hours.
Notes	Nausea commonest 1 hour-discharge, vomiting discharge-24 hours, rescue antiemetic 0-1 hour. Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Morin 1999**

Methods	N; B; Y; N; N; N
Participants	200 women; gynaecological; ASA1,2; mean 35; exc' study drug allergy, psychiatric, pregnancy, antiemetic
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625 or 1.25 or 2.5mg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	No side effects.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Morris 1998

Methods	Y; B; Y; N; N; N
Participants	1074 women; gynaecological; exc' propofol, pregnant/breastfeeding, >100kg, ASA>3, antiemetic, NG
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Mortensen 1982

Methods	N; B; Y; N; N; N
Participants	300 women; gynaecological; exc' >70 years, asthma/COPD, caesarean
Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5 or 5mg i.v.
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Retching categorized as vomiting.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Morton 1997

Methods	Y; B; Y; N; Y; Y
Participants	427 children; female 217; tonsil +/- adenoids; ASA1,2; 2-12 (mean 6)

**Morton 1997** (Continued)

Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.1mg/kg (to 4mg)	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Unclear if vomiters nauseated or categorized once or twice. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Moscovici 1995**

Methods	N; B; Y; N; Y; Y	
Participants	50 adults; various surgeries; no sex data; ASA1-3; 18-78 (mean 42)	
Interventions	Intraoperative Either: PLACEBO; or epidural SCOPOLAMINE 0.25mg	
Outcomes	Nausea; vomiting. Postop 0-2; 2-4; 4-6; 6-24 hours.	
Notes	Nausea and vomiting commonest 0-2 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Movinsky 1999**

Methods	N; B; N; N; Y; Y	
Participants	56 women; laparoscopies	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	Postop recovery (time unclear).	

**Movinsky 1999** (Continued)

Notes	Side effects not recorded.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Munro 1999**

Methods	Y; A; Y; Y; N; N	
Participants	76 children; 39 female; strabismus; ASA1,2; 1-12 (mean 5); exc' allergy, antiemetic	
Interventions	Preoperative Either: PLACEBO; or oral GRANISETRON 20 or 40 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Munro 2002**

Methods	Y; A; Y; N; N; N
Participants	60 children; 21 girls; appendectomy; 5-13 (mean 10)
Interventions	Intraoperative AND postoperative PCA Either: NO TREATMENT then PLACEBO; or DROPERIDOL 10 mcg/kg then 0.2 mcg/kg/ml; or ONDANSETRON 100 mcg/kg then ONDANSETRON 2 mcg/kg/ml
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized. Unclear if vomiters nauseated
<i><b>Risk of bias</b></i>	

**Munro 2002** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Muñoz 1992**

Methods	N; B; N; N; Y; Y
Participants	40 adults; 19 female; eye; ASA1,2; mean 30; exc' <18 years
Interventions	Preoperative Either: oral CLONIDINE 5 mcg/kg; or oral MIDAZOLAM 100 mcg/kg
Outcomes	Vomiting. Postop (time unclear)
Notes	Male/female incidences not reported.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Naguib 1996**

Methods	N; B; Y; Y; Y; Y
Participants	132 adults; 108 women; lap' chole'; 21-68 (mean 37); ASA1,2; 40-101 (mean 73) kg; exc', antiemetic/N&V
Interventions	Induction Either: PLACEBO; or GRANISETRON 3mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg; or TROPISERON 5mg
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Naguib 1998

Methods	N; B; Y; Y; Y; Y	
Participants	90 adults; 65 women; mean age 30; laparoscopies; ASA1,2; exc' hypertension, heart/GI/ CNS disease, drugs affecting LOS tone	
Interventions	Intraoperative end before reversal Either: PLACEBO i.v. and NO TREATMENT i.m.; or EPHEDRINE 0.5 mg/kg i.m. and NO TREATMENT i.v.; or PROPOFOL 0.25 mg/kg i.v. and NO TREATMENT i.m	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear ifretchers and vomiters nauseated or if vomiters retched	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Najeeb 2000

Methods	N; B; Y; N; Y; Y	
Participants	45 adults; 28 women; various surgeries; 25-60 (mean 40)	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5mg i.v.; or GRANISETRON 3mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Najnigier 1997

Methods	N; A; N; N; Y; Y	
Participants	90 adults; 81 female; lap' chole'	
Interventions	Preoperative Either: NO TREATMENT; or PLACEBO ; or oral ONDANSETRON 8mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6; 6-12; 12-24; >24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Nakata 2002

Methods	N; A; Y; N; N; N	
Participants	120 adults; 55 women; general surgery; 16-70 (mean 57); ASA1,2; exc' opioids, convulsions, Parkinson's, drug abuse, psychiatric problems	
Interventions	Intraoperative AND postoperative Either: PLACEBO twice; or DROPERIDOL 2.5mg i.v. then PLACEBO or epidural DROPERIDOL 2.5mg; or PLACEBO then epidural DROPERIDOL 2.5mg/day	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-72 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Nawasreh 2000

Methods	N; B; N; N; Y; Y	
Participants	120 children; no sex data; tonsil + adenoids; 4-14; exc' ASA>1, steroid, infection	
Interventions	Preoperative Either: PLACEBO; or DEXAMETHASONE 1mg/kg (max 16mg) i.v.	
Outcomes	Vomiting. Postop 0-6 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Nelskyla 1998

Methods	Y; B; Y; N; N; N	
Participants	100 women; laparoscopy; ASA 1; exc' BMI>27, study drug allergy	
Interventions	Intraoperative Either: PLACEBO; or GLYCOPYRROLATE 0.4mg AND NEOSTIGMINE 2mg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 3; 0-24 hours.	
Notes	Side effects not recorded.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ng 1997

Methods	N; B; Y; N; Y; Y	
Participants	34 adults; 17 women; colorectal/head & neck; exc' <18, ASA>3, drug abuse, pregnant/breastfeeding	
Interventions	Postoperative PCA Either: NO TREATMENT; or DROPERIDOL 0.1mg i.v./bolus	

**Ng 1997** (Continued)

Outcomes	Rescue antiemetic. Postop 0-48 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Nicolson 1988**

Methods	N; B; Y; N; Y; Y	
Participants	65 children; 23 girls; strabismus; 1-16 (mean 5); ASA1,2	
Interventions	Preoperative Either: oral DIAZEPAM 0.15 mg/kg; or DROPERIDOL 50 or 75 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-1; 0-7; 7-24; 0-24 hours.	
Notes	Outcomes commonest 0-7 hours. Male/female incidences not reported. Side effect “droperidol sedative, no extrapyramidal”. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Nortcliffe 2003**

Methods	Y; B; Y; Y; N; N	
Participants	99 women; caesarean; mean 31; ASA1,2; exc' study drug allergy, hypertension/DM, GI disease, antiemetic	
Interventions	Postoperative Either: PLACEBO; or CYCLIZINE 50mg iv; or DEXAMETHASONE 8mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	

### Nortcliffe 2003 (Continued)

Notes	Retching categorized as vomiting. Unclear if vomiters nauseated. Unclear if nauseated vomiters categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### O'Brien 2003

Methods	Y; B; Y; Y; Y; Y	
Participants	150 boys; hypospadias; 3-5 (mean 4)	
Interventions	Induction Either: PLACEBO; or CYCLIZINE 20mg iv; or ONDANSETRON 0.1mg/kg iv	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### O'Donovan 1984

Methods	N; A; Y; Y; N; N
Participants	140 adults & children; 87 female; dental; ASA1,2; 15-65 (mean 28); exc' ASA>2, antiemetic
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.25 or 1.25mg i.v.
Outcomes	Nausea; vomiting. Postop 0-8; 24 hours.
Notes	Outcomes commonest 0-8 hours. Male/female incidences not reported. Retching categorized as nausea. Unclear if vomiters nauseated (or retched) or categorized once or twice
<i>Risk of bias</i>	

**O'Donovan 1984** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Oddby-Muhrbeck 2002**

Methods	N; B; Y; Y; N; N	
Participants	68 women; ASA1,2; mastectomy	
Interventions	Induction Either: PLACEBO; or CLONIDINE 2 mcg/kg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-5; 5-24; 0-24 hours.	
Notes	Side effects "no difference". Categorized by severest symptom (vomiting>retching>nausea) . I combined retching and vomiting	

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Olutoye 2003**

Methods	Y; A; Y; Y; N; N.	
Participants	216 children; 55 girls; various surgeries; ASA1,2; 2-12 (mean 6); exc' ASA>2, reflux, vomiting, obese, emergency, antiemetic	
Interventions	Intraoperative Either: DOLASETRON 45 or 175 or 350 or 700 mcg/kg iv; or ONDANSETRON 100 mcg/kg iv	
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Olutoye 2003** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Omais 2002**

Methods	Y; A; Y; N; Y; Y	
Participants	60 adults; 28 women; orthopaedic; ASA1,2; mean 41	
Interventions	Induction Either: PLACEBO; or epidural MORPHINE 0.6mg; or NEOSTIGMINE 60 mcg; or both	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Oshima 2002**

Methods	Y; B; Y; Y; Y; Y	
Participants	90 adults; 51 women; tympanoplasty; ASA1,2; 18-64 (mean 14); exc' menstrual, asthma, antiemetic	
Interventions	Preoperative Either: PLACEBO; or TANDOSPIRONE 10 or 30mg	
Outcomes	All outcomes. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized separately. I combined retching and vomiting	
Risk of bias		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Ostman 1990

Methods	Y; B; Y; N; Y; Y	
Participants	60 women; gynaecological; ASA1,2	
Interventions	Intraoperative Either: 5% dextrose; or 10% intralipid	
Outcomes	All outcomes. Postop 0-4 hours.	
Notes	No side effects. I combined retching and vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ozalp 1997

Methods	N; B; N; N; Y; Y	
Participants	150 adults; 78 women; abdominal; ASA1,2	
Interventions	Postoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.; or TROPISETRON 5mg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-18; 0-36 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ozcan 2003

Methods	N; B; Y; N; Y; Y	
Participants	50 children; 26 female; strabismus; ASA1,2; 4-15 (mean 8); exc' motion sickness/PONV	
Interventions	Preoperative Either: NO TREATMENT; or ATROPINE 0.015mg/kg iv + DIAZEPAM 0.15mg/kg iv	

**Ozcan 2003** (Continued)

Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ozmen 2002**

Methods	N; B; N; N; Y; Y	
Participants	60 adults; 42 women; lap' chole'; ASA1,2; mean 45	
Interventions	Induction Either: DROPERIDOL 1.25mg iv +/- GRANISETRON 3mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 15; 30 minutes; 1; 2; 4; 12; 24 hours.	
Notes	Outcomes commonest at 1 hour. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Oztekin 2003**

Methods	Y; B; Y; Y; Y; Y	
Participants	44 women; hysterectomy; ASA 1,2; 18-65 (mean 45); exc' PONV/motion sickness, study drug allergy	
Interventions	Intraoperative Either: DROPERIDOL 15 mcg/kg iv; or TROPISETRON 0.05mg/kg	
Outcomes	Vomiting. Postop immediate; 2; 6; 12; 24; 48 hours.	

**Oztekin 2003** (Continued)

Notes	Vomiting commonest at 6 hours. Side effect “no difference”. Selective reporting	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Paech 1995**

Methods	Y; A; Y; N; N; N	
Participants	270 women; gynaecological; exc' bowel, N&V, antiemetic	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 2.5mg i.v.; or ONDANSETRON 8mg	
Outcomes	Nausea; vomiting; rescue antiemetic. PACU;PACU discharge-6; 6-24; 0-24 hours.	
Notes	Nausea commonest 6-24 hours. Unclear if vomiters/retchers nauseated or categorized twice. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Paech 1997**

Methods	N; B; Y; N; N	
Participants	100 women; gynaecological; exc' clonidine/opioid	
Interventions	Induction AND intraoperative Either: PLACEBO; or epidural CLONIDINE 2 or 3 or 4 mcg/ml	
Outcomes	All outcomes Postop 0-24hours.	
Notes	Side effects “no difference”.	
Risk of bias		
Bias	Authors' judgement	Support for judgement



**Paech 1997** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Paech 2002**

Methods	Y; A; Y; N; N; N
Participants	144 women; gynaecological; exc' antiemetic, N&V, study drug allergy
Interventions	Induction Either: NO TREATMENT; or DOLASETRON 12.5 mg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 0-4; 0-6; 6-24 hours.
Notes	Outcomes commonest 0-6 hours. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice. Graph/text discrepancies

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Paech 2003**

Methods	Y; A; Y; N; Y; N
Participants	120 women; gynaecological; mean 49; exc' N&V, antiemetic, study drug contraindication
Interventions	Induction AND intraoperative Either: NO TREATMENT then DOLASETRON 12.5mg iv; or ONDANSETRON 4mg or TROPISETRON 2mg then NO TREATMENT
Outcomes	All outcomes. Postop 0-24 hours.
Notes	No side effects. Retching categorized as vomiting.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Palme 2000

Methods	Y; B; Y; Y; Y; Y
Participants	50 children; 26 female; tonsil +/- adenoids; exc' steroid contraindication
Interventions	Postoperative day 1-7 Either: PLACEBO; or oral DEXAMETHASONE 0.5mg/kg
Outcomes	Nausea or vomiting. Postop day one; two; three; four; five; two to eight.
Notes	Male/female incidences not recorded. Outcomes commonest days 2-8. Side effects not recorded

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Pan 1998

Methods	N; B; Y; N; Y; Y
Participants	80 women; caesarean; ASA1
Interventions	Intraoperative Either: PLACEBO; or intrathecal CLONIDINE 150 mcg; or NEOSTIGMINE 50 mcg; or both
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Unclear how retching categorized.

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Pan 2001

Methods	Y; A; Y; N; N; N
Participants	164 women; Caesarean; exc' breastfeeding, psychiatric, antiemetic

**Pan 2001** (Continued)

Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pandit 1986**

Methods	N; B; Y; Y; Y; Y	
Participants	80 women; laparoscopies; ASA1,2	
Interventions	Preoperative AND induction Either: PLACEBO twice; or PLACEBO then METOCLOPRAMIDE 10mg i.v.; or oral CIMETIDINE 300mg then PLACEBO; or both	
Outcomes	All outcomes. Postop (time unclear)	
Notes	No side effects. Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pang 2002**

Methods	Y; A; Y; Y; Y; Y	
Participants	40 adults; 22 women; arthroplasties; ASA1,2; mean 70; exc' study drug allergy, liver/heart/renal disease, drug abuse, obese	
Interventions	Postoperative PCA Either: PLACEBO; or METOCLOPRAMIDE 1mg/ml	

**Pang 2002** (Continued)

Outcomes	Nausea; vomiting. PACU (time unclear); 0-24; 24-48 hours.	
Notes	Outcomes commonest 0-24 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Papadimitriou 2001**

Methods	Y; B; Y; Y; Y; Y	
Participants	120 women; gynaecological; 27-43 (mean 36); ASA1,2; exc' pregnant, GI/liver disease, motion sickness, Parkinson's, antiemetic, menstrual	
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v.; or METOCLOPRAMIDE 5mg i.v. AND TROPISETRON 5mg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Unclear how retching categorized. Unclear if nauseated vomiters categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pappas 1998**

Methods	Y; B; Y; Y; Y; Y	
Participants	130 children; no sex datum; tonsil +/- adenoid; ASA1,2; 2-12 (mean 6); exc' antiemetic, antihistamine, steroid, psychoactive drug, DM	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 1mg/kg (max 25mg) i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24; 0-24 hours.	

**Pappas 1998** (Continued)

Notes	Male/female incidences not reported. Retching categorized separately. I combined retching and vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Park 1996**

Methods	Y; B; Y; Y; N; N	
Participants	44 adults; 23 female; hemiarthroplasty; >50 (mean 69); ASA1-3; exc' allergy, various drugs, heart/liver disease, regional anaesthesia	
Interventions	Preoperative AND postoperative twice Either; PLACEBO thrice; or oral CLONIDINE 5 mcg/kg thrice	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effect "clonidine sedative". Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Parks 1999**

Methods	N; B; Y; N; N; N.
Participants	90 adults, no sex data, arthroplasty, ASA1-3, >60
Interventions	Induction AND postoperative thrice Either: PLACEBO; or ONDANSETRON 16mg four times
Outcomes	See notes.
Notes	Side effects not recorded. No numbers reported.
Risk of bias	

**Parks 1999** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Parnis 1992**

Methods	N; B; Y; Y; Y; Y
Participants	200 children; 122 girls; mean 4; ASA1,2; various surgeries; exc' anticonvulsant/sedative, GI disease
Interventions	Preoperative Either: PLACEBO; or oral DIAZEPAM 0.5mg/kg ; or MIDAZOLAM 0.25 or 0.5mg/kg
Outcomes	Vomiting; rescue antiemetic. Postop 0-1; 1-4; 0-24 hours.
Notes	Incidences not reported. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pascucci 1996**

Methods	N; B; N; N; Y; Y
Participants	60 adults; no sex data; lap' chole'; 22-84; exc' NG, liver/GI disease, DM, infection
Interventions	Preoperative AND intraoperative Either: ONDANSETRON 4mg i.v. then PLACEBO; or PLACEBO then TROPISETRON 5mg
Outcomes	Nausea; vomiting. Postop 0-1; 0-4; 0-8; 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Patel 1997

Methods	Y; B; Y; N; N; N	
Participants	433 children; 158 girls; various surgeries; 2-12 (mean 5); exc' antiemetic, liver/renal disease, PONV	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.1 mg/kg (max 4mg) i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Rescue antiemetic only 0-2 hours. Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Patterson 1991

Methods	N; B; N; N; Y; Y	
Participants	35 women; gynaecological/breast; ASA1,2; mean 41	
Interventions	Preoperative Either: NO TREATMENT; or buccal PROCHLORPERAZINE 3mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-4; 4-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear if vomiters nauseated or categorized once or twice. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Patterson 1993**

Methods	N; B; N; N; Y; Y	
Participants	52 women; gynaecological/breast; ASA1,2; exc' study drug allergy, pregnant/breastfeeding	
Interventions	Preoperative Either: NO TREATMENT; or buccal PROCHLORPERAZINE 6mg	
Outcomes	All outcomes. Postop 0-1; 1-4; 4-24; 0-24 hours.	
Notes	No side effects. Unclear how retching categorized or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Paul 1985**

Methods	N; B; N; N; Y; Y	
Participants	160 adults; 115 women; various surgery	
Interventions	Intraoperative Either: NO TREATMENT; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	Vomiting. Postop 0-4 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	High risk	C - Inadequate

**Paventi 2001**

Methods	N; B; Y; Y; Y; Y	
Participants	60 adults; 28 women; lap' chole'; ASA1,2; exc' opioid/antiemetic/N&V, reflux, drug abuse	
Interventions	Induction Either: ONDANSETRON 4 or 8mg i.v.	



**Paventi 2001** (Continued)

Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-12; 12-18; 18-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Inconsistent data. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Paxton 1995**

Methods	Y; B; Y; N; N; N	
Participants	140 women; gynaecological	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg	
Outcomes	Nausea; vomiting; rescue antiemetics. Postop 0-2; 2-6; 6-24; 0-24 hours.	
Notes	Nausea only 0-24 hours. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Paxton 1995b**

Methods	N; B; Y; N; Y; Y	
Participants	60 children; girls 28; 3-14 (mean 10); otoplasty	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or ONDANSETRON 0.1mg/kg	
Outcomes	Vomiting. Postop 0-24 hours.	

**Paxton 1995b** (Continued)

Notes	Male/female incidences not reported. Side effects nodal rhythm with ondansetron. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pearman 1994**

Methods	N; B; Y; N; N; N	
Participants	a) 1169 women; various surgeries; ASA1,2; 18-70; exc' pregnant/breastfeeding, NG, obese; b) 468 men & boys; >12; ASA1,2; exc' antiemetic, liver biopsy, NG, obese	
Interventions	Induction a) Either: PLACEBO; or ONDANSETRON 1 or 4 or 8mg i.v. b) Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; Vomiting. Postop 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Peixoto 2000**

Methods	N; B; Y; Y; Y; Y	
Participants	90 women; gynaecological; 18-70 (mean 46); ASA1,2; exc' <45 >90 kg, opioid	
Interventions	Induction Either: DROPERIDOL 1.25mg i.v.; or ONDANSETRON 4mg; or both	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects. Unclear how retching categorized.	

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Pendeville 1993

Methods	N; B; Y; N; Y; Y
Participants	104 children; no sex data; strabismus; ASA1,2; mean 5.
Interventions	Induction AND intraoperative Either: PLACEBO or DROPERIDOL 10 mcg/kg i.v. then NO TREATMENT; or NO TREATMENT or DROPERIDOL 10 mcg/kg then METOCLOPRAMIDE 0.1mg/kg
Outcomes	Nausea; vomiting. PACU; 0-1; 6-12; 24 hours.
Notes	Nausea and vomiting commonest 0-1 hour. Male/female incidences not recorded. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Pertusa 1996

Methods	N; B; Y; Y; Y; Y
Participants	100 adults; 63 women; lap' chole'; 20-70 (mean 53); ASA1-3; exc' jaundice/cholecystitis, study drug allergy, steroid, renal/liver/cardiac disease, ASA>3, post-hoc conversion
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

**Pertusa 1996** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Peters 1982**

Methods	N; B; Y; Y; Y; Y	
Participants	199 children >1 (mean 7.5); ENT	
Interventions	Preoperative Either: LORAZEPAM 0.05mg/kg oral; or TRIMEPRAZINE 3mg/kg oral	
Outcomes	Vomiting. Postop at 4 hours.	
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Philip 2000**

Methods	N; B; Y; Y; Y; Y	
Participants	1030 adults; 722 women; various surgeries; >17 (mean 37); exc' antiemetic, disease, obese, liver/GI surgery	
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 12.5 or 25 or 50 or 100mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Unclear if vomiters nauseated or categorized once or twice. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Philip 2000** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Phillips 1993**

Methods	N; B; Y; Y; Y; Y	
Participants	120 women; laparoscopies; ASA1-3; exc' pregnancy, alcohol, opioid/antiemetic	
Interventions	Preoperative Either: PLACEBO; or GINGER 1g oral; or METOCLOPRAMIDE 10mg oral	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Side effect “no difference”. Unclear how retching categorized or if nauseated vomiters categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Piper 2001**

Methods	Y; B; Y; N; Y; Y	
Participants	150 women; hysterectomy; ASA1,2; mean 50; exc' lung/heart/liver/kidney disease, fever, antiemetic, obese, N&V, alcoholic	
Interventions	Preoperative AND intraoperative Either: PLACEBO then NO TREATMENT/METOCLOPRAMIDE 20mg i.v.; or oral DOLASETRON 50mg then NO TREATMENT	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated. Patients categorized by severest symptom	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Piper 2002

Methods	Y; B; Y; N; Y; N	
Participants	387 adults; 288 women; lap' chole'; mean 53; ASA1-3; exc' antiemetic, obese, cardiac, Parkinson's disease, study drug allergy, alcohol abuse	
Interventions	Induction Either: PLACEBO; or DOLASETRON 12.5mg iv; or METOCLOPRAMIDE 20mg	
Outcomes	All outcomes. Postop 0-4; 4-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. I combined retching and vomiting. Unclear ifretchers/vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Piper 2003

Methods	Y; A; Y; Y; Y; Y	
Participants	150 women; hysterectomy/breast; ASA1-3; mean 53; exc' study drug allergy, GI/heart/renal/liver/CNS disease, pregnant/menstrual	
Interventions	Preoperative Either: PLACEBO/DEXAMETHASONE 8mg iv AND oral DOLASETRON 50mg	
Outcomes	All outcomes. Postop 0-2; 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pitkanen 1993**

Methods	Y; B; Y; Y; Y; Y	
Participants	54 adults; 39 women; orthopaedic; ASA1-3	
Interventions	Intraoperative Either: PLACEBO; or TROPISETRON 5mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-6; 7-12; 13-18; 19-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Pitkanen 1997**

Methods	Y; B; Y; N; Y; Y	
Participants	73 adults; no sex data; ASA1-3; 50-85 (mean 65); orthopaedic	
Interventions	Induction AND postoperative twice Either: PLACEBO thrice; or METOCLOPRAMIDE 20mg i.v. thrice; or ON-DANSETRON 8mg thrice	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ploner 1997**

Methods	Y; A; Y; N; Y; Y
Participants	120 adults; 75 women; various operations; exc' <18 >75, ASA>2, BMI>28, heart disease, antiemetic/N&V
Interventions	Preoperative AND intraoperative Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or ON-DANSETRON 4mg i.v. then PLACEBO
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Polati 1995**

Methods	N; B; Y; N; Y; Y
Participants	90 adults; 71 women; general/gynaecological; mean 45; exc' ASA>3, <21 >75 years, obese, PONV, liver/renal/heart disease, pregnant/breastfeeding, anxiety, antiemetic
Interventions	Preoperative AND intraoperative Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or ON-DANSETRON 4mg i.v. then PLACEBO
Outcomes	Nausea; vomiting. Postop 0-6 days.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Pongrojpraw 2003

Methods	N; B; Y; Y; Y; Y	
Participants	80 women; gynaecological; 20-50 years; exc' pregnanct liver/GI disease, opioids/alcohol/antiemetic, post-hoc conversion	
Interventions	Preoperative Either: PLACEBO; or oral GINGER 1g	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 2; 4; 0-24 hours.	
Notes	Side effects not reported. Unclear if vomiters nauseated or categorized once or twice. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ponnudurai 1986

Methods	N; B; Y; N; Y; Y.	
Participants	153 women; gynaecological; exc' disease, psychoactive/sedative drugs	
Interventions	Preoperative Either: oral BROMAZEPAM 6mg; or oral LORAZEPAM 2mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Prescott 1976

Methods	N; B; Y; N; N; N	
Participants	158 adults; 90 female; mean 43; hernia/varicose veins; exc' short operations	

**Prescott 1976** (Continued)

Interventions	Preoperative Either: ATROPINE 0.6 mg +/- DIAZEPAM 5 or 10mg	
Outcomes	Nausea; vomiting. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 3-24 hours. Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Principi 1996**

Methods	N; B; Y; N; Y; Y	
Participants	90 women; gynaecological; ASA1,2; 21-73 (mean 49); exc' renal/liver/cardiac/blood/endocrine disease, pregnant/breastfeeding, antiemetic, NG	
Interventions	Preoperative ten minutes Either: PLACEBO; or ONDANSETRON 4 or 8mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pueyo 1996**

Methods	N; B; Y; Y; Y; Y	
Participants	100 women; various surgeries; ASA1,2; 18-65 (mean 48); exc' antiemetic, obese, study drug allergy	
Interventions	Induction then postoperative Either: PLACEBO thrice; or DROPERIDOL 2.5mg i.v. then PLACEBO/ONDANSETRON 4mg then DROPERIDOL 1.25mg; or ONDANSETRON 4mg AND	

**Pueyo 1996** (Continued)

	PLACEBO twice	
Outcomes	All outcomes. Postop 0-2; 0-12; 0-24; 0-48 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters/retchers nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Pugh 1996**

Methods	N; B; N; N; Y; Y	
Participants	60 adults; female 37; ASA1-3; neurosurgery; exc' antiemetic	
Interventions	Intraoperative Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 8mg	
Outcomes	All outcomes. Postop 0-48 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting, unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Purhonen 1997**

Methods	N; B; Y; Y; N; N	
Participants	150 women; gynaecological; ASA1-3; mean 50; exc' antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or TROPISSETRON 5mg	
Outcomes	All outcomes. Postop 0-2; 2-6; 6-24; 24-48; 0-48 hours.	

**Purhonen 1997** (Continued)

Notes	Side effects period unclear. Participants categorized by severest symptom (vomit>retch>nausea). Unclear ifretchers/vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Purhonen 2003**

Methods	Y; A; Y; N; N; N	
Participants	100 women; gynaecological; ASA1,2; mean 37; exc' N&V/antiemetic, pregnant/breast-feeding, obese, lung disease	
Interventions	Intraoperative AND postoperative Either: OXYGEN 30% or 80%	
Outcomes	All outcomes PACU (time unclear); discharge-24; 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Purhonen 2003b**

Methods	Y; B; Y; N; N; N
Participants	100 women; breast; ASA1-3;
Interventions	Intraoperative AND postoperative Either: OXYGEN 30% or 50%
Outcomes	All outcomes. Postop 0-2; 2-6; 6-24; 0-24 hours.
Notes	Retching categorized as vomiting.
<i>Risk of bias</i>	

**Purhonen 2003b** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Pérez 2000**

Methods	N; B; Y; Y; Y; Y
Participants	100 adults; 58 women; elective surgery; ASA1-3; 17-80 (mean 42); exc' antiemetic, N&V, renal/liver disease, reflux
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting. Postop 0-1; 1-12; 12-24; 0-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Quaynor 2002**

Methods	N; A; Y; Y; N; N
Participants	122 adults; 93 women; lap' chole'; ASA1,2; exc' antiemetic, <18
Interventions	Intraoperative Either: METOCLOPRAMIDE 20mg i.v.; or ONDANSETRON 8mg
Outcomes	Vomiting; nausea or vomiting; rescue antiemetic. Postop 0-6; 6-12; 12-24; 0-24 hours.
Notes	Male/female incidences not reported. Retching categorized as vomiting. Unclear if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Quiroga 2003

Methods	N; A; Y; Y; Y; Y	
Participants	45 women; caesarean; ASA1,2; mean 26; exc' ASA>2, CNS/spinal disease, opioid/naloxone, epidural contraindication/vein/dural puncture, post-hoc surgery	
Interventions	Postoperative Either: PLACEBO; or epidural CLONIDINE 2 mcg/kg/day	
Outcomes	Nausea; vomiting; rescue antiemetics. Postop 0-48 hours.	
Notes		
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Rajeeva 1999

Methods	N; A; Y; N; Y; Y	
Participants	41 women; laparoscopy; 20-40 (mean 29); ASA1; exc' pregnant, obese, motion sickness/ PONV, antiemetic, steroid, DM, HH	
Interventions	Induction Either: DEXAMETHASONE 8mg i.v. + ONDANSETRON 4mg; or ONDANSETRON 8mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-24; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ramirez 2001

Methods	N; B; Y; Y; Y; Y
Participants	104 women; gynaecological; ASA1,2; 18-65 (mean 43); exc' obese, heart/lung/renal/liver/CNS/GI disease, PONV, N&V, antiemetic
Interventions	Intraoperative end Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg
Outcomes	Nausea; vomiting. Postop 0-6; 7-24; 13-18; 19-24; 0-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Raphael 1993

Methods	N; A; Y; N; N; N
Participants	123 women; laparoscopies; exc' pregnant/breastfeeding, drug
Interventions	Induction Either: METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6; 6-24; 0-24 hours.
Notes	Nausea and vomiting only 0-6 hours. Retching categorized as vomiting. Unclear if vomiters nauseated

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Ratra 1968

Methods	N; B; N, N; Y; Y
Participants	252 women; gynaecological; 16-50; 28-68kg; exc' surgery > 10 min, disease affecting outcome, study drug allergy

**Ratra 1968** (Continued)

Interventions	Preoperative Either: No treatment; or ATROPINE 0.65mg i.m.; or CHLORPROMAZINE 25mg; or both	
Outcomes	Nausea; vomiting; nausea or vomiting. Postoperatively at 0-1; 1-6; 0-6 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Reihner 2000**

Methods	Y; B; Y; Y; N; N	
Participants	216 women; breast; ASA1,2; 18-80 (mean 54); exc' pregnant, obese, steroid	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or ONDANSETRON 8mg	
Outcomes	All outcomes. Postop 0-2; 0-24 hours.	
Notes	Unclear how retching categorized. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Reinhart 1994**

Methods	N; B; Y; N; N; N	
Participants	39 adults; 18 women; ENT; 18-65 (mean 44); ASA1,2; exc' anticholinergic/antihistamine, glaucoma, GI/renal tract obstruction	
Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE 1.5mg patch	



**Reinhart 1994** (Continued)

Outcomes	Nausea or vomiting. Postop 0-12; 12-36 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Richardson 1979**

Methods	N; A; Y; Y; Y; Y	
Participants	142 children; general surgery; >30kg; exc' unsuitable for study	
Interventions	Preoperative Either: DIAZEPAM 0.3mg/kg oral; or FLUNITRAZEPAM 0.03 mg/kg	
Outcomes	Vomiting. Postop 24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Richardson 1997**

Methods	Y; B; Y; N; N; N	
Participants	30 women; lap' steri'; ASA1,2; exc' alcoholism, drug abuse, sedative, antidepressant, antiepileptic, other surgery, study drug allergy	
Interventions	Preoperative Either: PLACEBO; or MIDAZOLAM 0.04 mg/kg i.v.	
Outcomes	Rescue antiemetic. Postop 0-5 hours.	
Notes	Side effects not recorded.	

**Richardson 1997** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Riley 1998**

Methods	Y; A; Y; Y; Y; Y	
Participants	160 women; hysterectomy; ASA1,2; exc' <30 >45 years, ASA>2, antiemetic, drug abuse	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects not reported.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Rita 1981**

Methods	N; B; N; N; N; N	
Participants	200 children, 1-15 years, ASA 1&2, orthopaedic	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 5 mcg/kg i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Rita 1981** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Roberts 1995**

Methods	N; B; Y; Y; N; N
Participants	45 adults; 19 women; laminectomy; exc pregnant, HH
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL bolus 0.15mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-48 hours.
Notes	Male/female incidences not reported. Side effect "droperidol sedative". Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Rodola 1995**

Methods	N; B; Y; N; Y; Y
Participants	120 adults; 62 women; orthopaedic; 18-40 (mean 26)
Interventions	Preoperative Either: NO TREATMENT; or DIAZEPAM 0.2mg/kg i.m.; or PROMETHAZINE 1mg/kg
Outcomes	Nausea; vomiting. Postop 0-1; 0-24 hours.
Notes	Male/female incidences not reported. Side effect "sedation". Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Rodrigo 1994**

Methods	N; B; Y; Y; N; N	
Participants	80 adults; 55 women; dental; ASA1,2; 18-48 (mean 25); exc' men>120 kg, women > 100kg, pregnant/breastfeeding, study drug allergy	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 0-4; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Rodrigo 1996**

Methods	N; A; Y; N; N; N	
Participants	34 adults; 11 women; maxillofacial; 19-68 (mean 40); exc' men>120kg, women>100kg, pregnant/breastfeeding	
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 0-4; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Rohling 1995

Methods	N; B; Y; N; Y; Y
Participants	60 adults; no sex data/age data; ASA1,2; maxillofacial.
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or TROPISETRON 5mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Rose 1994b

Methods	N; A; Y; Y; Y; Y
Participants	90 children; 44 female; strabismus; ASA1,2
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or ONDANSETRON 0.15mg/kg
Outcomes	Vomiting; rescue antiemetic Postop 0-4; 0-24 hours.
Notes	Rescue antiemetic only 0-4 hours. Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

## Rose 1996

Methods	N; A; Y; Y; N; N	
Participants	212 children; 96 girls; tonsillectomy; ASA1,2; 2-12 (mean 7); exc' POV, study drug allergy	
Interventions	Induction AND postoperative Either: PLACEBO twice; or METOCLOPRAMIDE 0.25mg/kg i.v. or ON-DANSETRON 0.15mg/kg i.v. then PLACEBO; or either drug twice	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

## Rose 1996b

Methods	N; B; Y; Y; N; N	
Participants	140 children; 60 female; tonsil +/- adenoid; ASA1,2; 1-12 (mean 6); exc' PONV, motion sickness, reflux, study drug allergy	
Interventions	Preoperative Either: PLACEBO; or oral ONDANSETRON 0.075 or 0.15mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-18; 18-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Rothenberg 1991**

Methods	N; B; Y; N; N; N	
Participants	100 women; gynaecological; ASA1,2; exc' hypertension/heart disease, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.04mg/kg i.m.; EPHEDRINE 0.5mg/kg	
Outcomes	Vomiting; nausea or vomiting; rescue antiemetic. Postop 0-2; 2-24 hours.	
Notes	Vomiting only 2-24 hours. Nausea or vomiting and rescue antiemetic only 0-2 hours. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Rothenberg 1998**

Methods	Y; B; Y; Y; N; N	
Participants	100 women; gynaecological; ASA1,2; exc' antiemetic, steroid, ulcer, DM, study drug contraindication	
Interventions	Intraoperative Either: DEXAMETHASONE 0.17 mg/kg i.v.; or DROPERIDOL 0.02 mg/kg	
Outcomes	All outcomes. Postop 0-2; 2-8; 8-24; 0-24 hours.	
Notes	Nausea commonest 0-2 hours, vomiting 2-8 hours. Side effects not reported. Retching categorized as vomiting. Unclear if vomiters nauseated. Categorized by severest symptom	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Ruiz 1999

Methods	N; B; Y; Y; N; N	
Participants	56 adults; women 13; lap' chole'; ASA1,2; exc' post hoc conversion	
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea or vomiting. Postop 0-72 hours.	
Notes	Male/female incidences not reported.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Rusch 1999

Methods	Y; B; Y; N; N; N	
Participants	120 women; laparoscopy; 18-55 (mean 34); ASA1,2; exc' study drug allergy, pregnancy, GI disease, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 12.5mg i.v.; or METOCLOPRAMIDE 10mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Rusch 2002

Methods	N; A; Y; N; N; N	
Participants	170 women; gynaecological; 18-50 (mean 35); exc' ASA>2, <18 >50, pregnant/breastfeeding, study drug allergy, antiemetic, BM><30%, post-hoc protocol violation	



**Rusch 2002** (Continued)

Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 2.5mg i.v.; or METOCLOPRAMIDE 10mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Russell 1996**

Methods	N; B; Y; Y; N; N	
Participants	40 women; caesarean; exc' liver/renal/psychiatric disease, pre-eclampsia, epilepsy, drug abuse, antiemetic, breastfeeding	
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL 10mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-20 hours.	
Notes	No side effects. Unclear if vomiters/retchers nauseated. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Rust 1994**

Methods	N; B; Y; N; Y; Y	
Participants	2158 women; 12-75 (mean 45); ASA1-3; various surgeries; exc' pregnant/breastfeeding, obese, N&V/antiemetic, NG, liver/renal disease	
Interventions	Preoperative Either: PLACEBO; or oral ONDANSETRON 4 or 8 or 16mg	

**Rust 1994** (Continued)

Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sadhasivam 1999**

Methods	Y; B; Y; N; Y; Y	
Participants	54 women; mastectomy; ASA1,2; exc' obese, gastric obstruction, antiemetic	
Interventions	Intraoperative end Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-2; 2-6; 6-24; 0-24 hours.	
Notes	Unclear how retching categorized or if vomiters nauseated.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sadhasivam 2000**

Methods	Y; A; Y; Y; Y; Y	
Participants	180 children; 95 female; ASA1,2; 2-12 (mean 7); strabismus; exc' antiemetic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 25/50/75/100/150 mcg/kg i.v.	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 0-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized. Unclear if nauseated vomiters categorized once or twice	

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

## Sahjpaul 2003

Methods	Y; B; Y; Y; Y; N	
Participants	30 adults; 16 women; subdural electrodes; mean 37; exc' headache/pain syndrome, study drug allergy	
Interventions	Preoperative AND postoperative 6 hourly Either: PLACEBO each time; or DEXAMETHASONE 10mg iv then 4mg 6 hourly for 1 day, 2mg 6 hourly for 1 day, 2mg 12 hourly for 1 day	
Outcomes	See notes.	
Notes	Incidences not reported. Male/female incidences not recorded. No side effects	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

## Salmenpera 1992

Methods	N; A; Y; N; Y; Y	
Participants	100 adults; 49 women; various surgeries; ASA1,2; exc' drugs.	
Interventions	Induction AND intraoperative Either: ATROPINE 6 then 15 mcg/kg i.v.; or GLYCOPYRROLATE 3 then 7.5 mcg/kg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-24; 0-24 hours	
Notes	Retching categorized as nausea. Unclear if vomiters nauseated or categorized once or twice. Vomiting and rescue antiemetic commonest 0-2 hours	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Salmenpera 1992** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Sanansilp 1998**

Methods	Y; B; Y; N; Y; N
Participants	97 women; caesarean; ASA1,2; mean 29; exc <sup>3</sup> convulsions/Parkinsonism, drug abuse, psychiatric
Interventions	Intraoperative twice Either: PLACEBO or epidural DROPERIDOL 2.5mg then NO TREATMENT; or epidural PLACEBO then DROPERIDOL 2.5mg i.v
Outcomes	All outcomes. Postop 0-24 hours.
Notes	No side effects. Unclear how retching categorized. Vomitters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sanansilp 2002**

Methods	N; B; Y; Y; Y; Y.
Participants	94 women; hysterectomy; ASA1,2; mean 43; exc <sup>3</sup> asthma, study drug allergy, drug abuse, psychiatric/convulsions/parkinsonism, GI disease
Interventions	Postoperative PCA. Either: PLACEBO; or DROPERIDOL 0.0625mg/bolus
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-18; 18-24; 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomitters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Sanchez 2002

Methods	Y; B; Y; Y; Y; Y	
Participants	90 women; gynaecological; ASA1,2; 18-65 (mean 48); exc’ opioids/NSAID/steroids/antiemetic, study drug allergy	
Interventions	Induction AND postoperative Either: DROPERIDOL 1.25mg iv AND DEXAMETHASONE 8mg/ONDANSETRON 4mg then DROPERIDOL 1.25mg; or DEXAMETHASONE 8mg AND ONDANSETRON 4mg then PLACEBO	
Outcomes	All outcomes. Postop 0-2; 2-12; 12-24; 24-48; 0-48 hours.	
Notes	Nausea commonest 2-12 hours, vomiting 12-24 hours. Side effect “no difference”. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Sandhya 1994

Methods	N; B; N; N; Y; Y	
Participants	32 women; STOP; ASA1	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.2mg/kg i.v.; or PROMETHAZINE 0.5mg/kg	
Outcomes	Vomiting; nausea or vomiting. Postop 0-4 hours.	
Notes	Side effect “promethazine sedative”. Data inconsistent.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors’ judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Saur 1996**

Methods	N; B; Y; N; Y; Y
Participants	51 women; gynaecological; 18-75 (mean 47); exc' <18 >75 years, >100kg, antiemetic/N&V, ASA>3, renal disease, drug abuse, study drug allergy
Interventions	(a) Preoperative Either: PLACEBO; or oral ONDANSETRON 8 or 16mg (b) Preoperative AND postoperative twice Either: PLACEBO; or oral ONDANSETRON 8 or 16mg thrice
Outcomes	Nausea; vomiting. Postop 0-24 hours.
Notes	Side effects not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Schettini 1989**

Methods	N; B; N; N; N; N
Participants	100 adults
Interventions	Preoperative Either: PLACEBO; or DROPERIDOL 5mg i.v.; or SULPIRIDE 50 or 100mg
Outcomes	Vomiting; nausea or vomiting. Postop 0-48 hours.
Notes	Male/female incidences not recorded. Methodology unclear, data inconsistent

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Schlager 2000

Methods	N; B; Y; N; Y; Y
Participants	40 children; 19 female; 3-12 (mean 6); ASA1; strabismus; exc' N&V or drug
Interventions	Preoperative Either: PLACEBO; or DIMENHYDRINATE 50 mg suppository
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Scholtes 1991

Methods	N, B, Y, N, Y; Y
Participants	64 adults; 40 women; middle ear; exc' <18 >60, neuroleptic, pregnant, study drug allergy, renal/heart disease
Interventions	Preoperative thrice then intraoperative Either: PLACEBO; or ALIZAPRIDE oral 50mg thrice then 50mg i.v
Outcomes	Nausea, vomiting, nausea or vomiting. Postop 0-8; 8-24; 24-30; 30-48 hours
Notes	Male/female incidences not given. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice. Nausea or vomiting commonest 0-8 hours

#### *Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Scholz 1998

Methods	N; B; Y; N; Y; Y	
Participants	842 adults; 622 women; ASA1-3; 18-75; various surgeries; exc' ASA>3, pregnant, allergy, NG, drug affecting outcome, drug abuse	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.; or TROPISETRON 2mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Schuh 1987

Methods	N; A; N; N; Y; Y	
Participants	40 adults; 31 women; cholecystectomy; ASA1,2; mean 49; exc' >70, glaucoma, anti-cholinesterase, psychiatric	
Interventions	Preoperative AND intraoperative Either: PLACEBO then DROPERIDOL 7.5mg i.v.; or SCOPOLAMINE patch then PLACEBO	
Outcomes	All outcomes Postop 0-1; 1-2; 2-6; 6-18; 0-18 hours.	
Notes	No side effects. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Schultz 2003

Methods	Y; A; N; N; Y; N	
Participants	143 women; gynaecological; mean 47; exc’ pregnant, cancer last 5 years, antiemetic, acu- pressure, neuropathy	
Interventions	Preoperative twice Either: PLACEBO tice; or PLACEBO then DROPERIDOL 1.25mg iv; or ACUPRES- SURE then PLACEBO/DROPERIDOL 1.25mg	
Outcomes	Nausea; vomiting. Postop day one; day two; 0-36 hours.	
Notes	Vomiting commonest day one. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Schulz-Stubner 2001

Methods	Y; A; Y; Y; Y; Y	
Participants	50 adults; 23 women; vitrectomy; exc' ASA>3, renal/CNS/cardiac disease, pregnant, drug abuse	
Interventions	Induction Either: PLACEBO; or MAGNESIUM 50mg/kg i.v.	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Scuderi 1997

Methods	Y; B; Y; N; Y; Y	
Participants	160 children; 83 girls; strabismus; ASA1,2; 1-12 (mean 4); exc' antiemetic, obese	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 75 mcg/kg i.v.; or METOCLOPRAMIDE 250 mcg/kg; or ONDANSETRON 100 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-24; 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Scuderi 1999

Methods	Y; A; Y; N; Y; Y	
Participants	575 adults; 364 women; various surgery; ASA1-3	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. PACU; PACU - hospital discharge (time unclear).	
Notes	Nausea and rescue antiemetic only first period, vomiting second period. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Scuderi 2000

Methods	Y; B; Y; N; Y; Y	
Participants	79 women; gynaecological; exc' pregnant/breastfeeding, antiemetic	

**Scuderi 2000** (Continued)

Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-4; after 4 hours.	
Notes	Nausea, 'nausea or vomiting' and rescue antiemetic only 0-4 hours. Vomiting commonest >4 hours. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Semple 1992**

Methods	N; B; Y; N; N; N	
Participants	72 women; hysterectomy; 18-65 (mean 46); ASA1,2	
Interventions	Preoperative Either: PLACEBO; or HYOSCINE patch	
Outcomes	All outcomes. PACU; 3-24; 24-48;48-72 hours.	
Notes	Outcomes commonest 3-24 hours. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sennaraj 2002**

Methods	Y; A; Y; Y; Y; Y	
Participants	150 children; 88 girls; strabismus; ASA1,2; 2-15 (mean 7); exc' antiemetic	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 100 mcg/kg i.v.	
Outcomes	Nausea; nausea or vomiting; rescue antiemetics. Postop 0-2; 2-6; 6-24; 0-24 hours.	

**Sennaraj 2002** (Continued)

Notes	Male/female incidences not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Serrano 1998**

Methods	N; B; Y; N; Y; Y	
Participants	51 adults; 28 women; ophthalmological; 21-90 (mean 57); ASA1,2	
Interventions	Intraoperative Either: DIFENIDOL 40mg i.m.; or METOCLOPRAMIDE 10mg; or ON-DANSETRON 4mg	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-4 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Shah 1972**

Methods	N; B; Y; Y; Y; Y
Participants	82 women; gynaecological; mean 35; exc' lung/cardiac disease
Interventions	Preoperative Either: PLACEBO; or METOCLOPRAMIDE 10mg i.m.
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6 hours.
Notes	No side effects. Retching categorized as nausea. Unclear if vomiters nauseated
<i>Risk of bias</i>	

**Shah 1972** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Shah 2003**

Methods	N; B; Y; N; N; N
Participants	60 adults; no sex data; various surgeries; mean 29; ASA1,2; exc' benzodiazepine, drug abuse/allergy, pregnant/breastfeeding, bleeding disorder, CNS disease
Interventions	Induction Either: PLACEBO; or intrathecal MIDAZOLAM 2.5mg
Outcomes	Nausea; vomiting. Postop 0-48 hours.
Notes	Male/female incidences not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Sharma 1993**

Methods	N; B; Y; N; N; N
Participants	50 women; hysterectomy; ASA1,2; exc' premedicant except temazepam
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL 0.05mg/ml
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	No side effects. Retching categorized as vomiting. Unclear if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Sharma 2000

Methods	N; B; Y; N; N; N	
Participants	100 women; gynaecological surgery; ASA1,2; 16-70 (mean 50); exc' antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 2.5mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg	
Outcomes	Nausea or vomiting. Postop 0-6 hours.	
Notes	Side effects not recorded. Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Shende 1997

Methods	N; B; Y; Y; Y; Y	
Participants	176 children; strabismus; 9 months to 12; ASA1;exc' motion sickness/PONV	
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or ONDANSETRON 0.15mg/kg	
Outcomes	Vomiting. Postop 0-2; 2-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Shende 1998

Methods	Y; A; Y; N; Y; Y	
Participants	76 children; 36 girls; strabismus; ASA1,2; 1-12 (mean 7); exc' reflux, motion sickness, CNS/inner ear disease	

### Shende 1998 (Continued)

Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.	
Outcomes	Nausea or vomiting. Postop 0-2; 2-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Shende 2001

Methods	N; A; Y; Y; Y; Y	
Participants	240 children; 121 girls; strabismus; ASA1,2; exc' motion sickness/PONV	
Interventions	Induction AND intraoperative Either: PLACEBO twice; or DROPERIDOL 25 mcg/kg/ONDANSETRON 150 mcg/kg i.v. then PLACEBO; or DROPERIDOL 15 mcg/kg then ONDANSETRON 100 mcg/kg	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Simpson 1988

Methods	N; B; Y; N; Y; Y	
Participants	61 women; gynaecological; ASA1,2; 25-60 (mean 43); exc' analgesic/psychotropic drug	
Interventions	Preoperative Either: PLACEBO; or oral DIAZEPAM 10mg; or HYOSCINE 0.6mg	

**Simpson 1988** (Continued)

Outcomes	Vomiting. Postop 0-3 hours.	
Notes	Side effects not recorded.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sinha 1999**

Methods	N; B; Y; Y; N; N	
Participants	45 adults; 21 women; neurosurgery; ASA1-3; 13-60 (mean 35); exc' N&V/antiemetic, VP shunt, study drug allergy, drug abuse	
Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24; 24-48; 0-48 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	C - Inadequate

**Sites 2003**

Methods	Y; A; Y; Y; Y; Y	
Participants	81 adults; 45 women; knee replacement; mean 66; exc' pregnant, COPD, study drug allergy, chronic pain/opioid, RA	
Interventions	Induction Either: PLACEBO; or intrathecal MORPHINE 250 mcg +/- CLONIDINE 25 or 75 mcg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	



**Sites 2003** (Continued)

Notes	Male/female incidences not reported. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Sniadach 1997**

Methods	Y; B; Y; Y; N; N	
Participants	160 women; gynaecological; ASA1,2; 18-50 (mean 33); exc' study drug allergy	
Interventions	Induction Either: DROPERIDOL 20 mcg/kg i.v.; or ONDANSETRON 4mg	
Outcomes	Nausea; vomiting; rescue antiemetic. PACU; 0-1; 1-24 hours.	
Notes	Rescue antiemetic only 0-1 hour, vomiting 1-24 hours. Nausea commonest 1-24 hours. No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Snow 1967**

Methods	N; B; Y; N; Y; Y
Participants	376 adults; 176 women; eyes; 13-82 years
Interventions	Postoperative twice Either: PLACEBO twice; or TRIMETHOBENZAMIDE 200mg i.m. twice
Outcomes	See notes.
Notes	Incidences not reported. Unclear how retching categorized. Male/female incidences not reported. Side effects not recorded
<i>Risk of bias</i>	

**Snow 1967** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**So 2002**

Methods	Y; B; Y; N; Y; Y
Participants	68 adults; 36 women; lap' chole'; ASA1,2
Interventions	Intraoperative Either: NO TREATMENT; or ONDANSETRON 4mg i.v.
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Sohi 1994**

Methods	Y; B; Y; Y; N; N
Participants	125 adults; 90 analyzed; 72 women; 20-60 (mean 41); lap' chole'; exc' pregnant/breastfeeding, glaucoma, GI/renal obstruction, antiemetic/-cholinergic/-histamine, post-hoc protocol breach
Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE 1.5mg patch
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	Male/female incidences not reported. Unclear how retching categorized. Unclear if a nauseated vomiter categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Sohi 1994** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Somri 2001**

Methods	N; A; Y; N; N; N
Participants	90 children; 41 girls; dental; 4-12 (mean 7); ASA1; exc' antiemetic, ASA>1, infection, study drug allergy
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 0.15mg/kg (to 8mg)
Outcomes	Vomiting; rescue antiemetics. Postop 0-2; 2-5; 5-24; 0-24 hours.
Notes	Rescue antiemetic commonest 2-5 hours. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Song 2002**

Methods	Y; A; Y; N; N; N
Participants	120 women; D&C; ASA1; 18-50; exc' drug abuse, musculoskeletal/psychological/vestibular/neurological disease
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.625mg i.v.
Outcomes	All outcomes. Postop 0-2 hours.
Notes	

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Spadafora 1994

Methods	N; B; Y; N; N; N	
Participants	150 women; laparoscopy; ASA1,2	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.625 or 1.25mg i.v.; or METOCLOPRAMIDE 10mg; or ONDANSETRON 4mg	
Outcomes	PACU; PACU discharge-24 hours	
Notes	Unclear numbers per group. Unclear how retching categorized. Side effect “droperidol sedative”	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1994

Methods	N; B; N; N; Y; Y	
Participants	393 children; no sex data; 2-14 (mean 6); strabismus	
Interventions	Induction Either: DROPERIDOL 50 mcg/kg i.v.; or MIDAZOLAM 50 mcg/kg	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1995

Methods	Y; B; Y; N; Y; Y	
Participants	276 children; no sex data; tonsil +/- adenoids; 2-12 (mean 7); exc' study drug allergy	

### Splinter 1995 (Continued)

Interventions	Induction Either: DROPERIDOL 50 mcg/kg i.v.; or ONDANSETRON 150 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Hospital; discharge-8; 8-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1995b

Methods	Y; B; Y; N; Y; Y	
Participants	215 children; 115 girls; tonsil +/- adenoid; mean 7; exc' study drug allergy	
Interventions	Induction Either: PLACEBO; or MIDAZOLAM 75 mcg/kg i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1995c

Methods	Y; B; Y; N; Y; Y	
Participants	233 children; no sex data; tonsil +/- adenoid; 2-14 (mean 7); ASA1; exc' study drug allergy	
Interventions	Preoperative Either: PLACEBO; or oral ONDANSETRON 0.1mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-4; 4-8; 8-24; 0-24 hours.	

**Splinter 1995c** (Continued)

Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Splinter 1996**

Methods	Y; A; Y; N; N; N	
Participants	140 children; no sex data; ASA1; 2-12 (mean 7); tonsil +/- adenoid; exc' study drug allergy, sleep apnoea	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 150 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 6-14; 14-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Retching not categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Splinter 1997**

Methods	Y; B; Y; N; N; N	
Participants	230 children; 114 girls; tonsil +/- adenoid; 2-12 (mean 7); exc' study drug allergy, sleep apnoea, ASA>2	
Interventions	Induction Either: DEXAMETHASONE 150 mcg/kg (max 8mg) i.v.; or PERPHENAZINE 70 mcg/kg (max 5mg)	
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 6-24; 0-24 hours,	
Notes	Side effects not recorded. Retching categorized as nausea.	

**Splinter 1997** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Splinter 1997b**

Methods	Y; A; Y; N; N; N	
Participants	240 children; no sex data; ASA1,2; 2-12 (mean 7); exc' sleep apnoea, study drug allergy	
Interventions	Induction Either: ONDANSETRON 50 or 150 mcg/kg i.v.	
Outcomes	Vomiting. Hospital; discharge; next day (time unclear); 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Splinter 1997c**

Methods	N; B; Y; N; Y; Y	
Participants	260 children; no sex data; 2-12 (mean 7); tonsil +/- adenoid; exc' study drug allergy	
Interventions	Induction Either: PLACEBO; or PERPHENAZINE 70 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-1; 1-5; 0-24; 24-48; 0-48 hours.	
Notes	No side effects. Retching not categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1998

Methods	Y; A; Y; N; N; N	
Participants	197 children; strabismus; 2-14 (mean 6); ASA1; exc' study drug allergy, illness	
Interventions	Intraoperative Either: DEXAMETHASONE 150 mcg/kg and ONDANSETRON 50 mcg/kg; or ON-DANSETRON 150 mcg/kg AND PLACEBO	
Outcomes	Vomiting. 0 to about 3; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Retching not categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Splinter 1998b

Methods	Y; B; Y; Y; Y; Y	
Participants	216 children; 118 girls; 2-12 (mean 7); ASA1,2; tonsil +/- adenoid; exc' study drug allergy, sleep apnoea, ASA>2	
Interventions	Induction Either: ONDANSETRON 150 mcg/kg i.v.; or PERPHENAZINE 70mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	No side effect. Retching not categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Splinter 2001

Methods	Y; B; Y; N; N; N	
Participants	200 children; no sex data; strabismus; 2-14 (mean 6); exc' study drug allergy, ASA>1	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 50 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-1; 1-3; 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Stead 1994

Methods	N; B; N; N; Y; Y	
Participants	82 children; no sex data; strabismus; 1-13 years; ASA1,2	
Interventions	Induction Either: DROPERIDOL 10 or 20 or 40 or 80 mcg/kg i.v.	
Outcomes	See notes. Postop 0-6 hours.	
Notes	Group sizes unclear. Unclear if nauseated retching vomiters categorized once, twice or thrice. Male/female incidences not recorded. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Steinbrook 1996

Methods	N; A; Y; Y; N; N	
Participants	215 adults; 172 women; lap' chole'	
Interventions	Induction Either: DROPERIDOL 0.625mg i.v. AND METOCLOPRAMIDE 10mg; or ON-	

### Steinbrook 1996 (Continued)

	DANSETRON 4mg AND SALINE	
Outcomes	Rescue antiemetic. PACU	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Steinbrook 1998

Methods	Y; A; Y; Y; N; N	
Participants	212 adults; 161 women; lap' chole'; ASA1,2; exc' post-hoc conversion	
Interventions	Induction Either: PERPHENAZINE 5mg i.v.; or DROPERIDOL 0.625mg AND METOCLOPRAMIDE 10mg/ONDANSETRON 4mg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-4; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Stene 1996

Methods	Y; A; Y; Y; N; N	
Participants	132 children; no sex data; tonsil +/- adenoid; ASA1,2; 2-12 (mean 6)	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.25mg/kg i.v.; or ONDANSETRON 0.15mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop 0-5 hours.	

**Stene 1996** (Continued)

Notes	Male/female incidences not recorded. Side effects not recorded. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Stromberg 1991**

Methods	N; B; Y; N; N; N	
Participants	201 adults; 105 women; various surgeries; ASA1-3; mean 40; exc' ENT/eye surgery, NG, study drug contraindication, antiemetic/anticholinergic, drug abuse	
Interventions	Preoperative 8 hours Either: PLACEBO; or HYOSCINE patch (1.5mg)	
Outcomes	All outcomes. Postop 0-8; 0-24 hours.	
Notes	Male/female incidences not reported. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Subramaniam 2001**

Methods	Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
Participants	135 children; 73 girls; strabismus; 2-15 (mean 7); ASA1,2; exc' antiemetic	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 1mg/kg iv (max 25mg); or ON-DANSETRON 100 mcg/kg (max 4mg)	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported.	

**Subramaniam 2001** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	D - Not used

**Suen 1994**

Methods	N; B; Y; Y; N; N
Participants	210 women; gynaecological; ASA1,2; exc' N&V/opioid/antiemetic, opioid, pregnant, reflux
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.
Outcomes	All outcomes Postop 0-1; 1-5; 5-24; 0-24 hours.
Notes	Rescue antiemetic commonest 0-1 hour. Retching categorized as vomiting

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sukhani 2002**

Methods	N; B; Y; N; N; N
Participants	150 children; 72 girls; tonsil +/- adenoid; 2-12 (mean 6); ASA 1,2; exc' antiemetic, anti-histamine, psychoactive drug, DM
Interventions	Induction Either: PLACEBO; or DOLASETRON 0.5mg/kg iv (max 25mg); or ONDANSETRON 0.15mg/kg (max 4mg)
Outcomes	Vomiting; rescue antiemetic. PACU; discharge-24; 24-48; 0-48 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting

<i>Risk of bias</i>		
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**Sukhani 2002** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sun 1995**

Methods	N; B; Y; N; Y; Y
Participants	125 adults; 58 women; mean 45; ENT
Interventions	Intraoperative Either: PLACEBO; or METOCLOPRAMIDE 20mg i.v.; or ONDANSETRON 4mg; or DROPERIDOL 0.625mg +/- METOCLOPRAMIDE 20mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop recovery-5; 0-24; 0-7 days.
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sun 1997**

Methods	N; B; Y; N; Y; Y
Participants	105 adults; ENT surgery
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625mg i.v.
Outcomes	Nausea; vomiting; rescue antiemetic. Postop time unclear.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sun 1997b**

Methods	N; B; Y; N; N; N	
Participants	315 adults; 158 women; ENT surgery	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625mg i.v.; or ONDANSETRON 4mg	
Outcomes	Postop	
Notes	Incidences not reported. Male/female incidences not reported. Side effects not reported	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Sun 1997c**

Methods	Y; B; Y; Y; N; N	
Participants	75 adults; 35 women; ENT; ASA1,2; 20-70 (mean 43); exc' antiemetic, disease, drug abuse, pregnant, obese	
Interventions	Induction AND intraoperative Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or ON- DANSETRON 4mg i.v. then PLACEBO	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 24 hours.	
Notes	Outcomes commonest 0-2 hours. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Sung 1993**

Methods	N; B; Y; N; N; N	
Participants	180 women; laparoscopy; ASA1,2; 18-65 (mean 32); exc' antiemetic, pregnant, obese, NG, liver disease	

**Sung 1993** (Continued)

Interventions	Preoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-2; 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters/retchers nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Swiatkowski 1999**

Methods	Y; B; Y; N; Y; Y	
Participants	134 women; lap' chole' or gynaecological; ASA1,2; exc' antiemetic/N&V, benzodiazepine, phenothiazine, allergy, epilepsy, reflux, liver/renal disease	
Interventions	Induction Either: DROPERIDOL 75 mcg/kg (max 5mg) i.v.; or ONDANSETRON 4mg i.v	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1; 1-6; 6-12; 12-24 hours.	
Notes	Rescue antiemetic only 0-1 hour. Nausea and vomiting commonest 0-1 hour. Side effect "no difference". Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	C - Inadequate

**Szarvas 2003**

Methods	Y; A; Y; Y; Y; Y	
Participants	130 adults; 61 women; orthopaedic; mean 69; ASA1-3; exc' opioid/antiemetic, motion sickness, pruritus, study drug allergy, steroid	

**Szarvas 2003** (Continued)

Interventions	Induction Either: DEXAMETHASONE 8mg iv; or ONDANSETRON 8mg iv; or both	
Outcomes	All outcomes. Postop 0-4; 4-8; 8-24; 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tan 1998**

Methods	Y; B; Y; N; Y; Y	
Participants	50 women; gynaecological; 20-70	
Interventions	Intraoperative Either: DROPERIDOL 1.25mg i.v.; or METOCLOPRAMIDE 10mg i.v.	
Outcomes	See notes.	
Notes	“The incidence of PONV was significantly higher in the metoclopramide group than the droperidol group”. No incidences given	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tan 2000**

Methods	Y; B; Y; N; Y; Y	
Participants	60 men; herniae; ASA1; mean 23; exc' study drug allergy	
Interventions	Induction AND intraoperative Either: PLACEBO; or intrathecal NEOSTIGMINE 50 or 100 mcg	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	



**Tan 2000** (Continued)

Notes	Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Tan 2001**

Methods	Y; B; Y; Y; Y; Y	
Participants	60 men; herniae; ASA1; exc' study drug allergy, contraindication to spinal	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 10mg i.v.	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Tang 1996**

Methods	Y; A; Y; Y; Y; Y
Participants	161 women; gynaecological; ASA1,2; exc' pregnant, antiemetic/psychotropic, obese
Interventions	Induction Either: PLACEBO; or DROPERIDOL 0.625 or 1.25mg i.v.; or ONDANSETRON 4mg
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-1;1-6; 6-24; 0-24 hours.
Notes	Rescue antiemetic only 0-24 hours. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters/retchers nauseated or categorized once or twice
<i>Risk of bias</i>	

**Tang 1996** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Tang 1998**

Methods	Y; A; Y; Y; N; N
Participants	164 women; ASA1,2; laparoscopy; exc' antiemetic, antipsychotic, obese, pregnant, vomiting
Interventions	Induction AND intraoperative Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or ONDANSETRON 4mg then PLACEBO; or ONDANSETRON 2mg twice
Outcomes	All outcomes. Postop 0-5; 0-24 hours.
Notes	Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Tang 1998b**

Methods	N; B; Y; Y; Y; Y
Participants	218 women; hysterectomy; ASA1,2; exc' pregnant, obese, N&V/antiemetic/antipsychotic, drug abuse, renal/liver/cardiac/metabolic/endocrine
Interventions	Intraoperative Either: PLACEBO; or PALONOSETRON 0.1 or 0.3 or 1.0 or 3.0 or 30 mcg/kg i.v
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 0-12; 0-24 hours.
Notes	Retching categorized as vomiting.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
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**Tang 1998b** (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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**Tang 2003**

Methods	Y; B; Y; N; Y; Y
Participants	135 adults; 85 women; mean 55; various surgeries; ASA1-3; exc' pregnant, menstrual, obese, N&V/antiemetic/psychoactive, cardiac/lung/CNS/metabolic/endocrine disease
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 12.5mg iv; or ONDANSETRON 4mg
Outcomes	All outcomes. Postop 0-1; 1-24; 0-24 hours.
Notes	Nausea and vomiting commonest 1-24 hours, rescue antiemetic 0-1 hour. Male/female incidences not reported. Side effects not reported. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tarkkila 1995**

Methods	N; B; Y; N; Y; Y
Participants	60 adults; no sex data; 50-83 (mean 69); ASA1-3; exc' urinary retention, cardiac disease, glaucoma
Interventions	Preoperative twice Either: PLACEBO then oral DIAZEPAM 5-15mg/PROMETHAZINE 10mg; or SCOPOLAMINE patch then oral PROMETHAZINE 10mg
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### TerRiet 1997

Methods	N; B; Y; N; Y; Y	
Participants	142 adults; no sex or age data; ASA1,2	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.625 or 1.25mg i.v.; or ONDANSETRON 2 or 4mg i.v.; or THIETHYLPERAZINE 5 or 10mg i.v	
Outcomes	Vomiting; nausea or vomiting; rescue antiemetic. Postop 0-2; 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tezcan 1993

Methods	N; B; Y; N; Y; Y	
Participants	45 women; gynaecological; ASA1,2; mean 29; exc' antiemetic, hypertension, disease	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.04mg/kg i.m.; or EPHEDRINE 0.5mg/kg	
Outcomes	Nausea; vomiting. PACU; PACU-2; 2-12 hours.	
Notes	Nausea commonest PACU, vomiting PACU-2 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Thagaard 2003

Methods	Y; A; Y; Y; N; N	
Participants	101 adults; 66 women; laparoscopy; mean 43; ASA1,2; exc’ study drug contraindicated, antiemetic, motion sickness/PONV/N&V	
Interventions	Postoperative six times Either: PLACEBO; or oral ONDANSETRON 8mg each time	
Outcomes	Nausea; vomiting. Postop 4-24; 24-72 hours.	
Notes	Nausea commonest 4-24 hours, vomiting commonest 24-72 hours. Male/female incidences not reported. No side effects. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Thomas 2001

Methods	Y; B; Y; Y; Y; Y	
Participants	177 women; gynaecological; pre-menopausal 19-53 (mean 36); ASA1,2; exc' GI/liver/renal disease, antiemetic/N&V, pregnant/breastfeeding, BMI>35	
Interventions	Induction Either: DEXAMETHASONE 8mg i.v.; or ONDANSETRON 4mg i.v.; or both	
Outcomes	All outcomes. Postop 0-3; 3-12; 12-24; 0-24 hours.	
Notes	Outcomes commonest 3-12 hours. Unclear if vomiters retched or nauseated or if nauseated vomiter categorized once or twice. Retching categorized separately	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tigerstedt 1988

Methods	N; B; Y; N; Y; Y	
Participants	96 women; superficial surgery; ASA1,2; 18-65 (mean 41); exc' study drug contraindication, pregnant	
Interventions	Preoperative AND intraoperative Either: PLACEBO; or PLACEBO then DROPERIDOL 1.25mg i.v.; or SCOPOLAMINE patch 1.5mg then PLACEBO	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-2; 2-24 hours.	
Notes	Rescue antiemetic only 0-2 hours. Nausea and vomiting commonest 2-24 hours. Unclear how retching categorized or if nauseated vomiter categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Ting 2001

Methods	N; B; Y; Y; Y; Y	
Participants	40 adults; 17 women; ENT; 24-54 (mean 37); ASA1,2; exc' study drug contraindication	
Interventions	Intraoperative Either: PLACEBO; or ATROPINE 0.01mg/kg iv AND EDROPHONIUM 1mg/kg	
Outcomes	Nausea or vomiting. Postop 0-3 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tokat 1994

Methods	N; B; N; N; Y; Y	
Participants	40 women; gynaecological; mean 44; ASA1,2	
Interventions	Preoperative AND postoperative Either: PLACEBO twice; or ONDANSETRON 4mg i.v. twice	
Outcomes	Nausea; vomiting. PACU; PACU - 8 hours.	
Notes	Outcomes commonest PACU. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tolksdorf 1985

Methods	N; B; Y; Y; Y; Y	
Participants	40 women; gynaecological; 21-77 (mean 42); exc' glaucoma, study drug allergy	
Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE 1.5mg patch	
Outcomes	All outcomes Postop 0-15; 15 min to 1 hour; 1-2; 2-3; 3-4; 4-5; 5-6; 0-6 hours	
Notes	Nausea commonest 15 min to 1 hour, vomiting 0-15 min. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tolksdorf 1986

Methods	N; B; N; N; N; N	
Participants	61 adults; 37 women; 50-80 (mean 64); gynaecological/general	

**Tolksdorf 1986** (Continued)

Interventions	Preoperative Either: PLACEBO; or SCOPOLAMINE patch	
Outcomes	Vomiting. Postop 0-18 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tolksdorf 1987**

Methods	N; B; N; N; Y; Y	
Participants	60 women; D&C; exc' contraindications to study drug	
Interventions	Preoperative Either: PLACEBO; or oral LORMETAZEPAM 1mg; or MORPHINE 30mg	
Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tom 1996**

Methods	N; B; Y; Y; N; N	
Participants	70 children; 31 girls; tonsil + adenoids; exc' cardiac/NM disease, bleeding disorder	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 1 mg/kg (max 10mg) i.v.	
Outcomes	Vomiting. Postop 0-24 hours.	



**Tom 1996** (Continued)

Notes	Male/female incidences not reported. No side effects. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Top 1996**

Methods	N; B; N; N; Y; N	
Participants	40 adults; laparotomies; ASA1,2; exc' antiemetic	
Interventions	Induction Either: ONDANSETRON 4mg i.v. +/- DEXAMETHASONE 8mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Side effects not reported. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tosun 2002**

Methods	N; B; N; N; Y; Y		
Participants	40 children; 10 girls; strabismus; ASA1,2; 3-12 (mean 6); exc' antiemetic, retardation		
Interventions	Induction Either: PLACEBO saline iv; or TROPISETRON 1mg/msq		
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-2; 2-6; 6-24; 0-24 hours.		
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized		
<i>Risk of bias</i>			
Bias	Authors' judgement	Support for judgement	

**Tosun 2002** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Trakya 1996**

Methods	N; B; N; N; Y; Y
Participants	30 women; hysterectomy; ASA1,2; 18-65 (mean 46);
Interventions	Preoperative thrice AND induction Either: NO TREATMENT thrice then ONDANSETRON 4 or 8mg i.v.; or oral ONDANSETRON 8mg thrice then NO TREATMENT
Outcomes	Nausea; vomiting. Postop 0-1; 1-4; 4-24; 0-24 hours.
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tramer 1998**

Methods	N; B; Y; N; N; N
Participants	180 children; 77 girls; 3-16 (mean 7); strabismus
Interventions	Induction Either: NO TREATMENT; or LIGNOCAINE 2 mg/kg i.v.; or ONDANSETRON 5mg/m <sup>2</sup>
Outcomes	Vomiting; rescue antiemetic. Postop 0-6; 0-24; 24-48 hours.
Notes	Rescue antiemetic only 0-24 hours, vomiting commonest 0-24 hours. Male/female incidences not reported. Side effects not reported. Retching categorized as vomiting

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Triem 1999

Methods	N; B; N; N; Y; Y	
Participants	80 women; hysterectomy; ASA1-3; mean 53; exc' liver/renal disease, chemotherapy, study drug allergy, obese, antiemetic/N&V, psychiatric	
Interventions	Preoperative AND induction Either: PLACEBO/oral DOLASETRON 50mg then NO TREATMENT/DROPERIDOL 2.5mg i.v	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-4 hours.	
Notes	Side effects not recorded. Categorized by severest symptom (vomiting>retching>nausea). I combined retching and vomiting. Unclear ifretchers/vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tripple 1989

Methods	N; B; Y; Y; Y; Y	
Participants	32 women; gynaecological; exc' PONV, inner ear problems, obese, reflux risk, antiemetic	
Interventions	Preoperative Either: DROPERIDOL 5mcg/kg or 0.01mg/kg i.v.	
Outcomes	All outcomes. PACU; PACU-6 hours.	
Notes	Nausea or vomiting only PACU. Other outcomes commonest PACU-6 hours. No side effects. Unclear how retching categorized or if nauseated vomiter categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tsui 1999

Methods	Y; B; Y; N; Y; Y	
Participants	121 women; gynaecological; mean 50; exc' >ASA2, >65, study drug allergy, antiemetic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.; or TROPISETRON 5mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-16; 0-24 hours.	
Notes	Side effect “no severe reaction” . Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Tuncer 2002

Methods	Y; B; Y; Y; Y; Y	
Participants	50 adults; 16 women; ASA1,2; orthopaedic; exc' ASA>2, PONV, GI disease, study drug contraindication, N&V	
Interventions	Postoperative Either: PLACEBO; or DEXAMETHASONE 150 mcg/kg	
Outcomes	All outcomes. Postop 4; 8; 12; 24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Categorized by severest symptom (vomiting>retching>nausea)	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tur 1994**

Methods	N; B; N; N; Y; Y	
Participants	62 adults; 42 women; ENT/eyes/gynaecological; 16-75 (mean 39);	
Interventions	Preoperative Either: NO TREATMENT; or oral ONDANSETRON 4mg	
Outcomes	Vomiting. Postop 0-10; 10-60 minutes; 1-6; 6-12; 12-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tur 1995**

Methods	N; B; N; N; Y; Y	
Participants	80 adults; 59 women; 17-65 (mean 43)	
Interventions	Preoperative Either: NO TREATMENT; or oral ONDANSETRON 4 or 8 or 16mg	
Outcomes	Vomiting. Postop 0-10; 10-60 minutes; 1-6; 6-12; 12-24 hours.	
Notes	Vomiting commonest 1-6 hours. Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Turan 2003**

Methods	Y; A; Y; Y; Y; Y	
Participants	44 children; no sex data; general; ASA1; 1-6 (mean 4); exc' contraindication to caudal	

**Turan 2003** (Continued)

Interventions	Induction Either: PLACEBO; or caudal NEOSTIGMINE 2 mcg/kg	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Turhanoglu 1999**

Methods	N; B; Y; Y; Y; Y	
Participants	100 women; gynaecological; ASA1,2; 30-56 (mean 43); exc' motion sickness/PONV, obese, study drug allergy, liver disease	
Interventions	Preoperative AND induction Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or DIMEN-HYDRINATE 50mg i.m. then PLACEBO; or both	
Outcomes	Nausea; vomiting. Postop 0-2; 2-6; 6-24 hours.	
Notes	Outcomes commonest 0-2 hours. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Turkoglu 1995**

Methods	N; B; N; N; Y; Y	
Participants	60 children; no sex data; strabismus; 3-14 (mean 11); ASA1,2	

**Turkoglu 1995** (Continued)

Interventions	Preoperative Either CHLORPROMAZINE 0.2mg/kg i.v.; or LIDOCAINE 1.5mg/kg; or DROPERIDOL 0.075mg/kg AND LIDOCAINE 1.5mg/kg
Outcomes	Nausea or vomiting. 0-24 hours.
Notes	Unclear how retching categorized.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tzeng 2000**

Methods	Y; A; Y; Y; N; N
Participants	120 pregnant women; Caesarean; ASA1,2
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 8mg i.v.; or DROPERIDOL 1.25 mg
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Unclear how retching categorized or if vomiters nauseated.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tzeng 2000b**

Methods	Y; B; Y; Y; N; N
Participants	160 women; STOP; ASA1,2; 20-45 (mean 32); exc' renal, blood/liver disease, drug abuse, antiemetic
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg i.v.; or DROPERIDOL 1.25mg; or both

**Tzeng 2000b** (Continued)

Outcomes	All outcomes. Postop 0-2; 2-24; 0-24 hours.	
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tzeng 2002**

Methods	Y; B; Y; Y; N; N	
Participants	120 women; hysterectomy; ASA1,2; 35-55 (mean 45); exc' motion sickness/PONV, GI disease, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 5mg i.v.; or METOCLOPRAMIDE 10mg	
Outcomes	All outcomes. Postop 0-6; 0-12; 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting, unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Tzeng 2003**

Methods	Y; B; Y; Y; N; N	
Participants	70 women; hysterectomy; mean age 43; ASA1,2; exc' motion sickness/PONV, GI disorder, disease, opioid, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 4mg iv	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	



**Tzeng 2003** (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Uerpaiojkit 2002**

Methods	N; B; Y; N; Y; Y
Participants	150 women; gynaecological; 18-50 (mean 33); ASA1,2; 40-70 kg; exc' antiemetic, cardiac or lung disease
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.5mg i.v.; or METOCLOPRAMIDE 5mg
Outcomes	Vomiting. Postop 0-6; 6-24 hours.
Notes	Vomiting commonest 6-24 hours. No side effects. Retching categorized as vomiting

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Ummenhofer 1994**

Methods	N; A; Y; Y; Y; Y
Participants	200 children; 68 girls; various surgeries; ASA1, 2; 2-11 (mean 5); exc' liver disease
Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.1mg/kg i.v.
Outcomes	All outcomes. Postop 0-1; 1-2; 2-3; 3-4; 0-4 hours.
Notes	Male/female incidences not reported. No side effects. Retching categorized as nausea. Unclear if vomiter/retcher nauseated

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

Ummenhofer 1994 (Continued)

Allocation concealment (selection bias)	Low risk	A - Adequate
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Unlugenc 2002

Methods	N; B; Y; Y; N; Y	
Participants	66 adults; 38 women; laparotomy; ASA 1, 2; exc' opioid, chronic pain	
Interventions	Postoperative PCA Either: PLACEBO; or MAGNESIUM 30mg/ml; or KETAMINE 1mg/ml	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Unsold 1996

Methods	N; B; Y; Y; N; Y	
Participants	144 women; gynaecological; ASA1,2	
Interventions	Preoperative Either: PLACEBO; or DIMETINDENE 12mg i.v. AND CIMETIDINE 600mg	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Uppington 1986

Methods	N; B; N; N; N; N	
Participants	42 women; gynaecological; ASA1,2; 18-65 (mean 40)	
Interventions	Preoperative AND postoperative Either: PLACEBO; or HYOSCINE (0.5mg /3 days) patch	
Outcomes	Nausea; vomiting; rescue antiemetic Postop 0-24; 24-48; 48-72 hours.	
Notes	Nausea commonest 24-48 hours, vomiting 0-24 hours. Retching categorized as vomiting. Unclear if nauseated retcher/vomiter categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Usha Rani 1996

Methods	N; B; Y; N; Y; Y	
Participants	92 women; gynaecological; exc' <18 >65, CNS/renal/liver/cardiac/metabolic/endocrine disease, antiemetic, NG	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 8mg i.v.	
Outcomes	Nausea; vomiting; rescue antimetic. Postop 0-24 hours.	
Notes	Incidence of specific side effects not reported. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Usmani 2003

Methods	N; B; Y; N; Y; Y	
Participants	90 participants; no sex or age data; middle ear; ASA1,2	
Interventions	Preoperative Either: DEXAMETHASONE 0.15mg/kg iv; or ONDANSETRON 0.1mg/kg; or both	
Outcomes	All outcomes. Postop 0-4; 4-24 hours.	
Notes	Nausea commonest 0-4 hours, vomiting and 'nausea or vomiting' 4-24 hours. Male/female incidences not reported. Unclear ifretchers/vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Valanne 1985

Methods	N; B; Y; N; N; N	
Participants	100 adults; 32 women; oral	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.014mg/kg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-1; 1-6; 6-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not reported. Unclear how retching categorized	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Valentine 1996

Methods	N; B; Y; Y; Y; Y	
Participants	52 women; Caesarean; ASA1,2; exc' chronic pain, foetus <36/40, study drug allergy	

**Valentine 1996** (Continued)

Interventions	Induction Either: PLACEBO; or intrathecal MIDAZOLAM 1mg	
Outcomes	Nausea or vomiting. Postop 1; 6; 24 hours	
Notes	Nausea or vomiting commonest at one hour. No side effects.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**van den Berg 1987**

Methods	N; B; N; N; Y; Y	
Participants	200 children & adults; female 76; eyes; 1-83 (mean 43);	
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 0.035mg/kg i.v.; or METOCLOPRAMIDE 0.15mg/kg; or PROCHLORPERAZINE 0.18mg/kg i.m	
Outcomes	Vomiting. Postop 0-24 hours.	
Notes	No side effects. Unclear if retching vomiters categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**van den Berg 1995**

Methods	N; B; N; N; Y; Y	
Participants	374 patients; no sex or age data; ENT	
Interventions	Induction Either: PLACEBO/ONDANSETRON 0.06mg/kg/PROCHLORPERAZINE 0.1mg/kg i.v. and NO TREATMENT; or NO TREATMENT i.v. and PROCHLORPERAZINE 0.2mg i.m	

van den Berg 1995 (Continued)

Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

van den Berg 1996

Methods	N; A; Y; Y; Y; Y	
Participants	148 adults and children; 69 female; tympanoplasty; 7-61 (mean 30); ASA1,2; exc' pregnant, antiemetic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 0.06mg/kg i.v.; or PROCHLORPERAZINE 0.1 or 0.2mg/kg i.m	
Outcomes	All outcomes. PACU; PACU - 24 hours.	
Notes	Rescue antiemetic only PACU-24 hours. Other outcomes commonest PACU-24 hours. Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

van den Berg 1996b

Methods	N; B; Y; Y; Y; Y	
Participants	282 children & adults; female 109; 2-65 (mean 18); tonsil +/- adenoids; ASA1,2	
Interventions	Induction Either: PLACEBO; or PROCHLORPERAZINE 0.1 or 0.2mg/kg i.v. AND NO TREATMENT i.m.; or ONDANSETRON 0.06mg/kg i.v. AND NO TREATMENT	

van den Berg 1996b (Continued)

Outcomes	All outcomes. Postop 0-1; 1-24 hours.	
Notes	Outcomes commonest 1-24 hours. Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

van den Berg 1996c

Methods	N; B; Y; Y; Y; Y	
Participants	220 adults; 46 female; ENT; ASA1,2; exc' antiemetic, pregnant	
Interventions	Induction Either: PLACEBO/ONDANSETRON 0.06mg/kg i.v./PROCHLORPERAZINE 0.1mg/kg i.v.; or PROCHLORPERAZINE 0.2mg/kg i.m	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

van der Walt 1987

Methods	N; A; Y; Y; Y; Y	
Participants	143 children; no sex data; 1-10; ENT or general	
Interventions	Preoperative Either: oral DIAZEPAM 0.25mg/kg or TRIMEPRAZINE 4mg/kg +/- oral DROPERIDOL 0.2mg/kg	
Outcomes	Vomiting. Postop 0-12 hours.	

van der Walt 1987 (Continued)

Notes	Male/female incidences not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

van der Walt 1990

Methods	N; A; Y; Y; Y; Y	
Participants	149 children; no sex data; 1-10 (mean 5); adenotonsillectomy	
Interventions	Preoperative Either: PLACEBO; or oral DIAZEPAM 0.5mg/kg; or oral PENTOBARBITONE 3mg/kg; or TRIMEPRAZINE 4mg/kg	
Outcomes	Vomiting; rescue antiemetic. Postop time unclear.	
Notes	Male/female incidences not recorded. No side effects. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Vener 1996

Methods	Y; A; Y; N; Y; Y	
Participants	80 children; 44 girls; ASA1,2; strabismus; 1-12 (mean 6); exc' antiemetic/N&V	
Interventions	Induction Either: PLACEBO; or DIMENHYDRINATE 0.5mg/kg (max 25mg) i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-5; 5-24; 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting	
Risk of bias		
Bias	Authors' judgement	Support for judgement



**Vener 1996** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Vimlati 2002**

Methods	N; B; Y; N; N; N
Participants	148 adults; lap' chole'
Interventions	Induction AND intraoperative Either: PLACEBO twice; or PLACEBO then ONDANSETRON 4mg i.v.; or ON-DANSETRON 4mg then PLACEBO
Outcomes	Vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as nausea

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Visalyaputra 1998**

Methods	N; B; Y; Y; N; N
Participants	120 women; laparoscopies; ASA1,2; 20-40 (mean 33); exc' opioids/antiemetic
Interventions	Preoperative AND postoperative Either: PLACEBO twice; or PLACEBO AND DROPERIDOL 1.25mg i.v. then PLACEBO; or oral GINGER 1g AND PLACEBO i.v. then oral GINGER 1g; or oral GINGER 1g AND DROPERIDOL 1.25mg i.v. then oral GINGER 1g
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Vollmer 1988

Methods	N; B; Y; N; N; N	
Participants	118 women; STOP; >18 (mean 26); exc' study drug allergy	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10 or 20mg i.v.	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-half; half -1; 1-2; 2-4 hours.	
Notes	Outcomes commonest half an hour-one hour. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Volpe 1994

Methods	N; B; N; N; Y; Y	
Participants	928 adults; 528 women; various surgeries; exc' liver, renal & cardiac failure, antiemetic	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Vosdoganis 1999

Methods	N; B; Y; N; N; N	
Participants	42 children; 23 girls; tonsil +/- adenoid; ASA1,2; 2-12 (mean 5); exc' ASA>2, PONV, study drug allergy	

**Vosdoganis 1999** (Continued)

Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 400 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetics. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	High risk	C - Inadequate

**Wagley 1999**

Methods	N; B; Y; N; Y; Y	
Participants	50 adults; 25 women; oral; ASA1,2	
Interventions	Induction Either: PLACEBO; or ONDANSETRON 4mg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	High risk	C - Inadequate

**Wagner 1996**

Methods	Y; B; Y; Y; N; N	
Participants	119 women; laparoscopies; ASA1,2; exc' pregnant/breastfeeding, antiemetic, study drug contraindication	
Interventions	Intraoperative Either: PLACEBO; or intranasal METOCLOPRAMIDE 20mg	

**Wagner 1996** (Continued)

Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wagner 2003**

Methods	Y; B; Y; Y; Y; Y	
Participants	118 children; 50 girls; strabismus; 2-12 (mean 5); ASA1,2; exc' study drug allergy, POV/ motion sickness, liver/renal/cardiac/CNS disease, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DOLASETRON 0.35mg/kg or 12.5mg iv	
Outcomes	Nausea; rescue antiemetic. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Walder 1994**

Methods	N; B; Y; Y; Y; Y	
Participants	50 women; gynaecological; mean 44	
Interventions	Postoperative PCA Either: PLACEBO; or METOCLOPRAMIDE 0.5mg/ml	
Outcomes	All outcomes. Postop 0-6; 6-12; 12-18; 18-24 hours.	

**Walder 1994** (Continued)

Notes	Outcomes commonest 0-6 hours. Side effects not recorded. Vomiting categorized severe nausea. Unclear if vomiters nauseated or categorized once or more. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Walder 1995**

Methods	N; B; Y; Y; Y; Y	
Participants	50 women; gynaecological; ASA1,2	
Interventions	Intraoperative AND postoperative PCA Either: CYCLIZINE 50mg i.v. then 2mg/ml PCA; or DROPERIDOL 1.25mg then 0.05mg/ml	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Unclear how retching categorized.	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Waldmann 1985**

Methods	N; B; Y; Y; Y; Y	
Participants	60 women; STOP	
Interventions	Induction Either: PLACEBO; or DOMPERIDONE 10mg i.v.; or METOCLOPRAMIDE 10mg	
Outcomes	Vomiting. Postop 0-2; 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized. Unclear if nauseated vomiter categorized once or twice	

Waldmann 1985 (Continued)

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

Wang 1999

Methods	Y; A; Y; Y; N; N
Participants	90 adults; 50 women; ASA 1,2; 30-55; lap' chole'; exc' motion sickness, antiemetic
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 8mg i.v.
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Wang 1999b

Methods	Y; A; Y; Y; N; N
Participants	80 women; hysterectomy; ASA1,2; 35-60
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 8mg i.v.
Outcomes	All outcomes. Postop 0-24 hours.
Notes	No side effects. Unclear how retching categorized or if vomiters nauseated

<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

Wang 1999b (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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Wang 1999c

Methods	Y; A; Y; Y; N; N
Participants	120 women; thyroidectomy; exc' antiemetic
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 10mg i.v.; or DROPERIDOL 1.25mg
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters/retchers nauseated

*Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Wang 2000

Methods	Y; A; Y; N; N; N
Participants	90 women; gynaecological; ASA1,2; exc' breastfeeding/pregnant, >90kg, drugs
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 10mg i.v.
Outcomes	All outcomes. Postop 0-4; 4-24; 0-24 hours.
Notes	Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated

*Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wang 2000b

Methods	Y; A; Y; Y; Y; Y	
Participants	120 women; hysterectomy; ASA1,2; 35-45 (mean 41); exc' motion sickness, GI disease, antiemetic	
Interventions	Induction AND postoperative Either: PLACEBO twice; or PLACEBO then DEXAMETHASONE 10mg i.v.; or DEX-AMETHASONE 10mg then PLACEBO	
Outcomes	All outcomes. Postop 0-2; 2-24 hours.	
Notes	Outcomes commonest 0-2 hours. Side effects not recorded. Retching categorized as vom-iting. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wang 2000c

Methods	Y; A; Y; Y; Y; Y	
Participants	225 women; thyroidectomy; excluded PONV, motion sickness, GI disease, antiemetic	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 1.25 or 2.5 or 5 or 10mg i.v	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting. Unclear if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Wang 2001

Methods	Y; A; Y; Y; N; N	
Participants	180 pregnant women; Caesarean; ASA1,2; 20-35 (mean 28); exc' PONV, motion sickness, GI disease, BM <50 >90kg	
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 2.5 or 5 or 10mg i.v.	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	No side effects. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Wang 2002

Methods	Y; A; Y; Y; N; N	
Participants	120 women; hysterectomy; excluded PONV, motion sickness, disease, obese, antiemetic	
Interventions	Intraoperative Either: PLACEBO; or DEXAMETHASONE 5mg i.v.; or TROPISETRON 5mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Retching categorized as vomiting.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wang 2002b

Methods	Y; B; Y; Y; N; N	
Participants	94 children; girls 42; various surgeries; 7-16 (mean 11); exc' ASA>2, prematurity	

**Wang 2002b** (Continued)

Interventions	Induction Either: PLACEBO; or DROPERIDOL 10 mcg/kg i.v.	
Outcomes	All outcomes. Postop 0-3; 3-24 hours.	
Notes	Outcomes commonest 0-3 hours. Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wang 2002c**

Methods	Y; A; Y; Y; N; N	
Participants	120 adults; 72 women; lap' chole'; ASA1,2; exc' PONV/motion sickness, disease, antiemetic	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 5mg iv; or TROPISETRON 2mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. No side effects. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wang 2002d**

Methods	N; B; Y; N; N; N	
Participants	120 adults; elective surgery	
Interventions	Either: ONDANSETRON 8mg iv/TROPISETRON 3mg iv +/- DEXAMETHASONE 10mg	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	

**Wang 2002d** (Continued)

Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wang 2002e**

Methods	Y; A; Y; Y; Y; Y	
Participants	120 adults; 65 women; tympanomastoid; ASA1,2; 35-55 (mean 39); exc' motion sickness/ PONV, disease, antiemetic	
Interventions	Induction Either: PLACEBO; or DEXAMETHASONE 5mg iv; or TROPISETRON 2mg	
Outcomes	All outcomes. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wang 2002f**

Methods	N; B; Y; N; Y; Y
Participants	70 adults; 37 women; craniotomy; ASA1,2; mean 40
Interventions	Induction Either: PLACEBO; or GRANISETRON 3mg iv
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-72 hours.
Notes	Male/female incidences not reported. Side effects not recorded
<i>Risk of bias</i>	

Wang 2002f (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Warrick 1999

Methods	Y; B; Y; N; N; N
Participants	120 women; gynaecological; ASA1,2; exc' N&V/antiemetic, breastfeeding
Interventions	Induction AND postoperative Either: DROPERIDOL 1.25mg i.v. +/- ONDANSETRON 4mg then PLACEBO; or DROPERIDOL 1.25mg +/- ONDANSETRON 4mg twice
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-3.5; 3.5-24; 0-24 hours.
Notes	Side effect "no difference". Unclear how retching categorized

*Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

Warriner 1997

Methods	N; B; Y; N; Y; Y
Participants	374 women; hysterectomy; ASA1,2; 18-70 (mean 43); exc' cardiac, lung, liver, renal disease, antiemetic
Interventions	Preoperative Either: PLACEBO; or oral DOLASETRON 25 or 50 or 100 or 200mg
Outcomes	All outcomes. Postop 0-24 hours.
Notes	Retching categorized as vomiting. Unclear if vomiters nauseated

*Risk of bias*

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Watcha 1991

Methods	N; B; Y; N; Y; Y	
Participants	120 children; girls 56; ASA1,2; 0.5-12 (mean 5); strabismus	
Interventions	Induction NO TREATMENT; or DROPERIDOL 75 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Watcha 1995

Methods	Y; B; Y; Y; Y; Y	
Participants	113 children; no sex data; various surgeries; ASA1,2; exc' CNS/liver/renal/cardiac disease, reflux risk, study drug allergy	
Interventions	Intraoperative Either: PLACEBO; or NEOSTIGMINE 70 mcg/kg AND GLYCOPYRROLATE 10 mcg/kg i.v.; or EDROPHONIUM 1 mg/kg AND ATROPINE 10 mcg/kg	
Outcomes	Vomiting; rescue antiemetic. Postoperative recovery; 0-24 hours.	
Notes	Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Watcha 1995b

Methods	Y; A; Y; Y; Y; Y	
Participants	130 children; 67 girls; 1.5-15 (mean 6); ASA1,2; various surgeries; exc' N&V/antiemetic, study drug contraindication	

**Watcha 1995b** (Continued)

Interventions	Induction Either: PLACEBO; or ONDANSETRON 10 or 50 or 100 mcg/kg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 3-24; 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

**Watts 1996**

Methods	Y; B; Y; N; Y; Y	
Participants	166 women; laparoscopies; exc' pregnant, opioid/antiemetic, study drug allergy	
Interventions	Induction Either: CYCLIZINE 50mg i.m.; or METOCLOPRAMIDE 10mg i.v.; or ON-DANSETRON 4mg i.v	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	No side effects. Unclear how retching categorized. Nausea categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wattwil 2003**

Methods	Y; A; N; N; N; N	
Participants	80 women; breast; ASA1-3; 19-80 (mean 57); exc' steroid	
Interventions	Induction Either: DEXAMETHASONE 4mg iv; or ONDANSETRON 4mg	
Outcomes	All outcomes. Postop 0-4; 4-8; 8-16; 16-24; 0-24 hours.	

**Wattwil 2003** (Continued)

Notes	No side effects. Retching categorized as vomiting.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

**Welters 2000**

Methods	Y; B; Y; Y; Y; Y	
Participants	301 children; no sex data; strabismus; 4-10 (mean 6); ASA1,2; exc' fever, N&V, antiemetic, CNS disease	
Interventions	Preoperative Either: PLACEBO; or DIMENHYDRINATE 2-3 mg/kg suppository	
Outcomes	Vomiting; rescue antiemetic. Postop 0-3; 0-6; 0-9; 0-12; 0-18 hours.	
Notes	Male/female incidences not recorded. Unclear how retching categorized	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Welters 2000b**

Methods	N; B; Y; N; Y; Y
Participants	99 children; Faden; ASA1,2; 4-10; exc' PONV, antiemetic
Interventions	Preoperative Either: PLACEBO; or DIMENHYDRINATE 40-70mg suppository
Outcomes	Vomiting. Postop 0-18 hours.
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized
<i>Risk of bias</i>	

**Welters 2000b** (Continued)

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Whalley 1991**

Methods	N; B; Y; N; Y; Y	
Participants	60 adults; 24 women; ENT	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.15 mg/kg i.v.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-3; 3-6; 6-24; 0-24 hours.	
Notes	Unclear if vomiters nauseated.	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**White 2001**

Methods	Y; A; Y; Y; Y; Y	
Participants	80 women; breast; ASA1,2; 18-70 (mean 44); exc' antiemetic, ASA>2, reflux, liver/renal disease	
Interventions	Postoperative PCA Either: PLACEBO; or ONDANSETRON 1mg/hr	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate



### Wildersmith 1994

Methods	N; B; Y; N; Y; Y	
Participants	40 adults; 16 women; orthopaedic; ASA1-3; mean 52; exc' opioid, epilepsy, renal failure, DM, neuropathy	
Interventions	Postoperative Either: PLACEBO; or epidural DROPERIDOL 2.5mg	
Outcomes	Nausea; vomiting. Postop 0-5 hours.	
Notes	Male/female incidences not reported. Unclear if nauseated retching vomiter categorized once, twice or thrice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wilkinson 1989

Methods	Y; A; Y; Y; N; N	
Participants	221 adults; no sex data; orthopaedic/plastic; ASA1,2; 16-65; exc' reflux, antiemetic, anti-cholinergic	
Interventions	Preoperative Either: PLACEBO; or HYOSCINE patch	
Outcomes	Nausea; vomiting. Postop 0-24; 24-48 hours.	
Notes	Outcomes commonest 0-24 hours. Male/female incidences not recorded. Side effects not reported. Unclear how retching categorized or if nauseated vomiter categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Williams 1993

Methods	N; B; Y; Y; N; N.	
Participants	60 women; hysterectomy; ASA1,2; exc' phenothiazine	
Interventions	Postoperative PCA Either: PLACEBO; or DROPERIDOL 0.2mg per bolus	
Outcomes	All outcomes Postop 0-4; 4-12; 12-24; 0-24 hours.	
Notes	Vomiting commonest 12-24 hours, nausea or vomiting 0-4 hours. Unclear how retching categorized or if vomiters nauseated	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Williams 1999

Methods	N; A; Y; Y; N; N	
Participants	49 women; hysterectomy; ASA1-3; 25-60 (mean 41); exc' motion sickness/PONV, antiemetic, prochlorperazine, epilepsy, study drug allergy	
Interventions	Preoperative AND postoperative four times Either: PLACEBO; or buccal PROCHLORPERAZINE 6mg each time	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-4; 4-8; 8-12; 12-16; 16-20; 20-24; 24-28; 28-32; 32-36; 36-40; 40-44; 44-48 hours	
Notes	Nausea commonest 8-12 hours, other outcomes 20-24 hours. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Low risk	A - Adequate

### Wilson 1973

Methods	N; A; Y; N; Y; Y	
Participants	156 adults; 116 women; gynaecological/oral	
Interventions	Preoperative Either: oral DIAZEPAM 10mg; or HEPTABARBITONE 400mg; or LORAZEPAM 3mg	
Outcomes	Nausea or vomiting. Postop 0-18 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wilson 1979

Methods	N; B; N; N; Y; Y	
Participants	60 women; gynaecological; 16-60	
Interventions	Preoperative Either: DOMPERIDONE 10 or 15mg i.m.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-6 hours.	
Notes	No side effects. Unclear how retching categorized.	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Wilson 1996

Methods	Y; A; Y; N; Y; N	
Participants	527 adults; women 507; various surgery; exc' ASA>3, obese, pregnant/breastfeeding, study drug allergy, N&V/antiemetic	

**Wilson 1996** (Continued)

Interventions	Induction Either: PLACEBO; or GRANISETRON 0.1 or 1 or 3mg i.v.	
Outcomes	All outcomes. Postop 0-6; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects “similar”. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors’ judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wilson 2001**

Methods	N; B; Y; Y; N; N	
Participants	232 adults; 183 women; lap' chole"; ASA1-3; 18-73; exc' pregnancy, breastfeeding, obese, antiemetic, DM, post-hoc conversion/admission	
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 10mg i.v.; or ONDANSETRON 8mg	
Outcomes	All outcomes. Postop 0-4; 4-24 hours.	
Notes	Outcomes commonest 0-4 hours. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Winning 1977**

Methods	N; B; Y; N; Y; Y	
Participants	210 adults; 194 women; gynaecological/urological; mean 33	
Interventions	Preoperative Either: PLACEBO; or DIPHENIDOL 40mg i.m.; or DROPERIDOL 5mg	

### Winning 1977 (Continued)

Outcomes	Nausea; vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Retching categorized as vomiting. Unclear if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Woodward 1999

Methods	N; B; Y; Y; N; N	
Participants	216 adults; 39 women; cardiac; ASA2,3; 18-80; exc' >100kg, antiemetic/N&V	
Interventions	Preoperative Either: oral METOCLOPRAMIDE 10mg; or ONDANSETRON 16mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Low risk	A - Adequate

### Wrench 1996

Methods	Y; B; Y; Y; Y; Y	
Participants	60 women; gynaecological; ASA1,2	
Interventions	Intraoperative AND postoperative PCA Either: DROPERIDOL 1.25 mg i.v. then 3mg/60ml; or ONDANSETRON 4mg then 8mg/60ml; or both	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-6; 6-12; 12-18; 0-18 hours.	

**Wrench 1996** (Continued)

Notes	Nausea commonest 0-6 hours. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	High risk	C - Inadequate

**Wu 2000**

Methods	Y; B; Y; Y; N; N	
Participants	160 women; lap' chole'; ASA1-3; 16-65 (mean 33); exc' heart, blood, lung, renal, liver, CNS, endocrine disease, pregnancy, obese, drug abuse, antiemetic, allergy	
Interventions	Induction Either: PLACEBO; or DROPERIDOL 1.25mg i.v.; or ONDANSETRON 4mg; or both	
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-3.5; 3.5-24; 0-24 hours.	
Notes	Side effect "no difference". Retching categorized as vomiting	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Wu 2002**

Methods	N; B; N; N; Y; Y	
Participants	84 adults; no sex data; abdominal; ASA1,2	
Interventions	Either: PLACEBO; or DEXAMETHASONE 10mg iv	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement

**Wu 2002** (Continued)

Allocation concealment (selection bias)	Unclear risk	B - Unclear
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**Yazigi 2002**

Methods	Y; A; Y; N; Y; Y
Participants	100 women; Caesarean; ASA1,2; exc' pre/eclampsia, liver, renal, heart disease, motion sickness, pruritus, study drug allergy
Interventions	Intraoperative Either: PLACEBO; or ONDANSETRON 8mg i.v.
Outcomes	Nausea or vomiting; rescue antiemetic. Postop 0-24 hours.
Notes	No side effects.

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Yegin 2003**

Methods	N; B; Y; Y; Y; Y
Participants	45 adults; no sex data; perianal; ASA1; exc' study drug allergy
Interventions	Induction Either: PLACEBO; or intrathecal NEOSTIGMINE 25 or 50 mcg
Outcomes	Nausea; vomiting. Postop 0-24 hours.
Notes	Male/female incidences not recorded. Unclear if vomiters nauseated or categorized once or twice. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Yelken 2003**

Methods	N; B; Y; N; Y; Y
Participants	75 women; gynaecological; ASA1,2; mean 32;
Interventions	Intraoperative Either: PLACEBO; or DROPERIDOL 2.5mg iv; or GRANISETRON 3mg; or ON-DANSETRON 4mg; or TROPISERTRON 5mg
Outcomes	All outcomes. Postop 0-10; 10-15; 15-30; 30-60 minutes; 0-1 hour.
Notes	Nausea and vomiting commonest 10-15 minutes, nausea or vomiting 0-10 minutes. Side effects not recorded. Unclear how retching categorized or if vomiters nauseated or categorized once or twice

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Yilmazlar 1996**

Methods	N; B; N; N; Y; Y
Participants	60 adults; 49 women; thyroidectomy; ASA1,2; 22-60 (mean 46); exc' N&V, PONV, ASA>2
Interventions	Induction Either: PLACEBO; or METOCLOPRAMIDE 0.2mg/kg i.v.; or TROPISERTRON 5mg
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-4 hours.
Notes	Outcomes commonest 0-2 hours. Male/female incidences not reported. Side effects not recorded. Unclear how retching categorized

***Risk of bias***

Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear



### Yilmazlar 2001

Methods	N; B; Y; N; Y; Y	
Participants	60 women; thyroidectomy/breast; ASA1,2; mean 45; exc' N&V, PONV, ASA>2	
Interventions	Induction Either: PLACEBO; or TROPISETRON 2 or 5mg i.v.	
Outcomes	Vomiting; rescue antiemetic. Postop 0-2; 2-4 hours.	
Notes	Outcomes commonest 0-2 hours. Side effects not recorded. Unclear how retching categorized	
<i>Risk of bias</i>		
Bias	Authors' judgement	Support for judgement
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Yin 2002

Methods	N; B; Y; N; Y; Y	
Participants	60 adults; 11 women; various surgeries; 18-80 (mean 61); exc' ASA>3, hypotension, cardiac disease, clonidine	
Interventions	Preoperative Either: PLACEBO; or oral CLONIDINE 3 mcg/kg	
Outcomes	Nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not reported. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

### Zarate 2000

Methods	Y; B; Y; N; Y; Y	
Participants	200 adults; 88 women; ENT; ASA1,2; 20-75 (mean 45); exc' antiemetic, pregnancy, cardiac/CNS/renal/liver/GI/endocrine disease, drug abuse, obese	

**Zarate 2000** (Continued)

Interventions	Intraoperative Either: DOLASETRON 12.5 or 25mg i.v.; or ONDANSETRON 4 or 8mg	
Outcomes	Nausea; vomiting; rescue antiemetic. Postop 0-5; 5-24; 0-24 hours.	
Notes	Male/female incidences not reported. Side effects not recorded. Retching categorized as vomiting. Unclear if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Zatman 2001**

Methods	Y; B; Y; Y; N; N	
Participants	80 children; 50 girls; tonsil; 4-15; ASA1,2; exc' conditions affecting outcome	
Interventions	Preoperative Either: oral ERYTHROMYCIN 1mg/kg; or METOCLOPRAMIDE 0.15mg/kg	
Outcomes	Nausea. Postop 0-18 hours.	
Notes	Male/female incidences not reported. Side effects “no extrapyramidal”. Unclear how many vomited. Unclear ifretchers/vomiters nauseated	
<b><i>Risk of bias</i></b>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Zomers 1993**

Methods	Y; B; Y; N; Y; Y	
Participants	70 women; gynaecological; 18-75 (mean 47); exc' pregnancy, confounding conditions	
Interventions	Intraoperative Either: PLACEBO; or TROPISETRON 5mg i.v.	

**Zomers 1993** (Continued)

Outcomes	Nausea; vomiting; rescue antiemetic. PACU; PACU-24; 0-24 hours.	
Notes	No side effects. Unclear how retching categorized or if vomiters nauseated or categorized once or twice	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

**Zsigmond 1974**

Methods	N; B; N; N; Y; Y	
Participants	155 adults; 67 women; general	
Interventions	Preoperative Either: PLACEBO; or DIAZEPAM 5mg i.m.	
Outcomes	Nausea; vomiting; nausea or vomiting. Postop 0-24 hours.	
Notes	Male/female incidences not recorded. Side effects not recorded. Unclear how retching categorized	
<i><b>Risk of bias</b></i>		
<b>Bias</b>	<b>Authors' judgement</b>	<b>Support for judgement</b>
Allocation concealment (selection bias)	Unclear risk	B - Unclear

“Methods”: sample size calculation ('Y' yes, 'N' no); sequence generation ('A' adequate, 'B' unclear); outcome assessor blinded ('Y' yes, 'N' no); anaesthetist blinded ('Y' yes, 'N' no); intention to treat ('Y' yes, 'N' no); complete follow up ('Y' yes, 'N' no).

“Participants”: [numbers, unless specified, are ages in years];

'ASA' American Society of Anesthesiologists' grade; 'BMI' body mass index; 'chole' cholecystectomy; 'CNS' central nervous system; 'COPD' chronic obstructive pulmonary disease; 'D&C' dilation and curettage; 'DM' diabetes mellitus; 'exc' excluded; 'ETT' endotracheal tube; 'GI' gastrointestinal; 'HH' hiatus hernia; 'ICU' intensive care unit; 'IHD' ischaemic heart disease; 'IM' intramuscular; 'IOP' intraophthalmic pressure; 'lap' laparoscopic; 'MH' malignant hyperthermia; 'NG' nasogastric tube; 'NM' neuromuscular; 'NSAID' non-steroidal anti-inflammatory drug; 'NYHA' New York Heart Association angina grade; 'STOP' suction termination of pregnancy; 'steri' sterilization.

## Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
<a href="#">Abouleish 1999</a>	Treatment; 50% of patients were sick before the intervention
<a href="#">Alexander 1995b</a>	Subsequently published in more detail as Alexander 1997.
<a href="#">Alon 1987b</a>	Published in more detail as Alon 1987 (in which Placebo is compared to two additional groups; Droperidol and a higher dose of Haloperidol (5mg))
<a href="#">Alon 1993</a>	Subsequently published in more detail as Alon 1993b.
<a href="#">Ambesh 1999</a>	Postoperative nausea or vomiting not assessed.
<a href="#">Apfel 2003</a>	Design paper for the 'IMPACT' study, the results of which were subsequently published
<a href="#">April 1996b</a>	Published as April 1996
<a href="#">Araín 2002</a>	Postoperative nausea or vomiting not assessed.
<a href="#">Aromaa 1987</a>	Subsequently published in more detail as Tigerstedt 1988.
<a href="#">Arun 1987</a>	Observational study.
<a href="#">Assaf 1975b</a>	Patients were not aware that they were in a study. Informed consent was not sought
<a href="#">Assaf 1975</a>	Patients were not aware that they were in a study. Informed consent was not sought
<a href="#">Badalaty 1990</a>	Intraoperative outcomes only assessed, not postoperative.
<a href="#">Beer 2001</a>	Operation performed without general anaesthesia, sedation or regional blockade
<a href="#">Benhamou 1998</a>	Intraoperative outcomes only assessed, not postoperative
<a href="#">Boone 2002</a>	Unclear what number of women were nauseated or retched or vomited intraoperatively as opposed to postoperatively
<a href="#">Calamandrei 1994b</a>	Duplicate of Calamandrei 1994.
<a href="#">Campbell 1993</a>	Subsequently published as Lewis 1994.
<a href="#">Capouet 1996b</a>	Same as Capouet 1996.
<a href="#">Cavanaugh 1996</a>	No data were reported.
<a href="#">Chalmers 1984</a>	Preoperative incidence of nausea, not postoperative.

(Continued)

<a href="#">Chestnut 1989</a>	Preintervention nausea: droperidol group 9/41, metoclopramide group 9/40. Intraoperative postintervention nausea: droperidol group 8/41, metoclopramide group 12/40; vomiting: droperidol group 2/41, metoclopramide group 1/40. Unclear whether the preintervention and postintervention intraoperative symptomatic women had postoperative symptoms. Prophylaxis or treatment?
<a href="#">Cieslak 1995</a>	Subsequently published as Cieslak 1996.
<a href="#">Cole 1982</a>	Patients allocated to groups on the basis of hospital number (odd or even)
<a href="#">Cook-Sather 1998</a>	Published subsequently as Cook-Sather 2002.
<a href="#">Costas 1985</a>	Postoperative nausea or vomiting not assessed.
<a href="#">Cramb 1988</a>	Subsequently published in more detail as Cramb 1989.
<a href="#">Cugini 1997</a>	Trial of ketamine premedication versus no ketamine.
<a href="#">Danzer 1997</a>	Postoperative nausea or vomiting not assessed.
<a href="#">De-Oliveira 2000</a>	The outcomes (nausea; vomiting; nausea or vomiting; rescue antiemetics) were not assessed in this study
<a href="#">Dershwitz 1991</a>	Subsequently published in more detail as Dershwitz 1992.
<a href="#">Dershwitz 1992</a>	Subsequently published as part of McKenzie 1993b.
<a href="#">Dershwitz 1996</a>	Subsequently published in more detail as Dershwitz 1998.
<a href="#">Diemunsch 1994</a>	Subsequently published in more detail as Wilson 1996.
<a href="#">Diemunsch 1996</a>	Subsequently published in more detail as Diemunsch 1998.
<a href="#">Diemunsch 1999</a>	Treatment of established nausea and vomiting.
<a href="#">Dundee 1966</a>	Unclear whether the allocation to treatment was done in a random or pseudo-randomized way
<a href="#">Dundee 1974</a>	Patients were not aware that they were in a study. Informed consent was not sought
<a href="#">Fabling 1999</a>	Subsequently published in more detail as Fabling 2000.
<a href="#">Fry 1974</a>	The intervention was a combination of drug (metoclopramide) and intravenous fluid
<a href="#">Fujii 1998p</a>	Intraoperative outcomes.
<a href="#">Furst 1993</a>	Subsequently published in more detail as Furst 1994.
<a href="#">Gackle 1999</a>	Part of the subsequently published and more complete Eberhart 1999d

(Continued)

<a href="#">Gan 1993</a>	Subsequently published in more detail as Gan 1994.
<a href="#">Gan 1994b</a>	Subsequently published in more detail as Gan 1995.
<a href="#">Gan 1996</a>	Individuals allocated placebo or intervention on a non-random basis
<a href="#">Gan 1997b</a>	Published subsequently as Fortney 1998. This paper addresses patient satisfaction whilst Fortney 1998 records the incidences of nausea or vomiting
<a href="#">Geszteti 1998</a>	Subsequently published as part of the more detailed Geszteti 2000
<a href="#">Ghaly 1987</a>	The study was interrupted (droperidol not given after 12 administrations) and the results were only reported for acupuncture versus cyclizine
<a href="#">Gift 1995</a>	No control for either the nasal cannulae or the face tent (both supplying oxygen in the intervention groups)
<a href="#">Graczyk 1997</a>	Part of the subsequently published and more complete Philip 2000
<a href="#">Grasela 1994</a>	Observational study.
<a href="#">Gratz 1996</a>	Data forms part of Pearman 1994 and Kovac 1996b, which also contain data from McKenzie 1993 and Sung 1993 and Khalil 1994
<a href="#">Gulhas 2001</a>	Subsequently published in more detail as Gulhas 2003.
<a href="#">Hamid 1996</a>	Subsequently published in more detail as Hamid 1998.
<a href="#">Hannalah 1995</a>	Subsequently published as Patel 1997.
<a href="#">Helmerts1992</a>	Part of the subsequently published Rust 1994 (and same as Kenny 1992)
<a href="#">Hill 2000</a>	Same patients as Fortney 1998.
<a href="#">Houchin 1992</a>	The analgesic action of the local anaesthetic could indirectly contribute to a reduced incidence of emetic sequelae. No data were presented on what analgesic treatment was provided to the control group
<a href="#">Imbeloni 1986</a>	The postoperative incidences of nausea and vomiting were not assessed, but the intraoperative incidences were
<a href="#">Jakobsson 1991</a>	The allocation of people to either group was predictable and identifiable (even dates received ketobemidone, odd date midazolam)
<a href="#">Janknegt 1999b</a>	Published previously as Janknegt 1999.
<a href="#">Jellish 1998</a>	Same study as Jellish 1997.
<a href="#">Kenny 1992</a>	Part of the subsequently published Rust 1994 (and same as Helmerts 1992)

(Continued)

Khalil 1994	Subgroup of patients included in Pearman 1994.
Kivalo 1976	Treatment, not prevention, of postoperative nausea and vomiting
Klamt 1997	Postoperative nausea or vomiting not assessed.
Kostopanagiotou 1998	Outcomes of interest not assessed in this study.
Kovac 1992	Same as McKenzie 1993 (and data included in Pearman 1994 etc)
Kovac 1996	Subsequently published in more detail as Kovac 1996b
Lawhorn 1994	Part of the subsequently published Lawhorn 1997.
Lindblad 1990	Subsequently published in full detail as Beattie 1993.
Liu 1998	Subsequently published as part of Liu 1999.
Loers 1973	Recruitment to the diazepam group was discontinued after twenty patients because of agitation. The method of allocation was not described
Loper 1988	Subsequently published as part of the more detailed Loper 1989
Lopez 1995	Subsequently published in more detail as Lopez 1996.
Lopez 2000	Same as the previously published Lopez Herrera 1998.
Loughrey 2002	Postoperative nausea or vomiting not assessed.
Lussos 1992	Intraoperative, not postoperative, outcomes reported.
Manchikanti 1984	Postoperative nausea or vomiting not assessed.
Maranhão 1988	Recorded the incidences of intraoperative outcomes.
Martins 1981	Observational study.
Mattila 1983	Preoperative nausea or vomiting was recorded, not postoperative
McKenzie 1993	Same data as Pearman 1994, numbers different as not intention to treat
Michaloudis 1993	This study compares two groups with different masses of Droperidol in each: Droperidol 2.5mg versus (Droperidol 0.5mg and Metoclopramide 5mg and Hyoscine 0.1mg)
Mirakhur 1981	Historical controls.
Morrison 1970	Patients were not aware that they were in a study. Informed consent was not sought

(Continued)

Nelskyla 1998b	Subsequently published in more detail as Nelskyla 1998.
Nortcliffe 2001	Published subsequently with 9 additional patients as Nortcliffe 2003
Okamoto 1992	Not a prospective interventional controlled trial (appears to be a prospective observational non-allocated study)
Olsson 1982	Postoperative nausea or vomiting not assessed.
Olvera 1997	Postoperative nausea or vomiting not assessed.
Pan 1996	Intraoperative outcomes.
Parlow 1999	Some patients experienced nausea or vomiting before the administration of the antiemetic
Polati 1997	Treatment of postoperative nausea and vomiting.
Powell 2000	Postoperative nausea or vomiting not assessed.
Pueyo 2003	Results published previously as Sanchez 2002.
Ram 1999	Postoperative nausea or vomiting not assessed.
Rose 1994	Subsequently published as part of Rose 1996.
Rust 1995	Subsequently published as part of Morris 1998.
Sadove 1971	The outcomes for the different groups that received different premedications could not be determined from the paper
Santos 1984	Intraoperative outcomes.
Scholz 1996	Subsequently published in more detail as Scholz 1998.
Scuderi 1994	Part of subsequently published Scuderi 1997.
Scuderi 1997b	Subsequently published in more detail as Scuderi 1999.
Sen 2001	Intraoperative, not postoperative, nausea and vomiting.
Senders 1999	Postoperative nausea or vomiting not assessed.
Sjovall 1984	Preoperative incidences measured, but not postoperative.
Spelina 1984	Intraoperative incidences measured, but not postoperative.



(Continued)

<a href="#">Tan 1993</a>	Subsequently published as part of the more detailed Watcha 1995
<a href="#">Tang 1995</a>	Part of subsequently published Tang 1996.
<a href="#">Tang 1996b</a>	Subsequently published as Tang 1998.
<a href="#">Tang 1997</a>	Subsequently published as Tang 1998.
<a href="#">Thune 1995</a>	The interventions were not controlled for and the allocation of people to either group was predictable and identifiable(date of birth odd [metoclopramide] or even [hyoscine])
<a href="#">Tolksdorf 1991</a>	The allocation to the intervention groups depended upon the preferences of the children and parents
<a href="#">Tramer 1993</a>	The two groups systematically received different anaesthetics. In the ondansetron group anaesthesia was induced with thiopentone and maintained with isoflurane and air. In the lidocaine group anaesthesia was induced with propofol and maintained with propofol
<a href="#">Trapp 1989</a>	Allocation to study groups was not random or pseudorandom, but sequential
<a href="#">Ummenhofer 1993</a>	Subsequently published in more detail as Ummenhofer 1994.
<a href="#">Unlugenc 2003</a>	Treatment, not prevention, of PONV.
<a href="#">Ure 1999</a>	Intraoperative outcomes.
<a href="#">Vener 1994</a>	Subsequently published as Vener 1996.
<a href="#">Wallenborn 2003</a>	Not a comparative trial of interventions.
<a href="#">Warriner 1995</a>	Subsequently published as Warriner 1997.
<a href="#">Watcha 1994</a>	Intraoperative outcomes.
<a href="#">Williams 1995</a>	Reprint of the summary of Williams 1993.
<a href="#">Zarate 1999</a>	Subsequently published as EA 54.
<a href="#">Zomers 1993b</a>	Subsequently published in full as Zomers 1993.

## DATA AND ANALYSES

### Comparison 1. PRIMARY ANALYSIS: Placebo versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	337		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Alizapride	3	185	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.46, 0.92]
1.2 Atropine	1	21	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.07, 12.69]
1.3 Betamethasone	1	78	Risk Ratio (M-H, Random, 95% CI)	0.28 [0.10, 0.77]
1.4 Bromopride	1	200	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.18, 0.70]
1.5 Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.10, 19.50]
1.6 Cimetidine	2	146	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.16, 2.68]
1.7 Clebopride	1	80	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.20, 2.18]
1.8 Clonidine	10	576	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.46, 1.05]
1.9 CP-122,721	1	53	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.90, 1.11]
1.10 Cyclizine	5	638	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.47, 0.90]
1.11 Dexamethasone	51	4163	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.50, 0.69]
1.12 Diazepam	7	609	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.25, 0.99]
1.13 Dimenhydrinate	6	278	Risk Ratio (M-H, Random, 95% CI)	0.72 [0.47, 1.13]
1.14 Dixyrazine	1	60	Risk Ratio (M-H, Random, 95% CI)	1.23 [0.73, 2.09]
1.15 Dolasetron	13	2812	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.76, 0.90]
1.16 Domperidone	3	129	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.20, 1.94]
1.17 Droperidol	80	7174	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.60, 0.71]
1.18 Ephedrine	2	46	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.20, 1.23]
1.19 Ginger	6	460	Risk Ratio (M-H, Random, 95% CI)	0.87 [0.62, 1.23]
1.20 Granisetron	37	2950	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.45, 0.63]
1.21 Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.18 [0.04, 0.74]
1.22 Hyoscine	14	1008	Risk Ratio (M-H, Random, 95% CI)	0.63 [0.47, 0.83]
1.23 Intralipid	1	60	Risk Ratio (M-H, Random, 95% CI)	1.2 [0.41, 3.51]
1.24 Lorazepam	2	50	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.33, 0.93]
1.25 Lormetazepam	1	39	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.20, 3.07]
1.26 Magnesium	1	44	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.35, 2.40]
1.27 Methylalntrexone	1	120	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.39, 1.45]
1.28 Methylprednisolone	1	72	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.01, 7.92]
1.29 Metoclopramide	58	3001	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.76, 0.88]
1.30 Midazolam	3	145	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.64, 1.28]
1.31 Naloxone	1	60	Risk Ratio (M-H, Random, 95% CI)	0.47 [0.30, 0.74]
1.32 Neostigmine	5	198	Risk Ratio (M-H, Random, 95% CI)	2.73 [1.15, 6.48]
1.33 Ondansetron	114	15861	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.63, 0.74]
1.34 Perphenazine	3	595	Risk Ratio (M-H, Random, 95% CI)	1.15 [0.42, 3.12]
1.35 Physostigmine	1	100	Risk Ratio (M-H, Random, 95% CI)	4.80 [1.11, 20.82]
1.36 Prochlorperazine	7	453	Risk Ratio (M-H, Random, 95% CI)	0.73 [0.56, 0.96]
1.37 Promethazine	1	29	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.09, 1.88]
1.38 Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.29, 7.73]
1.39 Ramosetron	4	339	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.40, 0.96]
1.40 Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.54 [0.39, 0.75]
1.41 Tandoespiron	1	90	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.41, 1.06]
1.42 Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	0.17 [0.02, 1.20]
1.43 Trimethobenzamide	1	94	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.44, 2.30]

1.44 Tropisetron	19	1989	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.71, 0.84]
2 Vomiting	445		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Alizapride	3	185	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.29, 0.84]
2.2 Alprazolam	1	43	Risk Ratio (M-H, Random, 95% CI)	2.10 [0.20, 21.42]
2.3 Atropine	2	121	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.78, 1.58]
2.4 Betamethasone	1	78	Risk Ratio (M-H, Random, 95% CI)	0.18 [0.02, 1.39]
2.5 Bromopride	1	200	Risk Ratio (M-H, Random, 95% CI)	0.22 [0.08, 0.63]
2.6 Chloral Hydrate	1	65	Risk Ratio (M-H, Random, 95% CI)	0.51 [0.03, 7.80]
2.7 Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	0.34 [0.04, 2.64]
2.8 Cimetidine	2	146	Risk Ratio (M-H, Random, 95% CI)	0.47 [0.17, 1.32]
2.9 Cisapride	1	96	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.69, 1.62]
2.10 Clebopride	1	80	Risk Ratio (M-H, Random, 95% CI)	0.05 [0.00, 0.87]
2.11 Clonidine	12	739	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.53, 1.06]
2.12 CP-122,721	1	53	Risk Ratio (M-H, Random, 95% CI)	0.16 [0.02, 1.24]
2.13 Cyclizine	6	688	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.43, 0.75]
2.14 Dexamethasone	66	5594	Risk Ratio (M-H, Random, 95% CI)	0.51 [0.46, 0.57]
2.15 Diazepam	12	854	Risk Ratio (M-H, Random, 95% CI)	0.85 [0.58, 1.24]
2.16 Dimenhydrinate	12	940	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.46, 0.81]
2.17 Dixyrazine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.48, 0.97]
2.18 Dolasetron	15	2458	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.51, 0.76]
2.19 Domperidone	4	159	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.52, 1.23]
2.20 Droperidol	110	8084	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.61, 0.70]
2.21 Ephedrine	4	179	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.64, 1.27]
2.22 Flurbiprofen	1	90	Risk Ratio (M-H, Random, 95% CI)	0.89 [0.45, 1.77]
2.23 Ginger	5	440	Risk Ratio (M-H, Random, 95% CI)	1.04 [0.66, 1.64]
2.24 Granisetron	52	4088	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.35, 0.46]
2.25 Haloperidol	1	70	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.19, 0.79]
2.26 Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.06, 1.06]
2.27 Hyoscine	16	1385	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.56, 0.77]
2.28 Intralipid	1	60	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.62, 1.61]
2.29 Lidocaine	1	50	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.54, 3.29]
2.30 Lorazepam	3	91	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.33, 1.13]
2.31 Lormetazepam	1	39	Risk Ratio (M-H, Random, 95% CI)	3.15 [0.14, 72.88]
2.32 Magnesium	1	44	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
2.33 Methylnaltrexone	2	233	Risk Ratio (M-H, Random, 95% CI)	0.64 [0.30, 1.33]
2.34 Metoclopramide	80	4050	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.70, 0.81]
2.35 Midazolam	5	458	Risk Ratio (M-H, Random, 95% CI)	0.73 [0.56, 0.95]
2.36 Naloxone	1	60	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.17, 0.76]
2.37 Neostigmine	7	307	Risk Ratio (M-H, Random, 95% CI)	3.87 [0.79, 18.99]
2.38 Ondansetron	142	17958	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.50, 0.59]
2.39 Palonosetron	1	205	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.49, 1.11]
2.40 Pentobarbitone	1	24	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.74, 1.68]
2.41 Perphenazine	4	864	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.51, 0.96]
2.42 Physostigmine	1	100	Risk Ratio (M-H, Random, 95% CI)	1.44 [0.25, 8.26]
2.43 Prochlorperazine	8	502	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.52, 0.89]
2.44 Promethazine	3	56	Risk Ratio (M-H, Random, 95% CI)	0.76 [0.40, 1.45]
2.45 Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.24, 1.27]
2.46 Ramosetron	4	339	Risk Ratio (M-H, Random, 95% CI)	0.42 [0.28, 0.63]
2.47 Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.24, 0.68]
2.48 Sulpiride	1	50	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.06, 1.06]
2.49 Tandoespiron	1	90	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.34, 0.94]
2.50 Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	0.20 [0.03, 1.48]
2.51 Trimeprazine	1	24	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.26, 1.17]

2.52 Trimethobenzamide	1	94	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.41, 2.44]
2.53 Tropisetron	25	2428	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.50, 0.69]
3 Nausea or Vomiting	271		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Alizapride	2	95	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.39, 1.19]
3.2 Atropine	2	62	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.36, 2.31]
3.3 Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.18, 4.55]
3.4 Cimetidine	1	26	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.37, 4.82]
3.5 Clebopride	1	80	Risk Ratio (M-H, Random, 95% CI)	0.27 [0.10, 0.73]
3.6 Clonidine	8	457	Risk Ratio (M-H, Random, 95% CI)	0.73 [0.52, 1.02]
3.7 Cyclizine	4	608	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.58, 0.80]
3.8 Dexamethasone	46	3530	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.44, 0.54]
3.9 Diazepam	2	195	Risk Ratio (M-H, Random, 95% CI)	1.04 [0.51, 2.10]
3.10 Dimenhydrinate	6	377	Risk Ratio (M-H, Random, 95% CI)	0.71 [0.59, 0.86]
3.11 Dixyrazine	2	111	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.67, 1.02]
3.12 Dolasetron	12	1794	Risk Ratio (M-H, Random, 95% CI)	0.72 [0.62, 0.83]
3.13 Domperidone	6	289	Risk Ratio (M-H, Random, 95% CI)	0.71 [0.44, 1.13]
3.14 Droperidol	69	6101	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.58, 0.67]
3.15 Ephedrine	3	163	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.55, 1.15]
3.16 Ginger	3	235	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.75, 1.25]
3.17 Glycopyrrrolate	2	93	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.35, 1.29]
3.18 Granisetron	34	2652	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.31, 0.48]
3.19 Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.21 [0.07, 0.65]
3.20 Hyoscine	8	629	Risk Ratio (M-H, Random, 95% CI)	0.71 [0.56, 0.90]
3.21 Intralipid	1	60	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.76, 1.44]
3.22 Lidocaine	1	16	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.06, 4.47]
3.23 Magnesium	2	94	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.36, 1.72]
3.24 Methylprednisolone	1	30	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.36, 2.75]
3.25 Metoclopramide	54	2707	Risk Ratio (M-H, Random, 95% CI)	0.76 [0.70, 0.82]
3.26 Midazolam	2	91	Risk Ratio (M-H, Random, 95% CI)	1.44 [0.52, 3.94]
3.27 Neostigmine	9	488	Risk Ratio (M-H, Random, 95% CI)	3.19 [1.71, 5.93]
3.28 Ondansetron	79	6721	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.50, 0.63]
3.29 Palonosetron	1	348	Risk Ratio (M-H, Random, 95% CI)	0.72 [0.58, 0.89]
3.30 Perphenazine	3	610	Risk Ratio (M-H, Random, 95% CI)	0.71 [0.43, 1.15]
3.31 Prochlorperazine	5	438	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.55, 0.86]
3.32 Promethazine	2	41	Risk Ratio (M-H, Random, 95% CI)	0.46 [0.25, 0.82]
3.33 Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.44, 1.45]
3.34 Ramosetron	5	341	Risk Ratio (M-H, Random, 95% CI)	0.51 [0.39, 0.68]
3.35 Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.6 [0.36, 1.00]
3.36 Sulpiride	1	50	Risk Ratio (M-H, Random, 95% CI)	0.27 [0.10, 0.69]
3.37 Tandoespiron	1	90	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.46, 0.98]
3.38 Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	0.17 [0.02, 1.20]
3.39 Trimethobenzamide	1	94	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.47, 1.81]
3.40 Tropisetron	16	1184	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.61, 0.81]
4 Rescue antiemetic	294		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Alizapride	1	35	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.31, 1.12]
4.2 Atropine	1	41	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.06, 14.22]
4.3 Betamethasone	1	78	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.29, 1.55]
4.4 Cimetidine	1	26	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.34]
4.5 Clonidine	7	382	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.94, 1.27]
4.6 CP-122,721	1	53	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.38, 1.14]
4.7 Cyclizine	4	198	Risk Ratio (M-H, Random, 95% CI)	0.27 [0.14, 0.52]
4.8 Dexamethasone	47	4111	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.42, 0.59]
4.9 Diazepam	1	25	Risk Ratio (M-H, Random, 95% CI)	1.85 [0.41, 8.32]

4.10 Dimenhydrinate	8	721	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.33, 1.15]
4.11 Dixyrazine	2	111	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.30, 0.80]
4.12 Dolasetron	10	2805	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.57, 0.79]
4.13 Domperidone	1	37	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.42, 1.92]
4.14 Droperidol	74	6241	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.47, 0.60]
4.15 Ephedrine	3	149	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.41, 1.66]
4.16 Ginger	4	177	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.18, 0.88]
4.17 Glycopyrrolate	2	93	Risk Ratio (M-H, Random, 95% CI)	0.52 [0.18, 1.48]
4.18 Granisetron	42	3410	Risk Ratio (M-H, Random, 95% CI)	0.29 [0.22, 0.39]
4.19 Hyoscine	10	949	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.69, 1.21]
4.20 Intralipid	1	60	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.37, 4.21]
4.21 Lidocaine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.22 Lorazepam	1	26	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.86]
4.23 Methylnaltrexone	2	233	Risk Ratio (M-H, Random, 95% CI)	0.63 [0.33, 1.21]
4.24 Metoclopramide	44	2075	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.69, 0.88]
4.25 Midazolam	3	115	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.38, 0.98]
4.26 Naloxone	1	60	Risk Ratio (M-H, Random, 95% CI)	0.54 [0.32, 0.92]
4.27 Neostigmine	2	150	Risk Ratio (M-H, Random, 95% CI)	1.39 [0.55, 3.50]
4.28 Ondansetron	106	11383	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.49, 0.61]
4.29 Palonosetron	1	218	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.61, 0.99]
4.30 Pentobarbitone	1	24	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.17, 5.98]
4.31 Perphenazine	1	258	Risk Ratio (M-H, Random, 95% CI)	0.52 [0.25, 1.07]
4.32 Prochlorperazine	5	281	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.22, 1.08]
4.33 Promethazine	1	29	Risk Ratio (M-H, Random, 95% CI)	0.27 [0.03, 2.31]
4.34 Ramosetron	3	259	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.15, 0.99]
4.35 Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.86 [0.33, 2.25]
4.36 Tandoespiron	1	90	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.25, 1.02]
4.37 Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	0.2 [0.01, 3.80]
4.38 Trimeprazine	1	24	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.05, 4.81]
4.39 Tropisetron	24	1997	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.53, 0.72]

## Comparison 2. PRIMARY ANALYSIS: No Treatment versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	27		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Atropine	1	30	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.55]
1.2 Butorphanol	1	20	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.17, 5.77]
1.3 Chlorpromazine	1	25	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.11, 21.31]
1.4 Cimetidine	1	231	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.20, 0.76]
1.5 Dexamethasone	1	16	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.27, 1.20]
1.6 Diazepam	1	40	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.22, 2.01]
1.7 Dolasetron	1	92	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.81, 1.44]
1.8 Droperidol	11	1672	Risk Ratio (M-H, Random, 95% CI)	0.62 [0.44, 0.86]
1.9 Ephedrine	1	45	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.02, 2.54]
1.10 Hyoscine	1	34	Risk Ratio (M-H, Random, 95% CI)	1.27 [0.73, 2.21]
1.11 Metoclopramide	3	199	Risk Ratio (M-H, Random, 95% CI)	0.34 [0.17, 0.66]
1.12 Ondansetron	7	439	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.50, 0.86]
1.13 Promethazine	2	76	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.55, 1.20]

1.14 Ranitidine	1	420	Risk Ratio (M-H, Random, 95% CI)	0.28 [0.15, 0.52]
1.15 Tropisetron	1	68	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.49, 1.72]
2 Vomiting	42		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Atropine	1	30	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.23, 1.89]
2.2 Butorphanol	1	20	Risk Ratio (M-H, Random, 95% CI)	0.6 [0.19, 1.86]
2.3 Chlorpromazine	1	25	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.04, 1.77]
2.4 Cimetidine	1	231	Risk Ratio (M-H, Random, 95% CI)	0.30 [0.15, 0.59]
2.5 Dexamethasone	2	384	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.24, 0.65]
2.6 Diazepam	1	40	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.34, 2.93]
2.7 Dixyrazine	2	136	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.18, 0.53]
2.8 Dolasetron	1	92	Risk Ratio (M-H, Random, 95% CI)	0.52 [0.30, 0.91]
2.9 Domperidone	1	30	Risk Ratio (M-H, Random, 95% CI)	0.29 [0.07, 1.16]
2.10 Droperidol	15	2060	Risk Ratio (M-H, Random, 95% CI)	0.63 [0.52, 0.76]
2.11 Ephedrine	1	45	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.29, 1.07]
2.12 Hyoscine	2	84	Risk Ratio (M-H, Random, 95% CI)	0.30 [0.13, 0.74]
2.13 Lidocaine	1	79	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.58, 1.48]
2.14 Metoclopramide	5	470	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.30, 0.79]
2.15 Ondansetron	12	868	Risk Ratio (M-H, Random, 95% CI)	0.42 [0.34, 0.52]
2.16 Prochlorperazine	1	158	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.49, 1.24]
2.17 Promethazine	2	76	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.15, 1.84]
2.18 Ranitidine	1	420	Risk Ratio (M-H, Random, 95% CI)	0.17 [0.09, 0.32]
2.19 Tropisetron	1	68	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.32, 5.51]
3 Nausea or Vomiting	20		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Atropine	1	68	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.38, 1.26]
3.2 Butorphanol	1	20	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.37, 1.85]
3.3 Chlorpromazine	1	53	Risk Ratio (M-H, Random, 95% CI)	0.28 [0.10, 0.76]
3.4 Droperidol	9	1619	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.41, 0.78]
3.5 Ephedrine	1	45	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.30, 0.99]
3.6 Metoclopramide	2	181	Risk Ratio (M-H, Random, 95% CI)	0.35 [0.17, 0.74]
3.7 Neostigmine	1	120	Risk Ratio (M-H, Random, 95% CI)	2.53 [0.87, 7.41]
3.8 Ondansetron	5	388	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.44, 0.72]
3.9 Promethazine	1	36	Risk Ratio (M-H, Random, 95% CI)	0.86 [0.57, 1.29]
3.10 Tropisetron	1	68	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.60, 1.66]
4 Rescue antiemetic	18		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Butorphanol	1	20	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.32, 7.14]
4.2 Dexamethasone	1	16	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.13, 2.00]
4.3 Dixyrazine	2	136	Risk Ratio (M-H, Random, 95% CI)	0.08 [0.01, 0.61]
4.4 Dolasetron	1	92	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.71, 1.33]
4.5 Droperidol	6	291	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.40, 0.82]
4.6 Hyoscine	1	34	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.33, 3.13]
4.7 Lidocaine	1	78	Risk Ratio (M-H, Random, 95% CI)	0.21 [0.05, 0.91]
4.8 Metoclopramide	1	80	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.9 Neostigmine	1	120	Risk Ratio (M-H, Random, 95% CI)	3.95 [0.24, 65.27]
4.10 Ondansetron	6	544	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.32, 0.79]
4.11 Tropisetron	1	68	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.45, 1.85]



### Comparison 3. PRIMARY ANALYSIS: Drug versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	188		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Alizapride versus Droperidol	1	35	Risk Ratio (M-H, Random, 95% CI)	1.43 [0.58, 3.55]
1.2 Alizapride versus Metoclopramide	1	35	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.43, 1.56]
1.3 Alizapride versus Ondansetron	1	52	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.07, 16.36]
1.4 Atropine versus Chlorpromazine	1	25	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.05, 9.47]
1.5 Atropine versus Glycopyrrolate	1	100	Risk Ratio (M-H, Random, 95% CI)	0.64 [0.31, 1.35]
1.6 Atropine versus Hyoscine	2	100	Risk Ratio (M-H, Random, 95% CI)	2.33 [0.98, 5.58]
1.7 Bromazepam versus Lorazepam	1	153	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.38, 1.41]
1.8 Butorphanol versus Droperidol	1	20	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.17, 5.77]
1.9 Cimetidine versus Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	5.0 [0.28, 88.53]
1.10 Clonidine versus Diazepam	1	100	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.76, 2.51]
1.11 Clonidine versus Droperidol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.11 [0.01, 1.90]
1.12 Clonidine versus Midazolam	1	100	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.18, 1.83]
1.13 Clonidine versus Neostigmine	1	10	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.04, 1.52]
1.14 CP-122,721 versus Ondansetron	1	53	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.90, 1.11]
1.15 Cyclizine versus Dexamethasone	1	30	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.24, 1.27]
1.16 Cyclizine versus Droperidol	1	50	Risk Ratio (M-H, Random, 95% CI)	0.7 [0.32, 1.54]
1.17 Cyclizine versus Ondansetron	2	133	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.69, 1.44]
1.18 Cyclizine versus Perphenazine	2	425	Risk Ratio (M-H, Random, 95% CI)	0.49 [0.08, 2.92]
1.19 Dexamethasone versus Dolasetron	1	14	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.06, 4.33]
1.20 Dexamethasone versus Droperidol	6	313	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.64, 1.84]
1.21 Dexamethasone versus Granisetron	2	54	Risk Ratio (M-H, Random, 95% CI)	1.65 [0.54, 5.04]
1.22 Dexamethasone versus Metoclopramide	3	92	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.28, 1.34]

1.23 Dexamethasone versus Ondansetron	7	318	Risk Ratio (M-H, Random, 95% CI)	1.27 [0.94, 1.71]
1.24 Dexamethasone versus Tropisetron	2	78	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.22, 0.78]
1.25 Diazepam versus Droperidol	1	50	Risk Ratio (M-H, Random, 95% CI)	1.95 [0.76, 5.00]
1.26 Diazepam versus Flunitrazepam	2	130	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.42, 1.51]
1.27 Diazepam versus Midazolam	1	60	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.54, 1.86]
1.28 Diazepam versus Pentobarbitone	1	50	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
1.29 Diazepam versus Promethazine	2	60	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.39, 1.76]
1.30 Difenidol versus Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 13.64]
1.31 Difenidol versus Ondansetron	1	18	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.14, 65.16]
1.32 Dimenhydrinate versus Droperidol	2	60	Risk Ratio (M-H, Random, 95% CI)	1.70 [0.73, 3.99]
1.33 Dimenhydrinate versus Metoclopramide	2	43	Risk Ratio (M-H, Random, 95% CI)	1.51 [0.43, 5.33]
1.34 Dimenhydrinate versus Ondansetron	3	156	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.51, 1.26]
1.35 Dolasetron versus Droperidol	3	109	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.62, 1.82]
1.36 Dolasetron versus Metoclopramide	4	227	Risk Ratio (M-H, Random, 95% CI)	0.85 [0.57, 1.26]
1.37 Dolasetron versus Ondansetron	5	527	Risk Ratio (M-H, Random, 95% CI)	1.02 [0.81, 1.28]
1.38 Dolasetron versus Tropisetron	1	41	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.72, 1.52]
1.39 Domperidone versus Droperidol	2	69	Risk Ratio (M-H, Random, 95% CI)	0.96 [0.23, 4.05]
1.40 Domperidone versus Granisetron	1	100	Risk Ratio (M-H, Random, 95% CI)	4.0 [1.20, 13.32]
1.41 Domperidone versus Metoclopramide	4	232	Risk Ratio (M-H, Random, 95% CI)	0.94 [0.62, 1.43]
1.42 Droperidol versus Ephedrine	1	16	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.28, 3.54]
1.43 Droperidol versus Ginger	1	19	Risk Ratio (M-H, Random, 95% CI)	0.9 [0.16, 5.13]
1.44 Droperidol versus Granisetron	19	782	Risk Ratio (M-H, Random, 95% CI)	1.36 [1.05, 1.77]
1.45 Droperidol versus Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	3.5 [0.80, 15.23]
1.46 Droperidol versus Hyoscine	1	40	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.42, 1.00]
1.47 Droperidol versus Metoclopramide	27	726	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.74, 1.10]
1.48 Droperidol versus Ondansetron	33	2386	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.88, 1.03]



1.49 Droperidol versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.48 [0.78, 15.46]
1.50 Droperidol versus Tropisetron	2	169	Risk Ratio (M-H, Random, 95% CI)	1.07 [0.86, 1.33]
1.51 Ephedrine versus Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.04, 2.85]
1.52 Erythromycin versus Metoclopramide	1	74	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.32, 3.17]
1.53 Ginger versus Metoclopramide	2	60	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.54, 1.59]
1.54 Glycopyrrolate versus Hyoscine	1	60	Risk Ratio (M-H, Random, 95% CI)	2.67 [0.78, 9.09]
1.55 Granisetron versus Metoclopramide	11	318	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.31, 0.81]
1.56 Granisetron versus Ramosetron	5	416	Risk Ratio (M-H, Random, 95% CI)	2.34 [1.11, 4.94]
1.57 Lidocaine versus Metoclopramide	1	100	Risk Ratio (M-H, Random, 95% CI)	4.06 [1.45, 11.39]
1.58 Metoclopramide versus Nabilone	1	53	Risk Ratio (M-H, Random, 95% CI)	0.96 [0.69, 1.35]
1.59 Metoclopramide versus Ondansetron	31	1970	Risk Ratio (M-H, Random, 95% CI)	1.22 [1.01, 1.47]
1.60 Metoclopramide versus Perphenazine	1	25	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.01, 6.94]
1.61 Metoclopramide versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.48 [0.78, 15.46]
1.62 Metoclopramide versus Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.21, 19.44]
1.63 Metoclopramide versus Trimethobenzamide	1	95	Risk Ratio (M-H, Random, 95% CI)	0.87 [0.37, 2.06]
1.64 Metoclopramide versus Tropisetron	3	120	Risk Ratio (M-H, Random, 95% CI)	0.86 [0.50, 1.48]
1.65 Ondansetron versus Prochlorperazine	4	301	Risk Ratio (M-H, Random, 95% CI)	0.96 [0.49, 1.86]
1.66 Ondansetron versus Prometazine	3	83	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.46, 1.40]
1.67 Ondansetron versus Tropisetron	8	377	Risk Ratio (M-H, Random, 95% CI)	1.15 [0.82, 1.60]
2 Vomiting	258		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Alizapride versus Droperidol	1	35	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.45, 3.03]
2.2 Alizapride versus Metoclopramide	1	35	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.37, 1.68]
2.3 Alizapride versus Ondansetron	1	52	Risk Ratio (M-H, Random, 95% CI)	7.54 [0.41, 139.04]
2.4 Alprazolam versus Chloral hydrate	1	32	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.11, 10.31]
2.5 Alprazolam versus Diazepam	1	32	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.11, 10.31]
2.6 Alprazolam versus Midazolam	1	41	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.15, 6.13]

2.7 Atropine versus Chlorpromazine	1	25	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.24, 16.61]
2.8 Atropine versus Glycopyrrrolate	2	190	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.50, 0.90]
2.9 Atropine versus Hyoscine	2	100	Risk Ratio (M-H, Random, 95% CI)	3.12 [1.56, 6.25]
2.10 Bromazepam versus Lorazepam	1	153	Risk Ratio (M-H, Random, 95% CI)	0.48 [0.12, 1.85]
2.11 Butorphanol versus Droperidol	1	20	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.37, 24.17]
2.12 Chloral Hydrate versus Diazepam	1	22	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.05]
2.13 Chloral Hydrate versus Midazolam	1	31	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.09, 8.93]
2.14 Cimetidine versus Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
2.15 Clonidine versus Diazepam	3	213	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.29, 1.15]
2.16 Clonidine versus Midazolam	3	274	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.31, 2.10]
2.17 Clonidine versus Neostigmine	1	10	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
2.18 CP-122,721 versus Ondansetron	1	53	Risk Ratio (M-H, Random, 95% CI)	0.35 [0.08, 1.56]
2.19 Cyclizine versus Dexamethasone	1	30	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.24, 1.27]
2.20 Cyclizine versus Droperidol	1	50	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.27, 8.22]
2.21 Cyclizine versus Ondansetron	3	183	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.58, 3.18]
2.22 Cyclizine versus Perphenazine	2	440	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.55, 1.16]
2.23 Dexamethasone versus Dolasetron	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
2.24 Dexamethasone versus Droperidol	6	313	Risk Ratio (M-H, Random, 95% CI)	0.96 [0.48, 1.93]
2.25 Dexamethasone versus Granisetron	3	104	Risk Ratio (M-H, Random, 95% CI)	1.75 [0.85, 3.62]
2.26 Dexamethasone versus Metoclopramide	3	92	Risk Ratio (M-H, Random, 95% CI)	0.45 [0.17, 1.20]
2.27 Dexamethasone versus Ondansetron	7	318	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.84, 2.26]
2.28 Dexamethasone versus Perphenazine	1	226	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.99, 1.92]
2.29 Dexamethasone versus Tropisetron	2	78	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.13, 1.11]
2.30 Diazepam versus Droperidol	2	116	Risk Ratio (M-H, Random, 95% CI)	2.16 [1.39, 3.34]
2.31 Diazepam versus Flunitrazepam	3	271	Risk Ratio (M-H, Random, 95% CI)	1.74 [1.04, 2.91]
2.32 Diazepam versus Midazolam	2	71	Risk Ratio (M-H, Random, 95% CI)	2.08 [0.28, 15.60]

2.33 Diazepam versus Phenobarbitone	3	130	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.66, 1.38]
2.34 Diazepam versus Promethazine	2	60	Risk Ratio (M-H, Random, 95% CI)	1.78 [0.32, 10.03]
2.35 Diazepam versus Triclofos	1	200	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.82, 1.37]
2.36 Diazepam versus Trimeprazine	3	126	Risk Ratio (M-H, Random, 95% CI)	1.96 [0.98, 3.90]
2.37 Difenidol versus Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.03, 1.82]
2.38 Difenidol versus Ondansetron	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 13.64]
2.39 Dimenhydrinate versus Droperidol	3	179	Risk Ratio (M-H, Random, 95% CI)	0.93 [0.53, 1.64]
2.40 Dimenhydrinate versus Metoclopramide	3	162	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.46, 1.36]
2.41 Dimenhydrinate versus Ondansetron	4	181	Risk Ratio (M-H, Random, 95% CI)	1.76 [1.09, 2.85]
2.42 Dimenhydrinate versus Tropisetron	1	118	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.45, 1.44]
2.43 Dixyrazine versus Droperidol	1	21	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.21, 2.08]
2.44 Dolasetron versus Droperidol	3	109	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.50, 1.30]
2.45 Dolasetron versus Metoclopramide	4	227	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.19, 0.65]
2.46 Dolasetron versus Ondansetron	7	781	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.94, 1.45]
2.47 Dolasetron versus Tropisetron	1	41	Risk Ratio (M-H, Random, 95% CI)	1.31 [0.84, 2.06]
2.48 Domperidone versus Droperidol	2	69	Risk Ratio (M-H, Random, 95% CI)	2.13 [0.82, 5.53]
2.49 Domperidone versus Granisetron	1	100	Risk Ratio (M-H, Random, 95% CI)	3.2 [1.27, 8.07]
2.50 Domperidone versus Metoclopramide	4	231	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.64, 1.59]
2.51 Droperidol versus Ephedrine	2	48	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.15, 6.45]
2.52 Droperidol versus Ginger	1	19	Risk Ratio (M-H, Random, 95% CI)	0.45 [0.05, 4.16]
2.53 Droperidol versus Granisetron	24	1008	Risk Ratio (M-H, Random, 95% CI)	2.16 [1.71, 2.72]
2.54 Droperidol versus Haloperidol	1	69	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.15, 2.52]
2.55 Droperidol versus Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.67, 13.46]
2.56 Droperidol versus Hyoscine	1	40	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.21, 1.20]
2.57 Droperidol versus Lidocaine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.46 [0.21, 1.02]
2.58 Droperidol versus Lorazepam	1	41	Risk Ratio (M-H, Random, 95% CI)	1.90 [0.55, 6.60]

2.59 Droperidol versus Metoclopramide	39	1206	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.71, 0.96]
2.60 Droperidol versus Midazolam	2	543	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.63, 0.94]
2.61 Droperidol versus Ondansetron	45	2529	Risk Ratio (M-H, Random, 95% CI)	1.22 [1.09, 1.37]
2.62 Droperidol versus Prochlorperazine	1	34	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.42, 9.50]
2.63 Droperidol versus Promethazine	1	100	Risk Ratio (M-H, Random, 95% CI)	5.6 [2.35, 13.33]
2.64 Droperidol versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.66, 13.69]
2.65 Droperidol versus Sulpiride	1	38	Risk Ratio (M-H, Random, 95% CI)	1.92 [0.30, 12.13]
2.66 Droperidol versus Tropisetron	4	326	Risk Ratio (M-H, Random, 95% CI)	1.10 [0.54, 2.22]
2.67 Ephedrine versus Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.36, 2.75]
2.68 Erythromycin versus Metoclopramide	1	74	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.32, 3.17]
2.69 Ginger versus Metoclopramide	1	40	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.10, 2.43]
2.70 Glycopyrrolate versus Hyoscine	1	60	Risk Ratio (M-H, Random, 95% CI)	2.67 [1.21, 5.88]
2.71 Granisetron versus Metoclopramide	13	376	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.26, 0.59]
2.72 Granisetron versus Perphenazine	2	190	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.21, 0.62]
2.73 Granisetron versus Ramosetron	7	546	Risk Ratio (M-H, Random, 95% CI)	2.82 [1.69, 4.71]
2.74 Haloperidol versus Metoclopramide	1	85	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.38, 2.15]
2.75 Lidocaine versus Metoclopramide	1	100	Risk Ratio (M-H, Random, 95% CI)	3.25 [0.35, 30.19]
2.76 Lorazepam versus Promethazine	1	138	Risk Ratio (M-H, Random, 95% CI)	6.36 [0.79, 51.43]
2.77 Lorazepam versus Trimeprazine	1	199	Risk Ratio (M-H, Random, 95% CI)	3.42 [1.83, 6.40]
2.78 Metoclopramide versus Nabilone	1	53	Risk Ratio (M-H, Random, 95% CI)	1.24 [0.79, 1.93]
2.79 Metoclopramide versus Ondansetron	43	2624	Risk Ratio (M-H, Random, 95% CI)	1.48 [1.23, 1.77]
2.80 Metoclopramide versus Perphenazine	3	327	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.37, 1.54]
2.81 Metoclopramide versus Prochlorperazine	1	34	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.56, 11.16]
2.82 Metoclopramide versus Promethazine	1	11	Risk Ratio (M-H, Random, 95% CI)	2.4 [0.30, 19.34]
2.83 Metoclopramide versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.48 [0.78, 15.46]

2.84 Metoclopramide versus Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.34]
2.85 Metoclopramide versus Trimethobenzamide	1	95	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.40, 2.39]
2.86 Metoclopramide versus Tropisetron	5	257	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.70, 2.53]
2.87 Ondansetron versus Perphenazine	1	216	Risk Ratio (M-H, Random, 95% CI)	1.07 [0.79, 1.46]
2.88 Ondansetron versus Prochlorperazine	4	324	Risk Ratio (M-H, Random, 95% CI)	0.87 [0.50, 1.50]
2.89 Ondansetron versus Prometazine	4	98	Risk Ratio (M-H, Random, 95% CI)	0.84 [0.48, 1.45]
2.90 Ondansetron versus Tropisetron	8	406	Risk Ratio (M-H, Random, 95% CI)	1.53 [1.15, 2.04]
2.91 Pentobarbitone versus Trimeprazine	2	78	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.33, 4.32]
3 Nausea or Vomiting	167		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Alizapride versus Droperidol	1	35	Risk Ratio (M-H, Random, 95% CI)	1.43 [0.58, 3.55]
3.2 Alizapride versus Metoclopramide	1	35	Risk Ratio (M-H, Random, 95% CI)	0.82 [0.43, 1.56]
3.3 Alizapride versus Ondansetron	1	52	Risk Ratio (M-H, Random, 95% CI)	4.32 [0.52, 36.09]
3.4 Atropine versus Chlorpromazine	1	25	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.24, 16.61]
3.5 Atropine versus Glycopyrrolate	2	71	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.20, 2.17]
3.6 Atropine versus Hyoscine	2	100	Risk Ratio (M-H, Random, 95% CI)	2.79 [1.74, 4.45]
3.7 Butorphanol versus Droperidol	1	20	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.63, 10.00]
3.8 Chlorpromazine versus Droperidol	1	16	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.85, 10.63]
3.9 Chlorpromazine versus Lidocaine	1	16	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.75, 5.33]
3.10 Cimetidine versus Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.23, 17.34]
3.11 Clonidine versus Diazepam	1	100	Risk Ratio (M-H, Random, 95% CI)	1.07 [0.78, 1.45]
3.12 Clonidine versus Midazolam	3	175	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.41, 1.37]
3.13 Clonidine versus Neostigmine	2	23	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.11, 0.86]
3.14 Cyclizine versus Droperidol	1	50	Risk Ratio (M-H, Random, 95% CI)	0.7 [0.32, 1.54]
3.15 Cyclizine versus Metoclopramide	1	55	Risk Ratio (M-H, Random, 95% CI)	2.07 [0.99, 4.34]
3.16 Cyclizine versus Ondansetron	3	190	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.73, 1.95]
3.17 Cyclizine versus Perphenazine	2	440	Risk Ratio (M-H, Random, 95% CI)	0.85 [0.58, 1.26]

3.18 Dexamethasone versus Dolasetron	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.30, 3.35]
3.19 Dexamethasone versus Droperidol	6	313	Risk Ratio (M-H, Random, 95% CI)	1.04 [0.72, 1.52]
3.20 Dexamethasone versus Granisetron	1	40	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.94, 6.66]
3.21 Dexamethasone versus Metoclopramide	3	92	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.35, 0.99]
3.22 Dexamethasone versus Ondansetron	7	304	Risk Ratio (M-H, Random, 95% CI)	1.23 [0.96, 1.59]
3.23 Dexamethasone versus Tropisetron	2	78	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.22, 0.78]
3.24 Diazepam versus Flunitrazepam	3	287	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.44, 4.56]
3.25 Diazepam versus Heptabarbitalone	1	48	Risk Ratio (M-H, Random, 95% CI)	1.28 [0.73, 2.27]
3.26 Diazepam versus Lorazepam	1	46	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.60, 1.66]
3.27 Diazepam versus Pentobarbitalone	1	50	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
3.28 Diazepam versus Promethazine	1	20	Risk Ratio (M-H, Random, 95% CI)	0.86 [0.45, 1.64]
3.29 Difenidol versus Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	0.4 [0.10, 1.55]
3.30 Difenidol versus Ondansetron	1	18	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.22, 18.33]
3.31 Dimenhydrinate versus Droperidol	2	60	Risk Ratio (M-H, Random, 95% CI)	1.31 [0.58, 2.96]
3.32 Dimenhydrinate versus Metoclopramide	2	43	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.44, 2.70]
3.33 Dimenhydrinate versus Ondansetron	1	32	Risk Ratio (M-H, Random, 95% CI)	0.85 [0.38, 1.89]
3.34 Dolasetron versus Droperidol	4	161	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.77, 1.17]
3.35 Dolasetron versus Metoclopramide	4	227	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.47, 1.04]
3.36 Dolasetron versus Ondansetron	4	327	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.83, 1.27]
3.37 Dolasetron versus Tropisetron	1	41	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.76, 1.45]
3.38 Domperidone versus Droperidol	3	102	Risk Ratio (M-H, Random, 95% CI)	1.80 [1.05, 3.08]
3.39 Domperidone versus Granisetron	1	100	Risk Ratio (M-H, Random, 95% CI)	3.71 [1.78, 7.76]
3.40 Domperidone versus Metoclopramide	7	335	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.72, 1.13]
3.41 Droperidol versus Ephedrine	1	32	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.41, 2.45]
3.42 Droperidol versus Granisetron	18	744	Risk Ratio (M-H, Random, 95% CI)	2.08 [1.55, 2.80]

3.43 Droperidol versus Hydroxyzine	1	50	Risk Ratio (M-H, Random, 95% CI)	3.67 [1.16, 11.58]
3.44 Droperidol versus Hyoscine	1	40	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.42, 1.00]
3.45 Droperidol versus Lidocaine	1	10	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.06, 3.91]
3.46 Droperidol versus Metoclopramide	23	742	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.65, 0.91]
3.47 Droperidol versus Midazolam	1	150	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.55, 0.88]
3.48 Droperidol versus Ondansetron	23	1572	Risk Ratio (M-H, Random, 95% CI)	0.99 [0.88, 1.12]
3.49 Droperidol versus Phenobarbitone	1	56	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.39, 1.24]
3.50 Droperidol versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	2.98 [1.08, 8.24]
3.51 Droperidol versus Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.48, 1.74]
3.52 Droperidol versus Sulpiride	1	38	Risk Ratio (M-H, Random, 95% CI)	2.40 [0.78, 7.45]
3.53 Droperidol versus Tropisetron	3	218	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.81, 1.30]
3.54 Ephedrine versus Propofol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.34, 1.64]
3.55 Ginger versus Metoclopramide	2	60	Risk Ratio (M-H, Random, 95% CI)	0.94 [0.57, 1.53]
3.56 Glycopyrrolate versus Hyoscine	1	60	Risk Ratio (M-H, Random, 95% CI)	2.67 [1.50, 4.74]
3.57 Granisetron versus Metoclopramide	11	318	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.27, 0.55]
3.58 Granisetron versus Ondansetron	1	13	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.36, 3.76]
3.59 Granisetron versus Ramosetron	5	416	Risk Ratio (M-H, Random, 95% CI)	2.50 [1.18, 5.29]
3.60 Granisetron versus Tropisetron	1	12	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.32, 3.10]
3.61 Metoclopramide versus Ondansetron	22	1016	Risk Ratio (M-H, Random, 95% CI)	1.28 [1.03, 1.58]
3.62 Metoclopramide versus Perphenazine	1	25	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.06, 13.18]
3.63 Metoclopramide versus Promethazine	1	11	Risk Ratio (M-H, Random, 95% CI)	2.4 [0.30, 19.34]
3.64 Metoclopramide versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.48 [1.29, 9.39]
3.65 Metoclopramide versus Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.21, 19.44]
3.66 Metoclopramide versus Trimethobenzamide	1	95	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.44, 1.83]
3.67 Metoclopramide versus Tropisetron	4	142	Risk Ratio (M-H, Random, 95% CI)	1.20 [0.88, 1.62]

3.68 Ondansetron versus Prochlorperazine	4	387	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.43, 0.87]
3.69 Ondansetron versus Prometazine	3	83	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.46, 1.22]
3.70 Ondansetron versus Tropisetron	7	300	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.88, 1.36]
4 Rescue antiemetic	167		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Alizapride versus Droperidol	1	35	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.45, 3.03]
4.2 Alizapride versus Metoclopramide	1	35	Risk Ratio (M-H, Random, 95% CI)	0.94 [0.40, 2.18]
4.3 Atropine versus Glycopyrrolate	3	231	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.21, 2.27]
4.4 Atropine versus Hyoscine	2	100	Risk Ratio (M-H, Random, 95% CI)	3.0 [1.49, 6.03]
4.5 Butorphanol versus Droperidol	1	20	Risk Ratio (M-H, Random, 95% CI)	7.0 [0.41, 120.16]
4.6 Cimetidine versus Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
4.7 Clonidine versus Diazepam	1	60	Risk Ratio (M-H, Random, 95% CI)	5.0 [0.62, 40.28]
4.8 Clonidine versus Droperidol	1	30	Risk Ratio (M-H, Random, 95% CI)	0.11 [0.01, 1.90]
4.9 CP-122,721 versus Ondansetron	1	52	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.45, 1.25]
4.10 Cyclizine versus Dexamethasone	1	30	Risk Ratio (M-H, Random, 95% CI)	0.22 [0.06, 0.86]
4.11 Cyclizine versus Ondansetron	3	183	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.30, 1.39]
4.12 Dexamethasone versus Droperidol	5	274	Risk Ratio (M-H, Random, 95% CI)	1.18 [0.68, 2.06]
4.13 Dexamethasone versus Granisetron	3	104	Risk Ratio (M-H, Random, 95% CI)	7.95 [1.03, 61.15]
4.14 Dexamethasone versus Metoclopramide	2	78	Risk Ratio (M-H, Random, 95% CI)	0.51 [0.19, 1.36]
4.15 Dexamethasone versus Ondansetron	7	304	Risk Ratio (M-H, Random, 95% CI)	1.16 [0.76, 1.78]
4.16 Dexamethasone versus Perphenazine	1	226	Risk Ratio (M-H, Random, 95% CI)	1.84 [0.81, 4.17]
4.17 Dexamethasone versus Tropisetron	2	78	Risk Ratio (M-H, Random, 95% CI)	0.44 [0.19, 1.04]
4.18 Diazepam versus Droperidol	1	65	Risk Ratio (M-H, Random, 95% CI)	2.44 [1.13, 5.30]
4.19 Diazepam versus Pentobarbitone	2	75	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.28, 6.91]
4.20 Diazepam versus Promethazine	1	20	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.42, 2.40]
4.21 Diazepam versus Trimetoprim	1	25	Risk Ratio (M-H, Random, 95% CI)	2.77 [0.33, 23.14]
4.22 Dimenhydrinate versus Droperidol	1	24	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.21]



4.23 Dimenhydrinate versus Metoclopramide	1	26	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.21, 19.44]
4.24 Dimenhydrinate versus Ondansetron	3	156	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.64, 1.43]
4.25 Dixyrazine versus Droperidol	1	21	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.26 Dolasetron versus Droperidol	1	53	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.79, 1.42]
4.27 Dolasetron versus Metoclopramide	2	180	Risk Ratio (M-H, Random, 95% CI)	0.55 [0.33, 0.94]
4.28 Dolasetron versus Ondansetron	6	732	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.77, 1.22]
4.29 Dolasetron versus Tropisetron	1	41	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.76, 1.45]
4.30 Domperidone versus Droperidol	1	36	Risk Ratio (M-H, Random, 95% CI)	1.67 [0.56, 4.95]
4.31 Domperidone versus Granisetron	1	100	Risk Ratio (M-H, Random, 95% CI)	23.0 [1.39, 380.01]
4.32 Domperidone versus Metoclopramide	3	186	Risk Ratio (M-H, Random, 95% CI)	0.93 [0.58, 1.48]
4.33 Droperidol versus Ephedrine	2	48	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.24, 2.59]
4.34 Droperidol versus Ginger	1	19	Risk Ratio (M-H, Random, 95% CI)	0.30 [0.01, 6.62]
4.35 Droperidol versus Granisetron	19	850	Risk Ratio (M-H, Random, 95% CI)	2.77 [1.82, 4.21]
4.36 Droperidol versus Hyoscine	1	40	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.08, 0.75]
4.37 Droperidol versus Lidocaine	1	50	Risk Ratio (M-H, Random, 95% CI)	0.07 [0.00, 1.11]
4.38 Droperidol versus Metoclopramide	23	639	Risk Ratio (M-H, Random, 95% CI)	0.84 [0.64, 1.11]
4.39 Droperidol versus Midazolam	1	150	Risk Ratio (M-H, Random, 95% CI)	0.76 [0.54, 1.06]
4.40 Droperidol versus Ondansetron	38	2773	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.89, 1.14]
4.41 Droperidol versus Phenobarbitone	1	56	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.11, 4.95]
4.42 Droperidol versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	2.93 [0.63, 13.61]
4.43 Droperidol versus Ranitidine	1	60	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.07, 1.52]
4.44 Droperidol versus Tropisetron	4	234	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.81, 1.52]
4.45 Ginger versus Metoclopramide	2	60	Risk Ratio (M-H, Random, 95% CI)	0.43 [0.13, 1.43]
4.46 Glycopyrrolate versus Hyoscine	1	60	Risk Ratio (M-H, Random, 95% CI)	2.43 [1.18, 4.99]
4.47 Granisetron versus Metoclopramide	11	318	Risk Ratio (M-H, Random, 95% CI)	0.32 [0.17, 0.62]
4.48 Granisetron versus Ondansetron	2	29	Risk Ratio (M-H, Random, 95% CI)	1.14 [0.39, 3.31]

4.49 Granisetron versus Perphenazine	2	190	Risk Ratio (M-H, Random, 95% CI)	0.06 [0.01, 0.43]
4.50 Granisetron versus Ramosetron	3	236	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.10, 2.40]
4.51 Granisetron versus Tropisetron	2	28	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.35, 2.82]
4.52 Metoclopramide versus Nabilone	1	53	Risk Ratio (M-H, Random, 95% CI)	1.22 [0.81, 1.84]
4.53 Metoclopramide versus Ondansetron	27	1776	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.98, 1.26]
4.54 Metoclopramide versus Propofol	2	60	Risk Ratio (M-H, Random, 95% CI)	3.48 [0.78, 15.46]
4.55 Metoclopramide versus Tiapride	1	26	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.13, 67.51]
4.56 Metoclopramide versus Tropisetron	5	182	Risk Ratio (M-H, Random, 95% CI)	1.31 [0.93, 1.85]
4.57 Ondansetron versus Perphenazine	1	216	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.17, 1.86]
4.58 Ondansetron versus Prochlorperazine	3	241	Risk Ratio (M-H, Random, 95% CI)	1.46 [0.65, 3.28]
4.59 Ondansetron versus Promethazine	1	15	Risk Ratio (M-H, Random, 95% CI)	1.14 [0.09, 15.08]
4.60 Ondansetron versus Tropisetron	8	365	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.88, 1.36]
4.61 Pentobarbitone versus Trimeprazine	1	24	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.21, 19.23]

#### Comparison 4. PRIMARY ANALYSIS: Placebo versus Drugs

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	25		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Cimetidine and Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
1.2 Clonidine and Neostigmine	1	18	Risk Ratio (M-H, Random, 95% CI)	0.51 [0.17, 1.52]
1.3 Cyclizine and Ondansetron	1	40	Risk Ratio (M-H, Random, 95% CI)	0.56 [0.16, 1.92]
1.4 Dexamethasone and Droperidol	1	25	Risk Ratio (M-H, Random, 95% CI)	0.27 [0.04, 2.10]
1.5 Dexamethasone and Granisetron	3	62	Risk Ratio (M-H, Random, 95% CI)	0.26 [0.06, 1.12]
1.6 Dexamethasone and Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.23, 2.44]
1.7 Dexamethasone and Ondansetron	3	109	Risk Ratio (M-H, Random, 95% CI)	0.32 [0.17, 0.60]

1.8 Dimenhydrinate and Droperidol	2	63	Risk Ratio (M-H, Random, 95% CI)	0.45 [0.18, 1.13]
1.9 Dimenhydrinate and Metoclopramide	2	44	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.24, 2.25]
1.10 Dimenhydrinate and Ondansetron	1	16	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.04, 1.77]
1.11 Dolasetron and Droperidol	2	38	Risk Ratio (M-H, Random, 95% CI)	0.43 [0.09, 2.11]
1.12 Droperidol and Ginger	1	36	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.34, 2.91]
1.13 Droperidol and Metoclopramide	2	29	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.61, 1.65]
1.14 Droperidol and Ondansetron	2	58	Risk Ratio (M-H, Random, 95% CI)	0.43 [0.11, 1.67]
1.15 Glycopyrrolate and Neostigmine	2	248	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.95, 1.99]
1.16 Ondansetron and Promethazine	1	30	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.10, 1.11]
2 Vomiting	30		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Atropine and Edrophonium	1	38	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.72, 2.64]
2.2 Cimetidine and Dimetindene	1	144	Risk Ratio (M-H, Random, 95% CI)	0.20 [0.07, 0.54]
2.3 Cimetidine and Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
2.4 Clonidine and Neostigmine	1	18	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
2.5 Cyclizine and Ondansetron	1	40	Risk Ratio (M-H, Random, 95% CI)	0.07 [0.01, 0.50]
2.6 Dexamethasone and Droperidol	1	25	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.04, 3.02]
2.7 Dexamethasone and Granisetron.	2	60	Risk Ratio (M-H, Random, 95% CI)	0.28 [0.06, 1.23]
2.8 Dexamethasone and Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.12, 2.08]
2.9 Dexamethasone and Ondansetron	3	109	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.14, 0.70]
2.10 Dimenhydrinate and Droperidol	2	63	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.08, 1.17]
2.11 Dimenhydrinate and Metoclopramide	2	44	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.09, 1.85]
2.12 Dimenhydrinate and Ondansetron	1	16	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.06, 4.47]
2.13 Dolasetron and Droperidol	2	38	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.08, 1.45]
2.14 Droperidol and Ginger	1	36	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.25, 2.39]
2.15 Droperidol and Metoclopramide	3	52	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.27, 1.71]
2.16 Droperidol and Ondansetron	3	126	Risk Ratio (M-H, Random, 95% CI)	0.36 [0.19, 0.67]
2.17 Droperidol and Phenoperidine	1	163	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.27, 1.29]

2.18 Glycopyrrolate and Neostigmine	3	286	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.68, 1.38]
2.19 Metoclopramide and Ondansetron	1	133	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.16, 0.67]
2.20 Ondansetron and Promethazine	1	30	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.09, 0.72]
3 Nausea or Vomiting	26		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Atropine and Edrophonium	1	40	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.39, 3.99]
3.2 Cimetidine and Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.08, 13.02]
3.3 Clonidine and Neostigmine	2	32	Risk Ratio (M-H, Random, 95% CI)	1.59 [0.12, 21.80]
3.4 Cyclizine and Ondansetron	1	40	Risk Ratio (M-H, Random, 95% CI)	0.63 [0.43, 0.92]
3.5 Dexamethasone and Droperidol	1	25	Risk Ratio (M-H, Random, 95% CI)	0.31 [0.08, 1.21]
3.6 Dexamethasone and Granisetron	1	46	Risk Ratio (M-H, Random, 95% CI)	0.10 [0.01, 0.72]
3.7 Dexamethasone and Metoclopramide	1	18	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.28, 1.58]
3.8 Dexamethasone and Ondansetron	3	109	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.22, 0.49]
3.9 Dimenhydrinate and Droperidol	2	63	Risk Ratio (M-H, Random, 95% CI)	0.45 [0.18, 1.13]
3.10 Dimenhydrinate and Metoclopramide	2	44	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.23, 1.46]
3.11 Dolasetron and Droperidol	2	38	Risk Ratio (M-H, Random, 95% CI)	0.35 [0.12, 1.03]
3.12 Droperidol and Ondansetron	4	117	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.18, 0.81]
3.13 Glycopyrrolate and Neostigmine	4	434	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.86, 1.23]
3.14 Metoclopramide and Ondansetron	1	16	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.30, 1.48]
3.15 Ondansetron and Promethazine	1	30	Risk Ratio (M-H, Random, 95% CI)	0.35 [0.17, 0.72]
4 Rescue antiemetic	21		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Atropine and Edrophonium	1	38	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 14.85]
4.2 Cimetidine and Metoclopramide	1	14	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.3 Cyclizine and Ondansetron	1	40	Risk Ratio (M-H, Random, 95% CI)	0.08 [0.01, 0.66]
4.4 Dexamethasone and Droperidol	1	25	Risk Ratio (M-H, Random, 95% CI)	0.43 [0.10, 1.83]
4.5 Dexamethasone and Granisetron	2	60	Risk Ratio (M-H, Random, 95% CI)	0.11 [0.01, 1.95]
4.6 Dexamethasone and Ondansetron	2	91	Risk Ratio (M-H, Random, 95% CI)	0.19 [0.07, 0.52]

4.7 Dimenhydrinate and Droperidol	1	24	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.04, 2.77]
4.8 Dimenhydrinate and Metoclopramide	1	26	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.04, 2.80]
4.9 Dimenhydrinate and Ondansetron	1	16	Risk Ratio (M-H, Random, 95% CI)	0.2 [0.03, 1.35]
4.10 Droperidol and Ginger	1	36	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.11 Droperidol and Metoclopramide	1	12	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.60, 1.66]
4.12 Droperidol and Ondansetron	5	143	Risk Ratio (M-H, Random, 95% CI)	0.32 [0.14, 0.76]
4.13 Glycopyrrolate and Neostigmine	3	224	Risk Ratio (M-H, Random, 95% CI)	1.44 [0.70, 2.95]
4.14 Ondansetron and Promethazine	1	30	Risk Ratio (M-H, Random, 95% CI)	0.13 [0.01, 1.16]

#### Comparison 5. PRIMARY ANALYSIS: No Treatment versus Drugs

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Atropine and Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.10, 19.50]
1.2 Atropine and neostigmine	2	118	Risk Ratio (M-H, Random, 95% CI)	1.57 [0.96, 2.59]
1.3 Dexamethasone and Droperidol and Metoclopramide and Ondansetron	1	115	Risk Ratio (M-H, Random, 95% CI)	0.34 [0.21, 0.56]
1.4 Glycopyrrolate and Neostigmine	1	40	Risk Ratio (M-H, Random, 95% CI)	2.6 [1.14, 5.93]
2 Vomiting	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Atropine and Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	0.23 [0.03, 1.63]
2.2 Atropine and Neostigmine	2	118	Risk Ratio (M-H, Random, 95% CI)	2.19 [0.77, 6.21]
2.3 Dexamethasone and Droperidol and Metoclopramide and Ondansetron	1	115	Risk Ratio (M-H, Random, 95% CI)	0.11 [0.03, 0.45]
2.4 Glycopyrrolate and Neostigmine	1	40	Risk Ratio (M-H, Random, 95% CI)	2.25 [0.83, 6.13]
3 Nausea or Vomiting	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Atropine and Chlorpromazine	1	26	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.10, 1.53]
3.2 Atropine and Diazepam	1	50	Risk Ratio (M-H, Random, 95% CI)	0.09 [0.01, 1.56]
3.3 Atropine and Neostigmine	1	38	Risk Ratio (M-H, Random, 95% CI)	2.17 [1.05, 4.49]

3.4 Dexamethasone and Droperidol and Metoclopramide and Ondansetron	1	115	Risk Ratio (M-H, Random, 95% CI)	0.34 [0.21, 0.56]
3.5 Droperidol and Metoprolol	1	56	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.04, 3.01]
4 Rescue antiemetic	3		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Atropine and Diazepam	1	50	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.01, 7.81]
4.2 Atropine and Neostigmine	1	80	Risk Ratio (M-H, Random, 95% CI)	3.0 [1.06, 8.52]
4.3 Glycopyrrolate and Neostigmine	1	40	Risk Ratio (M-H, Random, 95% CI)	1.4 [0.53, 3.68]

## Comparison 6. PRIMARY ANALYSIS: Drugs versus Drugs

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	8		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Diazepam versus (Promethazine and Scopolamine)	1	20	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.40, 4.49]
1.2 Droperidol versus (Dexamethasone and Granisetron)	3	172	Risk Ratio (M-H, Random, 95% CI)	1.21 [0.83, 1.76]
1.3 Droperidol versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.32, 6.94]
1.4 Granisetron versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.58]
1.5 Granisetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.58]
1.6 Granisetron versus (Droperidol and Metoclopramide)	1	90	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.18, 3.16]
1.7 Metoclopramide versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.32, 6.94]
1.8 Metoclopramide versus (Dexamethasone and Granisetron)	1	18	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.38, 23.68]
1.9 Metoclopramide versus (Dexamethasone and Ondansetron)	1	19	Risk Ratio (M-H, Random, 95% CI)	4.5 [0.64, 31.60]
1.10 Ondansetron versus (Dimenhydrinate and Droperidol)	1	161	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.67, 1.20]

1.11 Ondansetron versus (Dexamethasone and Metoclopramide)	1	17	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.13, 2.70]
1.12 Ondansetron versus (Droperidol and Metoclopramide)	1	12	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.41, 1.56]
2 Vomiting	12		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 (Atropine and Edrophonium) versus (Glycopyrrolate and Neostigmine)	1	38	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.58, 1.72]
2.2 Diazepam versus (Droperidol and Trimeprazine)	1	22	Risk Ratio (M-H, Random, 95% CI)	9.00 [1.36, 59.54]
2.3 Diazepam versus (Promethazine and Scopolamine)	1	40	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.58, 6.91]
2.4 Droperidol versus (Dexamethasone and Granisetron)	3	172	Risk Ratio (M-H, Random, 95% CI)	2.11 [1.35, 3.32]
2.5 Droperidol versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.22, 18.33]
2.6 Droperidol versus (Metoclopramide and Ondansetron)	1	16	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 13.37]
2.7 Granisetron versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.58]
2.8 Granisetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 13.64]
2.9 Granisetron versus (Droperidol and Metoclopramide)	1	90	Risk Ratio (M-H, Random, 95% CI)	0.6 [0.15, 2.36]
2.10 Metoclopramide versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.18, 5.63]
2.11 Metoclopramide versus (Dexamethasone and Granisetron)	1	18	Risk Ratio (M-H, Random, 95% CI)	5.0 [0.27, 91.52]
2.12 Metoclopramide versus (Dexamethasone and Ondansetron)	1	19	Risk Ratio (M-H, Random, 95% CI)	5.4 [0.79, 36.68]
2.13 Ondansetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.58]
2.14 Ondansetron versus (Dimenhydrinate and Droperidol)	1	162	Risk Ratio (M-H, Random, 95% CI)	0.80 [0.49, 1.31]

2.15 Ondansetron versus (Droperidol and Metoclopramide)	2	28	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.13, 3.53]
2.16 Perphenazine versus (Droperidol and Metoclopramide)	1	67	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.15, 6.49]
2.17 Perphenazine versus (Droperidol and Ondansetron)	1	67	Risk Ratio (M-H, Random, 95% CI)	1.94 [0.18, 20.40]
2.18 Trimeprazine versus (Diazepam and Droperidol)	1	26	Risk Ratio (M-H, Random, 95% CI)	1.29 [0.69, 2.39]
3 Nausea or Vomiting	7		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Diazepam versus (Promethazine and Scopolamine)	1	20	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.60, 3.74]
3.2 Droperidol versus (Dexamethasone and Granisetron)	3	172	Risk Ratio (M-H, Random, 95% CI)	1.37 [0.76, 2.48]
3.3 Droperidol versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.67 [0.56, 4.97]
3.4 Granisetron versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.12, 2.08]
3.5 Granisetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.14, 3.09]
3.6 Granisetron versus (Droperidol and Metoclopramide)	1	90	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.26, 1.72]
3.7 Metoclopramide versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.36, 2.81]
3.8 Metoclopramide versus (Dexamethasone and Granisetron)	1	18	Risk Ratio (M-H, Random, 95% CI)	4.0 [0.55, 29.17]
3.9 Metoclopramide versus (Dexamethasone and Ondansetron)	1	19	Risk Ratio (M-H, Random, 95% CI)	2.70 [0.72, 10.14]
3.10 Ondansetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.12, 2.08]
3.11 Ondansetron versus (Dexamethasone and Tropisetron)	1	16	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.39, 23.07]
3.12 Tropisetron versus (Dexamethasone and Ondansetron)	1	16	Risk Ratio (M-H, Random, 95% CI)	0.50 [0.06, 4.47]
4 Rescue antiemetic	9		Risk Ratio (M-H, Random, 95% CI)	Subtotals only



4.1 (Atropine and Edrophonium) versus (Glycopyrrolate and Neostigmine)	1	38	Risk Ratio (M-H, Random, 95% CI)	0.2 [0.03, 1.55]
4.2 Diazepam versus (Promethazine and Scopolamine)	1	20	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.47, 3.33]
4.3 Droperidol versus (Dexamethasone and Granisetron)	2	152	Risk Ratio (M-H, Random, 95% CI)	1.73 [0.79, 3.81]
4.4 Droperidol versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.38, 23.68]
4.5 Droperidol versus (Metoclopramide and Ondansetron)	1	16	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.6 Granisetron versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.05, 4.58]
4.7 Granisetron versus (Dexamethasone and Metoclopramide)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 13.64]
4.8 Granisetron versus (Droperidol and Metoclopramide)	1	90	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.19, 21.28]
4.9 Metoclopramide versus (Dexamethasone and Droperidol)	1	18	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.32, 6.94]
4.10 Metoclopramide versus (Dexamethasone and Granisetron)	1	18	Risk Ratio (M-H, Random, 95% CI)	7.0 [0.41, 118.69]
4.11 Ondansetron versus (Droperidol and Metoclopramide)	3	228	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.38, 2.63]
4.12 Perphenazine versus (Droperidol and Metoclopramide)	1	67	Risk Ratio (M-H, Random, 95% CI)	0.85 [0.35, 2.08]
4.13 Perphenazine versus (Droperidol and Ondansetron)	1	67	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.38, 2.46]

#### Comparison 7. PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Dizziness or vertigo	7		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Neostigmine	2	86	Risk Ratio (M-H, Random, 95% CI)	6.82 [1.31, 35.41]
1.2 Tropisetron	5	833	Risk Ratio (M-H, Random, 95% CI)	0.37 [0.14, 0.96]
2 Drowsiness or sedation	26		Risk Ratio (M-H, Random, 95% CI)	Subtotals only

2.1 Dimenhydrinate	2	335	Risk Ratio (M-H, Random, 95% CI)	9.01 [2.18, 37.23]
2.2 Droperidol	24	2220	Risk Ratio (M-H, Random, 95% CI)	1.32 [1.16, 1.51]
3 Dry mouth	10		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Hyoscine	10	806	Risk Ratio (M-H, Random, 95% CI)	1.25 [1.05, 1.49]
4 Extrapyramidal reaction	8		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Dimenhydrinate	1	47	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.2 Droperidol	5	1694	Risk Ratio (M-H, Random, 95% CI)	4.37 [0.74, 25.76]
4.3 Granisetron	1	40	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.01, 7.72]
4.4 Metoclopramide	2	102	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
4.5 Ondansetron	2	202	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
5 Headache	65		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
5.1 Droperidol	25	2343	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.65, 0.95]
5.2 Ondansetron	45	10808	Risk Ratio (M-H, Random, 95% CI)	1.16 [1.03, 1.30]
6 Infection	2		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
6.1 Dexamethasone	2	340	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.25, 8.85]
6.2 Ondansetron	1	46	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]

#### Comparison 8. PRIMARY ANALYSIS: Side effects; No Treatment versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Drowsiness or sedation	6		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Droperidol	6	784	Risk Ratio (M-H, Random, 95% CI)	2.57 [1.02, 6.43]
2 Extrapyramidal reaction	1		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Droperidol	1	12	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
2.2 Metoclopramide	1	12	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.15, 61.74]

#### Comparison 9. PRIMARY ANALYSIS: Side effects; Drug versus Drug

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Drowsiness or sedation	2		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Dimenhydrinate versus Ondansetron	2	124	Risk Ratio (M-H, Random, 95% CI)	7.22 [1.52, 34.36]

**Comparison 10. SECONDARY ANALYSIS: Route versus Route**

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	3		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Prochlorperazine intramuscular versus intravenous	3	298	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.33, 0.83]
2 Vomiting	3		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Prochlorperazine intramuscular versus intravenous	3	327	Risk Ratio (M-H, Random, 95% CI)	1.04 [0.60, 1.80]
3 Nausea or Vomiting	6		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Droperidol epidural versus intravenous	2	118	Risk Ratio (M-H, Random, 95% CI)	1.32 [0.36, 4.80]
3.2 Prochlorperazine intramuscular versus intravenous	4	514	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.62, 0.97]
4 Rescue antiemetic	4		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Droperidol epidural versus intravenous	2	118	Risk Ratio (M-H, Random, 95% CI)	2.84 [0.45, 18.01]
4.2 Prochlorperazine intramuscular versus intravenous	2	217	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.17, 3.19]

**Comparison 11. SECONDARY ANALYSIS: Timing versus Timing**

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea	4		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
1.1 Ondansetron	4	219	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.79, 1.73]
2 Vomiting	7		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
2.1 Droperidol	2	173	Risk Ratio (M-H, Random, 95% CI)	1.15 [0.83, 1.59]
2.2 Ondansetron	5	339	Risk Ratio (M-H, Random, 95% CI)	1.20 [0.79, 1.80]
3 Nausea or Vomiting	3		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
3.1 Droperidol	3	168	Risk Ratio (M-H, Random, 95% CI)	0.89 [0.56, 1.41]
4 Rescue antiemetic	5		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
4.1 Droperidol	2	127	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.35, 1.36]
4.2 Ondansetron	3	248	Risk Ratio (M-H, Random, 95% CI)	1.76 [1.12, 2.76]

## Comparison 12. SECONDARY ANALYSIS: Dose versus Dose

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea alizapride	2	134	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.65, 1.88]
1.1 Alizapride intravenous 50 mg versus 100 mg	1	30	Risk Ratio (M-H, Random, 95% CI)	1.13 [0.46, 2.77]
1.2 Alizapride intravenous 100 mg versus 200 mg	2	104	Risk Ratio (M-H, Random, 95% CI)	1.28 [0.47, 3.51]
2 Nausea clonidine	2	90	Risk Ratio (M-H, Random, 95% CI)	2.59 [0.62, 10.86]
2.1 Clonidine intrathecal 25 µg/kg versus 75 µg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.6 [0.63, 4.05]
2.2 Clonidine epidural 25 µg/hr versus 50 µg/kg	1	50	Risk Ratio (M-H, Random, 95% CI)	7.00 [0.93, 52.80]
3 Nausea dexamethasone	6	733	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.98, 2.03]
3.1 Dexamethasone intravenous 1.25 mg versus 2.5 mg	1	66	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.55, 4.12]
3.2 Dexamethasone intravenous 2.5 mg versus 5 mg	3	173	Risk Ratio (M-H, Random, 95% CI)	1.49 [0.73, 3.07]
3.3 Dexamethasone intravenous 2 mg versus 4 mg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.47, 4.74]
3.4 Dexamethasone intravenous 4 mg versus 8 mg	2	75	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.50, 4.49]
3.5 Dexamethasone intravenous 5 mg versus 8 mg	1	88	Risk Ratio (M-H, Random, 95% CI)	1.34 [0.46, 3.90]
3.6 Dexamethasone intravenous 5 mg versus 10 mg	3	196	Risk Ratio (M-H, Random, 95% CI)	1.13 [0.53, 2.43]
3.7 Dexamethasone intravenous 8 mg versus 16 mg	2	90	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.43, 9.25]
4 Nausea dolasetron	5	2113	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.95, 1.16]
4.1 Dolasetron oral 25 mg versus 50 mg	2	355	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.78, 1.31]
4.2 Dolasetron oral 50 mg versus 100 mg	2	234	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.71, 1.28]
4.3 Dolasetron oral 100 mg versus 200 mg	2	343	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.78, 1.31]
4.4 Dolasetron intravenous 12.5 mg versus 25 mg	2	409	Risk Ratio (M-H, Random, 95% CI)	1.10 [0.59, 2.06]
4.5 Dolasetron intravenous 25 mg versus 50 mg	2	461	Risk Ratio (M-H, Random, 95% CI)	1.23 [0.96, 1.57]
4.6 Dolasetron intravenous 50 mg versus 100 mg	1	311	Risk Ratio (M-H, Random, 95% CI)	1.13 [0.91, 1.40]
5 Nausea domperidone	2	132	Risk Ratio (M-H, Random, 95% CI)	0.68 [0.26, 1.79]
5.1 Domperidone intravenous 5 mg versus 10 mg	1	72	Risk Ratio (M-H, Random, 95% CI)	0.5 [0.10, 2.56]
5.2 Domperidone intramuscular 10 mg versus 15 mg	1	60	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.24, 2.69]

6 Nausea droperidol	14	2324	Risk Ratio (M-H, Random, 95% CI)	1.23 [1.12, 1.36]
6.1 Droperidol intravenous 5 µcg/kg versus 10 µcg/kg	1	32	Risk Ratio (M-H, Random, 95% CI)	2.25 [0.87, 5.83]
6.2 Droperidol intravenous 10 µcg/kg versus 20 µcg/kg	2	173	Risk Ratio (M-H, Random, 95% CI)	0.89 [0.15, 5.22]
6.3 Droperidol intravenous 20 µcg/kg versus 30 µcg/kg	1	39	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.08, 5.80]
6.4 Droperidol intravenous 0.25 mg versus 0.5 mg	1	95	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.49, 2.44]
6.5 Droperidol intravenous 0.25 mg versus 1.25 mg	1	78	Risk Ratio (M-H, Random, 95% CI)	0.52 [0.16, 1.62]
6.6 Droperidol intravenous 0.5 mg versus 1 mg	1	75	Risk Ratio (M-H, Random, 95% CI)	2.57 [0.87, 7.62]
6.7 Droperidol intravenous 0.625 mg versus 1.25 mg	3	1107	Risk Ratio (M-H, Random, 95% CI)	1.02 [0.71, 1.47]
6.8 Droperidol intravenous 0.75 mg versus 1.25 mg	1	91	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.62, 1.83]
6.9 Droperidol intravenous 1.25 mg versus 2.5 mg	2	120	Risk Ratio (M-H, Random, 95% CI)	2.25 [1.19, 4.23]
6.10 Droperidol intravenous 2.5 mg versus 5 mg	1	196	Risk Ratio (M-H, Random, 95% CI)	1.47 [0.69, 3.11]
6.11 Droperidol intravenous PCA bolus 5 µcg versus 15 µcg	1	123	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.76, 2.05]
6.12 Droperidol intravenous PCA bolus 15 µcg versus 50 µcg	1	124	Risk Ratio (M-H, Random, 95% CI)	1.57 [0.87, 2.84]
6.13 Droperidol intravenous PCA bolus 50 µcg versus 100 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	1.24 [0.42, 3.65]
6.14 Droperidol intravenous PCA bolus 100 µcg versus 150 µcg	1	19	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.30, 4.17]
6.15 Droperidol intravenous PCA bolus 150 µcg versus 200 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.26, 2.50]
7 Nausea ginger	2	188	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.77, 1.39]
7.1 Ginger oral 100 mg versus 200 mg	1	116	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.76, 1.49]
7.2 Ginger oral 0.5 g versus 1 g	1	72	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.49, 1.74]
8 Nausea granisetron	11	1312	Risk Ratio (M-H, Random, 95% CI)	1.21 [1.05, 1.40]
8.1 Granisetron oral 1 mg versus 2 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	2.17 [0.78, 6.05]
8.2 Granisetron oral 2 mg versus 4 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	1.14 [0.35, 3.67]
8.3 Granisetron intravenous 2 µcg/kg versus 5 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.64 [1.09, 2.46]
8.4 Granisetron intravenous 5 µcg/kg versus 10 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.1 [0.61, 1.99]
8.5 Granisetron intravenous 10 µcg/kg versus 20 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.64, 1.94]

8.6 Granisetron intravenous 20 µcg/kg versus 30 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.24, 16.36]
8.7 Granisetron intravenous 20 µcg/kg versus 40 µcg/kg	5	246	Risk Ratio (M-H, Random, 95% CI)	1.55 [0.82, 2.91]
8.8 Granisetron intravenous 30 µcg/kg versus 40 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.10, 10.17]
8.9 Granisetron intravenous 40 µcg/kg versus 60 µcg/kg	1	38	Risk Ratio (M-H, Random, 95% CI)	1.92 [0.13, 28.32]
8.10 Granisetron intravenous 40 µcg/kg versus 80 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.08, 5.88]
8.11 Granisetron intravenous 40 µcg/kg versus 100 µcg/kg	2	83	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.31, 4.62]
8.12 Granisetron intravenous 100 µcg versus 1 mg	1	199	Risk Ratio (M-H, Random, 95% CI)	1.42 [1.09, 1.84]
8.13 Granisetron intravenous 1 mg versus 3 mg	1	195	Risk Ratio (M-H, Random, 95% CI)	0.88 [0.66, 1.16]
9 Nausea neostigmine	2	60	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.43, 1.09]
9.1 Neostigmine intrathecal 25 µcg versus 50 µcg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.88 [0.43, 1.80]
9.2 Neostigmine intrathecal 100 µcg versus 200 µcg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.32, 1.06]
10 Nausea ondansetron	11	3545	Risk Ratio (M-H, Random, 95% CI)	1.07 [1.00, 1.15]
10.1 Ondansetron oral 4 mg versus 8 mg	1	808	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.92, 1.11]
10.2 Ondansetron oral 8 mg versus 16 mg	2	855	Risk Ratio (M-H, Random, 95% CI)	1.12 [1.02, 1.24]
10.3 Ondansetron intravenous 1 mg versus 4 mg	1	387	Risk Ratio (M-H, Random, 95% CI)	1.13 [0.96, 1.34]
10.4 Ondansetron intravenous 1 mg versus 8 mg	1	345	Risk Ratio (M-H, Random, 95% CI)	1.07 [0.92, 1.23]
10.5 Ondansetron intravenous 4 mg versus 8 mg	8	807	Risk Ratio (M-H, Random, 95% CI)	1.32 [0.97, 1.79]
10.6 Ondansetron intravenous 8 mg versus 16 mg	1	343	Risk Ratio (M-H, Random, 95% CI)	0.94 [0.81, 1.09]
11 Nausea ramosetron	3	226	Risk Ratio (M-H, Random, 95% CI)	2.09 [0.86, 5.09]
11.1 Ramosetron intravenous 0.15 mg versus 0.3 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	3.08 [0.97, 9.83]
11.2 Ramosetron intravenous 0.3 mg versus 0.6 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.30, 4.79]
12 Nausea tropisetron	2	291	Risk Ratio (M-H, Random, 95% CI)	1.24 [0.44, 3.52]
12.1 Tropisetron intravenous 2 mg versus 5 mg	2	291	Risk Ratio (M-H, Random, 95% CI)	1.24 [0.44, 3.52]
13 Vomiting alizapride	2	114	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.48, 2.46]
13.1 Alizapride intravenous 100 mg versus 200 mg	2	114	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.48, 2.46]
14 Vomiting clonidine	3	160	Risk Ratio (M-H, Random, 95% CI)	2.68 [1.17, 6.16]
14.1 Clonidine oral 2 µcg/kg versus 4 µcg/kg	1	70	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.87, 7.22]
14.2 Clonidine intrathecal 25 µcg/kg versus 75 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.69, 13.12]

14.3 Clonidine epidural 25 µg/hr versus 50 µg/hr	1	50	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.13, 70.30]
15 Vomiting dexamethasone	7	869	Risk Ratio (M-H, Random, 95% CI)	1.57 [1.07, 2.30]
15.1 Dexamethasone intravenous 1.25 mg versus 2.5 mg	2	111	Risk Ratio (M-H, Random, 95% CI)	1.77 [0.81, 3.86]
15.2 Dexamethasone intravenous 2 mg versus 4 mg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.55 [0.07, 35.89]
15.3 Dexamethasone intravenous 2.5 mg versus 5 mg	4	204	Risk Ratio (M-H, Random, 95% CI)	1.45 [0.69, 3.08]
15.4 Dexamethasone intravenous 4 mg versus 8 mg	2	90	Risk Ratio (M-H, Random, 95% CI)	2.33 [0.73, 7.41]
15.5 Dexamethasone intravenous 5 mg versus 8 mg	1	88	Risk Ratio (M-H, Random, 95% CI)	2.87 [0.61, 13.44]
15.6 Dexamethasone intravenous 5 mg versus 10 mg	4	241	Risk Ratio (M-H, Random, 95% CI)	1.20 [0.55, 2.60]
15.7 Dexamethasone intravenous 8 mg versus 16 mg	2	90	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.31, 4.67]
16 Vomiting dolasetron	5	1678	Risk Ratio (M-H, Random, 95% CI)	1.11 [0.96, 1.28]
16.1 Dolasetron oral 25 mg versus 50 mg	1	113	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.79, 1.48]
16.2 Dolasetron oral 50 mg versus 100 mg	1	74	Risk Ratio (M-H, Random, 95% CI)	1.29 [0.83, 2.01]
16.3 Dolasetron oral 100 mg versus 200 mg	1	112	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.60, 1.37]
16.4 Dolasetron intravenous 12.5 mg versus 25 mg	3	493	Risk Ratio (M-H, Random, 95% CI)	1.21 [0.68, 2.15]
16.5 Dolasetron intravenous 25 mg versus 50 mg	3	518	Risk Ratio (M-H, Random, 95% CI)	1.29 [0.90, 1.84]
16.6 Dolasetron intravenous 50 mg versus 100 mg	2	368	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.75, 1.29]
17 Vomiting domperidone	2	132	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.71, 1.49]
17.1 Domperidone intravenous 5 mg versus 10 mg	1	72	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.61, 1.63]
17.2 Domperidone intramuscular 10 mg versus 15 mg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.62, 1.89]
18 Vomiting droperidol	17	1518	Risk Ratio (M-H, Random, 95% CI)	1.26 [1.01, 1.57]
18.1 Droperidol oral 50 µg/kg versus 75 µg/kg	1	43	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.40, 2.08]
18.2 Droperidol intravenous 5 µg/kg versus 10 µg/kg	1	32	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.52, 4.32]
18.3 Droperidol intravenous 10 µg/kg versus 20 µg/kg	2	173	Risk Ratio (M-H, Random, 95% CI)	2.57 [1.32, 5.03]
18.4 Droperidol intravenous 20 µg/kg versus 30 µg/kg	1	39	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.37, 2.71]
18.5 Droperidol intravenous 25 µg/kg versus 50 µg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.03 [0.55, 1.93]
18.6 Droperidol intravenous 0.25 mg versus 0.5 mg	1	95	Risk Ratio (M-H, Random, 95% CI)	0.61 [0.22, 1.74]

18.7 Droperidol intravenous 0.25 mg versus 1.25 mg	1	78	Risk Ratio (M-H, Random, 95% CI)	0.60 [0.11, 3.40]
18.8 Droperidol intravenous 0.5 mg versus 1 mg	1	75	Risk Ratio (M-H, Random, 95% CI)	3.42 [0.14, 81.27]
18.9 Droperidol intravenous 0.625 mg versus 1.25 mg	3	195	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.47, 2.56]
18.10 Droperidol intravenous 0.75 mg versus 1.25 mg	1	91	Risk Ratio (M-H, Random, 95% CI)	1.28 [0.49, 3.34]
18.11 Droperidol intravenous 1.25 mg versus 2.5 mg	2	120	Risk Ratio (M-H, Random, 95% CI)	2.84 [0.89, 9.11]
18.12 Droperidol intravenous 2.5 mg versus 5 mg	1	196	Risk Ratio (M-H, Random, 95% CI)	1.22 [0.50, 2.97]
18.13 Droperidol intravenous PCA bolus 5 µcg versus 15 µcg	1	123	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.52, 2.12]
18.14 Droperidol intravenous PCA bolus 15 µcg versus 50 µcg	1	124	Risk Ratio (M-H, Random, 95% CI)	1.82 [0.80, 4.13]
18.15 Droperidol intravenous PCA bolus 17 µcg versus 33 µcg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.29, 3.45]
18.16 Droperidol intravenous PCA bolus 50 µcg versus 100 µcg	1	34	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.20, 2.86]
19 Vomiting ginger	2	188	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.34, 1.72]
19.1 Ginger oral 100 mg versus 200 mg	1	116	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.68, 1.62]
19.2 Ginger oral 0.5 g versus 1 g	1	72	Risk Ratio (M-H, Random, 95% CI)	0.45 [0.18, 1.18]
20 Vomiting granisetron	18	1837	Risk Ratio (M-H, Random, 95% CI)	1.50 [1.26, 1.79]
20.1 Granisetron oral 20 µcg/kg versus 40 µcg/kg	3	131	Risk Ratio (M-H, Random, 95% CI)	1.76 [0.85, 3.67]
20.2 Granisetron oral 40 µcg/kg versus 80 µcg/kg	2	83	Risk Ratio (M-H, Random, 95% CI)	1.64 [0.55, 4.90]
20.3 Granisetron oral 1 mg versus 2 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	2.22 [0.80, 6.14]
20.4 Granisetron oral 2 mg versus 4 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	1.32 [0.39, 4.44]
20.5 Granisetron intravenous 2 µcg/kg versus 5 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	2.21 [1.19, 4.12]
20.6 Granisetron intravenous 5 µcg/kg versus 10 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.4 [0.53, 3.68]
20.7 Granisetron intravenous 10 µcg/kg versus 20 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.39, 2.53]
20.8 Granisetron intravenous 10 µcg/kg versus 40 µcg/kg	2	101	Risk Ratio (M-H, Random, 95% CI)	7.59 [1.86, 30.96]
20.9 Granisetron intravenous 20 µcg/kg versus 30 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.48, 8.28]
20.10 Granisetron intravenous 20 µcg/kg versus 40 µcg/kg	7	351	Risk Ratio (M-H, Random, 95% CI)	1.99 [1.13, 3.50]
20.11 Granisetron intravenous 30 µcg/kg versus 40 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.31, 12.84]



20.12 Granisetron intravenous 40 µcg/kg versus 60 µcg/kg	1	38	Risk Ratio (M-H, Random, 95% CI)	1.92 [0.13, 28.32]
20.13 Granisetron intravenous 40 µcg/kg versus 80 µcg/kg	2	105	Risk Ratio (M-H, Random, 95% CI)	1.59 [0.46, 5.51]
20.14 Granisetron intravenous 40 µcg/kg versus 100 µcg/kg	3	128	Risk Ratio (M-H, Random, 95% CI)	1.32 [0.39, 4.44]
20.15 Granisetron intravenous 100 µcg versus 1 mg	1	199	Risk Ratio (M-H, Random, 95% CI)	1.48 [1.05, 2.10]
20.16 Granisetron intravenous 1 mg versus 3 mg	1	195	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.67, 1.43]
21 Vomiting metoclopramide	3	179	Risk Ratio (M-H, Random, 95% CI)	1.82 [1.16, 2.87]
21.1 Metoclopramide intravenous 0.15 mg/kg versus 0.25 mg/kg	1	53	Risk Ratio (M-H, Random, 95% CI)	2.38 [1.25, 4.53]
21.2 Metoclopramide intravenous 10 mg versus 20 mg	1	66	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.49, 3.77]
21.3 Metoclopramide intravenous 20 mg versus 50 mg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.43 [0.63, 3.25]
22 Vomiting neostigmine	2	60	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.43, 1.63]
22.1 Neostigmine intrathecal 25 µcg versus 50 µcg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.32, 2.15]
22.2 Neostigmine intrathecal 100 µcg versus 200 µcg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.83 [0.32, 2.15]
23 Vomiting ondansetron	19	4474	Risk Ratio (M-H, Random, 95% CI)	1.15 [1.04, 1.27]
23.1 Ondansetron oral 0.075 mg/kg versus 0.15 mg/kg	1	91	Risk Ratio (M-H, Random, 95% CI)	2.39 [0.66, 8.65]
23.2 Ondansetron oral 4 mg versus 8 mg	2	838	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.11, 3.12]
23.3 Ondansetron oral 8 mg versus 16 mg	3	875	Risk Ratio (M-H, Random, 95% CI)	1.20 [1.05, 1.37]
23.4 Ondansetron intravenous 10 µcg/kg versus 50 µcg/kg	1	48	Risk Ratio (M-H, Random, 95% CI)	2.83 [0.97, 8.27]
23.5 Ondansetron intravenous 40 µcg/kg versus 100 µcg/kg	1	42	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.63, 1.30]
23.6 Ondansetron intravenous 50 µcg/kg versus 100 µcg/kg	2	189	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.50, 1.90]
23.7 Ondansetron intravenous 50 µcg/kg versus 150 µcg/kg	1	239	Risk Ratio (M-H, Random, 95% CI)	1.46 [1.08, 1.97]
23.8 Ondansetron intravenous 75 µcg/kg versus 150 µcg/kg	1	142	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.51, 1.94]
23.9 Ondansetron intravenous 100 µcg/kg versus 150 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.28, 3.59]
23.10 Ondansetron intravenous 100 µcg/kg versus 200 µcg/kg	1	36	Risk Ratio (M-H, Random, 95% CI)	1.44 [0.90, 2.30]
23.11 Ondansetron intravenous 1 mg versus 4 mg	1	400	Risk Ratio (M-H, Random, 95% CI)	1.36 [1.02, 1.82]
23.12 Ondansetron intravenous 1 mg versus 8 mg	1	345	Risk Ratio (M-H, Random, 95% CI)	1.28 [1.07, 1.53]

23.13 Ondansetron intravenous 2 mg versus 4 mg	1	36	Risk Ratio (M-H, Random, 95% CI)	2.68 [0.31, 23.43]
23.14 Ondansetron intravenous 4 mg versus 8 mg	7	790	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.71, 1.92]
23.15 Ondansetron intravenous 8 mg versus 16 mg	1	343	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.76, 1.11]
24 Vomiting ramosetron	3	226	Risk Ratio (M-H, Random, 95% CI)	2.12 [1.05, 4.27]
24.1 Ramosetron intravenous 0.15 mg versus 0.3 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	2.20 [0.91, 5.29]
24.2 Ramosetron intravenous 0.3 mg versus 0.6 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	1.99 [0.62, 6.38]
25 Vomiting tropisetron	3	332	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.57, 3.34]
25.1 Tropisetron intravenous 2 mg versus 5 mg	3	332	Risk Ratio (M-H, Random, 95% CI)	1.38 [0.57, 3.34]
26 Nausea or Vomiting clonidine	3	116	Risk Ratio (M-H, Random, 95% CI)	3.41 [1.34, 8.71]
26.1 Clonidine oral 2 µcg/kg versus 5 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	4.0 [1.01, 15.81]
26.2 Clonidine epidural 25 µcg/hr versus 50 µcg/hr	1	50	Risk Ratio (M-H, Random, 95% CI)	8.00 [1.08, 59.32]
26.3 Clonidine epidural 1 µcg/kg versus 3 µcg/kg	1	36	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.28, 7.93]
27 Nausea or Vomiting dexamethasone	6	733	Risk Ratio (M-H, Random, 95% CI)	1.44 [1.10, 1.90]
27.1 Dexamethasone intravenous 1.25 mg versus 2.5 mg	1	66	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.70, 3.24]
27.2 Dexamethasone intravenous 2 mg versus 4 mg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.61, 2.56]
27.3 Dexamethasone intravenous 2.5 mg versus 5 mg	3	173	Risk Ratio (M-H, Random, 95% CI)	1.62 [0.92, 2.83]
27.4 Dexamethasone intravenous 4 mg versus 8 mg	2	75	Risk Ratio (M-H, Random, 95% CI)	2.47 [1.01, 6.03]
27.5 Dexamethasone intravenous 5 mg versus 8 mg	1	88	Risk Ratio (M-H, Random, 95% CI)	1.77 [0.78, 4.02]
27.6 Dexamethasone intravenous 5 mg versus 10 mg	3	196	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.58, 1.93]
27.7 Dexamethasone intravenous 8 mg versus 16 mg	2	90	Risk Ratio (M-H, Random, 95% CI)	1.12 [0.41, 3.03]
28 Nausea or Vomiting dolasetron	3	1188	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.96, 1.19]
28.1 Dolasetron oral 25 mg versus 50 mg	2	355	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.91, 1.24]
28.2 Dolasetron oral 50 mg versus 100 mg	2	234	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.82, 1.34]
28.3 Dolasetron oral 100 mg versus 200 mg	2	343	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.82, 1.14]
28.4 Dolasetron intravenous 25 mg versus 50 mg	1	256	Risk Ratio (M-H, Random, 95% CI)	1.41 [1.09, 1.82]
29 Nausea or Vomiting domperidone	2	132	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.74, 1.31]
29.1 Domperidone intravenous 5 mg versus 10 mg	1	72	Risk Ratio (M-H, Random, 95% CI)	0.90 [0.60, 1.37]

29.2 Domperidone intramuscular 10 mg versus 15 mg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.71, 1.57]
30 Nausea or Vomiting droperidol	13	2272	Risk Ratio (M-H, Random, 95% CI)	1.20 [1.08, 1.33]
30.1 Droperidol intravenous 5 µcg/kg versus 10 µcg/kg	1	32	Risk Ratio (M-H, Random, 95% CI)	2.00 [0.42, 9.42]
30.2 Droperidol intravenous 10 µcg/kg versus 20 µcg/kg	2	79	Risk Ratio (M-H, Random, 95% CI)	2.02 [1.01, 4.03]
30.3 Droperidol intravenous 20 µcg/kg versus 30 µcg/kg	1	39	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.40, 2.07]
30.4 Droperidol intravenous 0.25 mg versus 1.25 mg	1	116	Risk Ratio (M-H, Random, 95% CI)	1.10 [0.52, 2.30]
30.5 Droperidol intravenous 0.5 mg versus 1 mg	1	75	Risk Ratio (M-H, Random, 95% CI)	2.86 [0.98, 8.31]
30.6 Droperidol intravenous 0.625 mg versus 1.25 mg	3	1126	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.69, 1.41]
30.7 Droperidol intravenous 0.75 mg versus 1.25 mg	1	94	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.08, 1.86]
30.8 Droperidol intravenous 1.25 mg versus 2.5 mg	3	201	Risk Ratio (M-H, Random, 95% CI)	1.59 [0.96, 2.65]
30.9 Droperidol intravenous 2.5 mg versus 5 mg	1	192	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.71, 3.17]
30.10 Droperidol intravenous PCA bolus 5 µcg versus 15 µcg	1	123	Risk Ratio (M-H, Random, 95% CI)	1.36 [0.84, 2.20]
30.11 Droperidol intravenous PCA bolus 15 µcg versus 50 µcg	1	124	Risk Ratio (M-H, Random, 95% CI)	1.35 [0.77, 2.37]
30.12 Droperidol intravenous PCA bolus 50 µcg versus 100 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.52, 2.15]
30.13 Droperidol intravenous PCA bolus 100 µcg versus 150 µcg	1	19	Risk Ratio (M-H, Random, 95% CI)	1.85 [0.61, 5.63]
30.14 Droperidol intravenous PCA bolus 150 µcg versus 200 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.26, 2.50]
31 Nausea or Vomiting granisetron	10	1132	Risk Ratio (M-H, Random, 95% CI)	1.50 [1.19, 1.89]
31.1 Granisetron oral 1 mg versus 2 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	2.42 [1.17, 5.01]
31.2 Granisetron oral 2 mg versus 4 mg	3	128	Risk Ratio (M-H, Random, 95% CI)	1.26 [0.53, 3.00]
31.3 Granisetron intravenous 20 µcg/kg versus 30 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.77, 11.72]
31.4 Granisetron intravenous 20 µcg/kg versus 40 µcg/kg	5	196	Risk Ratio (M-H, Random, 95% CI)	2.80 [1.63, 4.79]
31.5 Granisetron intravenous 30 µcg/kg versus 40 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.21, 4.86]
31.6 Granisetron intravenous 40 µcg/kg versus 60 µcg/kg	1	38	Risk Ratio (M-H, Random, 95% CI)	1.92 [0.30, 12.13]
31.7 Granisetron intravenous 40 µcg/kg versus 80 µcg/kg	2	75	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.46, 3.43]

31.8 Granisetron intravenous 40 µcg/kg versus 100 µcg/kg	2	83	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.49, 4.04]
31.9 Granisetron intravenous 100 µcg versus 1 mg	1	199	Risk Ratio (M-H, Random, 95% CI)	1.45 [1.12, 1.87]
31.10 Granisetron intravenous 1 mg versus 3 mg	1	195	Risk Ratio (M-H, Random, 95% CI)	0.88 [0.66, 1.16]
32 Nausea or Vomiting neostigmine	4	190	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.47, 0.91]
32.1 Neostigmine intrathecal 50 µcg versus 100 µcg	1	40	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.40, 1.60]
32.2 Neostigmine intrathecal 100 µcg versus 200 µcg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.32, 1.06]
32.3 Neostigmine intrathecal 200 µcg versus 500 µcg	1	20	Risk Ratio (M-H, Random, 95% CI)	0.25 [0.07, 0.90]
32.4 Neostigmine epidural 10 µcg/kg versus 20 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.18, 2.42]
32.5 Neostigmine epidural 20 µcg/kg versus 30 µcg/kg	1	20	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.26, 3.81]
32.6 Neostigmine epidural 30 µcg/kg versus 40 µcg/kg	1	20	Risk Ratio (M-H, Random, 95% CI)	0.6 [0.19, 1.86]
32.7 Neostigmine epidural 40 µcg/kg versus 50 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.38, 1.55]
33 Nausea or Vomiting ondansetron	8	556	Risk Ratio (M-H, Random, 95% CI)	1.39 [1.08, 1.79]
33.1 Ondansetron intravenous 25 µcg/kg versus 50 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.64 [0.92, 2.92]
33.2 Ondansetron intravenous 50 µcg/kg versus 75 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	1.4 [0.57, 3.43]
33.3 Ondansetron intravenous 50 µcg/kg versus 100 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.6 [0.63, 4.05]
33.4 Ondansetron intravenous 75 µcg/kg versus 100 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.36, 2.75]
33.5 Ondansetron intravenous 100 µcg/kg versus 150 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.43 [0.54, 3.75]
33.6 Ondansetron intravenous 2 mg versus 4 mg	1	36	Risk Ratio (M-H, Random, 95% CI)	1.57 [0.55, 4.43]
33.7 Ondansetron intravenous 4 mg versus 8 mg	5	330	Risk Ratio (M-H, Random, 95% CI)	1.31 [0.85, 2.02]
34 Nausea or Vomiting ramosetron	3	226	Risk Ratio (M-H, Random, 95% CI)	2.20 [1.23, 3.92]
34.1 Ramosetron intravenous 0.15 mg versus 0.3 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	2.98 [1.43, 6.23]
34.2 Ramosetron intravenous 0.3 mg versus 0.6 mg	3	113	Risk Ratio (M-H, Random, 95% CI)	1.34 [0.53, 3.42]
35 Rescue antiemetic clonidine	2	110	Risk Ratio (M-H, Random, 95% CI)	1.18 [0.73, 1.92]
35.1 Clonidine intrathecal 25 µcg/kg versus 75 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.67, 1.75]
35.2 Clonidine epidural 2 µcg/ml versus 3 µcg/ml	1	36	Risk Ratio (M-H, Random, 95% CI)	0.89 [0.74, 1.08]
35.3 Clonidine epidural 3 µcg/ml versus 4 µcg/ml	1	34	Risk Ratio (M-H, Random, 95% CI)	1.77 [1.20, 2.61]

36 Rescue antiemetic dexamethasone	6	763	Risk Ratio (M-H, Random, 95% CI)	1.48 [1.00, 2.20]
36.1 Dexamethasone intravenous 1.25 mg versus 2.5 mg	2	111	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.44, 3.54]
36.2 Dexamethasone intravenous 2 mg versus 4 mg	1	45	Risk Ratio (M-H, Random, 95% CI)	2.5 [0.32, 19.53]
36.3 Dexamethasone intravenous 2.5 mg versus 5 mg	4	204	Risk Ratio (M-H, Random, 95% CI)	1.49 [0.73, 3.06]
36.4 Dexamethasone intravenous 4 mg versus 8 mg	1	30	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.13, 68.26]
36.5 Dexamethasone intravenous 5 mg versus 8 mg	1	88	Risk Ratio (M-H, Random, 95% CI)	1.77 [0.78, 4.02]
36.6 Dexamethasone intravenous 5 mg versus 10 mg	4	240	Risk Ratio (M-H, Random, 95% CI)	1.29 [0.59, 2.82]
36.7 Dexamethasone intravenous 8 mg versus 16 mg	1	45	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.03, 14.97]
37 Rescue antiemetic dolasetron	5	2114	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.92, 1.19]
37.1 Dolasetron oral 25 mg versus 50 mg	2	354	Risk Ratio (M-H, Random, 95% CI)	0.97 [0.63, 1.48]
37.2 Dolasetron oral 50 mg versus 100 mg	2	234	Risk Ratio (M-H, Random, 95% CI)	1.10 [0.77, 1.57]
37.3 Dolasetron oral 100 mg versus 200 mg	2	343	Risk Ratio (M-H, Random, 95% CI)	0.95 [0.71, 1.28]
37.4 Dolasetron intravenous 12.5 mg versus 25 mg	2	410	Risk Ratio (M-H, Random, 95% CI)	0.92 [0.65, 1.30]
37.5 Dolasetron intravenous 25 mg versus 50 mg	2	462	Risk Ratio (M-H, Random, 95% CI)	1.28 [0.93, 1.76]
37.6 Dolasetron intravenous 50 mg versus 100 mg	1	311	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.78, 1.82]
38 Rescue antiemetic droperidol	12	1862	Risk Ratio (M-H, Random, 95% CI)	1.21 [1.02, 1.44]
38.1 Droperidol oral 50 µcg/kg versus 75 µcg/kg	1	43	Risk Ratio (M-H, Random, 95% CI)	1.05 [0.30, 3.66]
38.2 Droperidol intravenous 5 µcg/kg versus 10 µcg/kg	1	32	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.20, 19.91]
38.3 Droperidol intravenous 10 µcg/kg versus 20 µcg/kg	1	134	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.56, 3.15]
38.4 Droperidol intravenous 25 µcg/kg versus 50 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	0.29 [0.01, 6.91]
38.5 Droperidol intravenous 0.25 mg versus 0.5 mg	1	95	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.26, 3.69]
38.6 Droperidol intravenous 0.625 mg versus 1.25 mg	4	1223	Risk Ratio (M-H, Random, 95% CI)	1.20 [0.99, 1.45]
38.7 Droperidol intravenous 0.75 mg versus 1.25 mg	1	94	Risk Ratio (M-H, Random, 95% CI)	0.59 [0.06, 6.32]
38.8 Droperidol intravenous 1.25 mg versus 2.5 mg	1	70	Risk Ratio (M-H, Random, 95% CI)	3.83 [0.37, 40.16]
38.9 Droperidol intravenous PCA bolus 17 µcg versus 33 µcg	1	40	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.41, 9.71]

38.10 Droperidol intravenous PCA bolus 50 µcg versus 100 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	1.41 [0.49, 4.04]
38.11 Droperidol intravenous PCA bolus 100 µcg versus 150 µcg	1	19	Risk Ratio (M-H, Random, 95% CI)	1.67 [0.36, 7.82]
38.12 Droperidol intravenous PCA bolus 150 µcg versus 200 µcg	1	26	Risk Ratio (M-H, Random, 95% CI)	0.8 [0.18, 3.59]
39 Rescue antiemetic granisetron	16	1569	Risk Ratio (M-H, Random, 95% CI)	1.66 [1.15, 2.40]
39.1 Granisetron oral 20 µcg/kg versus 40 µcg/kg	2	93	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.06, 18.65]
39.2 Granisetron oral 40 µcg/kg versus 80 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.13, 29.81]
39.3 Granisetron oral 1 mg versus 2 mg	2	83	Risk Ratio (M-H, Random, 95% CI)	6.79 [0.93, 49.51]
39.4 Granisetron oral 2 mg versus 4 mg	2	83	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
39.5 Granisetron intravenous 2 µcg/kg versus 5 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.77, 5.20]
39.6 Granisetron intravenous 5 µcg/kg versus 10 µcg/kg	1	40	Risk Ratio (M-H, Random, 95% CI)	1.33 [0.34, 5.21]
39.7 Granisetron intravenous 10 µcg/kg versus 20 µcg/kg	1	60	Risk Ratio (M-H, Random, 95% CI)	1.5 [0.37, 6.07]
39.8 Granisetron intravenous 10 µcg/kg versus 40 µcg/kg	1	66	Risk Ratio (M-H, Random, 95% CI)	4.0 [0.47, 33.91]
39.9 Granisetron intravenous 20 µcg/kg versus 30 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	4.65 [0.27, 81.01]
39.10 Granisetron intravenous 20 µcg/kg versus 40 µcg/kg	8	386	Risk Ratio (M-H, Random, 95% CI)	2.86 [1.20, 6.81]
39.11 Granisetron intravenous 30 µcg/kg versus 40 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
39.12 Granisetron intravenous 40 µcg/kg versus 60 µcg/kg	1	38	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
39.13 Granisetron intravenous 40 µcg/kg versus 80 µcg/kg	3	135	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
39.14 Granisetron intravenous 40 µcg/kg versus 100 µcg/kg	3	128	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
39.15 Granisetron intravenous 1 mg versus 3 mg	1	262	Risk Ratio (M-H, Random, 95% CI)	1.09 [0.70, 1.68]
40 Rescue antiemetic neostigmine	2	166	Risk Ratio (M-H, Random, 95% CI)	0.87 [0.59, 1.29]
40.1 Neostigmine intrathecal 25 µcg/kg versus 50 µcg/kg	1	33	Risk Ratio (M-H, Random, 95% CI)	0.86 [0.48, 1.54]
40.2 Neostigmine intrathecal 50 µcg/kg versus 75 µcg/kg	1	33	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.58, 1.73]
40.3 Neostigmine epidural 10 µcg/kg versus 20 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
40.4 Neostigmine epidural 20 µcg/kg versus 30 µcg/kg	1	20	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
40.5 Neostigmine epidural 30 µcg/kg versus 40 µcg/kg	1	20	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.02, 7.32]

40.6 Neostigmine epidural 40 µcg/kg versus 50 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	0.29 [0.04, 2.01]
41 Rescue antiemetic ondansetron	10	754	Risk Ratio (M-H, Random, 95% CI)	1.22 [0.90, 1.65]
41.1 Ondansetron intravenous 10 µcg/kg versus 50 µcg/kg	1	48	Risk Ratio (M-H, Random, 95% CI)	3.61 [0.20, 65.86]
41.2 Ondansetron intravenous 25 µcg/kg versus 50 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	3.5 [0.91, 13.44]
41.3 Ondansetron intravenous 40 µcg/kg versus 100 µcg/kg	1	49	Risk Ratio (M-H, Random, 95% CI)	2.13 [0.26, 17.54]
41.4 Ondansetron intravenous 50 µcg/kg versus 75 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.16, 6.20]
41.5 Ondansetron intravenous 50 µcg/kg versus 100 µcg/kg	2	89	Risk Ratio (M-H, Random, 95% CI)	7.0 [0.38, 127.32]
41.6 Ondansetron intravenous 75 µcg/kg versus 100 µcg/kg	1	30	Risk Ratio (M-H, Random, 95% CI)	2.0 [0.20, 19.78]
41.7 Ondansetron intravenous 100 µcg/kg versus 200 µcg/kg	1	49	Risk Ratio (M-H, Random, 95% CI)	5.5 [0.24, 128.18]
41.8 Ondansetron intravenous 100 µcg/kg versus 150 µcg/kg	1	45	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.10, 10.17]
41.9 Ondansetron intravenous 0.5 mg versus 1 mg	1	38	Risk Ratio (M-H, Random, 95% CI)	1.46 [0.67, 3.15]
41.10 Ondansetron intravenous 1 mg versus 2 mg	1	26	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.43, 3.63]
41.11 Ondansetron intravenous 2 mg versus 4 mg	2	62	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.41, 3.36]
41.12 Ondansetron intravenous 4 mg versus 8 mg	4	205	Risk Ratio (M-H, Random, 95% CI)	1.08 [0.55, 2.13]
41.13 Ondansetron intravenous 8 mg versus 16 mg	1	38	Risk Ratio (M-H, Random, 95% CI)	0.70 [0.28, 1.77]
42 Rescue antiemetic ramosetron	2	166	Risk Ratio (M-H, Random, 95% CI)	8.77 [0.54, 142.51]
42.1 Ramosetron intravenous 0.15 mg versus 0.3 mg	2	83	Risk Ratio (M-H, Random, 95% CI)	8.77 [0.54, 142.51]
42.2 Ramosetron intravenous 0.3 mg versus 0.6 mg	2	83	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
43 Rescue antiemetic tropisetron	3	331	Risk Ratio (M-H, Random, 95% CI)	1.15 [0.44, 2.99]
43.1 Tropisetron intravenous 2 mg versus 5 mg	3	331	Risk Ratio (M-H, Random, 95% CI)	1.15 [0.44, 2.99]

### Comparison 13. POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Nausea: granisetron	37	2950	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.45, 0.63]
1.1 Fujii	28	1859	Risk Ratio (M-H, Random, 95% CI)	0.42 [0.34, 0.53]
1.2 Others	9	1091	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.55, 0.81]
2 Vomiting: granisetron	52	4088	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.35, 0.46]
2.1 Fujii	39	2719	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.33, 0.44]
2.2 Others	13	1369	Risk Ratio (M-H, Random, 95% CI)	0.42 [0.33, 0.54]



3 Nausea or Vomiting: granisetron	34	2652	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.31, 0.48]
3.1 Fujii	27	1908	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.36, 0.47]
3.2 Others	7	744	Risk Ratio (M-H, Random, 95% CI)	0.53 [0.35, 0.80]
4 Rescue antiemetic: granisetron	42	3410	Risk Ratio (M-H, Random, 95% CI)	0.29 [0.22, 0.39]
4.1 Fujii	33	2413	Risk Ratio (M-H, Random, 95% CI)	0.23 [0.17, 0.30]
4.2 Others	9	997	Risk Ratio (M-H, Random, 95% CI)	0.48 [0.34, 0.69]
5 Nausea: droperidol versus granisetron	19	782	Risk Ratio (M-H, Random, 95% CI)	1.36 [1.05, 1.77]
5.1 Fujii	16	612	Risk Ratio (M-H, Random, 95% CI)	2.33 [1.54, 3.52]
5.2 Others	3	170	Risk Ratio (M-H, Random, 95% CI)	0.94 [0.67, 1.33]
6 Vomiting: droperidol versus granisetron	24	1008	Risk Ratio (M-H, Random, 95% CI)	2.16 [1.71, 2.72]
6.1 Fujii	21	838	Risk Ratio (M-H, Random, 95% CI)	2.42 [1.82, 3.22]
6.2 Others	3	170	Risk Ratio (M-H, Random, 95% CI)	1.70 [1.14, 2.55]
7 Nausea or Vomiting: droperidol versus granisetron	18	744	Risk Ratio (M-H, Random, 95% CI)	2.08 [1.55, 2.80]
7.1 Fujii	15	574	Risk Ratio (M-H, Random, 95% CI)	2.43 [1.84, 3.22]
7.2 Others	3	170	Risk Ratio (M-H, Random, 95% CI)	1.23 [0.61, 2.48]
8 Rescue antiemetic: droperidol versus granisetron	19	850	Risk Ratio (M-H, Random, 95% CI)	2.77 [1.82, 4.21]
8.1 Fujii	17	700	Risk Ratio (M-H, Random, 95% CI)	5.10 [2.75, 9.44]
8.2 Others	2	150	Risk Ratio (M-H, Random, 95% CI)	1.63 [0.91, 2.89]
9 Side effects	97		Risk Ratio (M-H, Random, 95% CI)	Subtotals only
9.1 Constipation: Placebo versus Dexamethasone; Fujii	1	50	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.07, 15.12]
9.2 Constipation: Placebo versus Dexamethasone; Not Fujii	1	125	Risk Ratio (M-H, Random, 95% CI)	0.41 [0.17, 1.02]
9.3 Constipation: Placebo versus Granisetron; Fujii	4	330	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.37, 2.68]
9.4 Constipation: Placebo versus Granisetron; Not Fujii	2	113	Risk Ratio (M-H, Random, 95% CI)	1.18 [0.21, 6.74]
9.5 Dizziness: Placebo versus Dexamethasone; Fujii	7	576	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.50, 2.03]
9.6 Dizziness: Placebo versus Dexamethasone; Not Fujii	9	685	Risk Ratio (M-H, Random, 95% CI)	1.06 [0.77, 1.47]
9.7 Dizziness: Placebo versus Droperidol; Fujii	8	308	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.40, 2.54]
9.8 Dizziness: Placebo versus Droperidol; Not Fujii	11	1749	Risk Ratio (M-H, Random, 95% CI)	0.98 [0.73, 1.31]
9.9 Dizziness: Placebo versus Granisetron; Fujii	19	1232	Risk Ratio (M-H, Random, 95% CI)	0.76 [0.47, 1.25]
9.10 Dizziness: Placebo versus Granisetron; Not Fujii	1	39	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.08, 17.35]
9.11 Dizziness: Placebo versus Metoclopramide; Fujii	3	60	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.22, 4.56]
9.12 Dizziness: Placebo versus Metoclopramide; Not Fujii	7	614	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.41, 1.60]
9.13 Headache: Placebo versus Dexamethasone; Fujii	9	686	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.61, 1.65]



9.14 Headache: Placebo versus Dexamethasone; Not Fujii	13	901	Risk Ratio (M-H, Random, 95% CI)	0.77 [0.55, 1.08]
9.15 Headache: Placebo versus Droperidol; Fujii	10	408	Risk Ratio (M-H, Random, 95% CI)	0.96 [0.49, 1.87]
9.16 Headache: Placebo versus Droperidol; Not Fujii	14	1872	Risk Ratio (M-H, Random, 95% CI)	0.79 [0.62, 1.00]
9.17 Headache: Placebo versus Granisetron; Fujii	27	1788	Risk Ratio (M-H, Random, 95% CI)	0.99 [0.72, 1.36]
9.18 Headache: Placebo versus Granisetron; Not Fujii	2	112	Risk Ratio (M-H, Random, 95% CI)	0.66 [0.22, 1.91]
9.19 Headache: Placebo versus Metoclopramide; Fujii	4	84	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.27, 3.74]
9.20 Headache: Placebo versus Metoclopramide; Not Fujii	8	566	Risk Ratio (M-H, Random, 95% CI)	1.01 [0.51, 2.00]
9.21 Itch: Placebo versus Dexamethasone; Fujii	1	120	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.15, 6.87]
9.22 Itch: Placebo versus Dexamethasone; Not Fujii	3	144	Risk Ratio (M-H, Random, 95% CI)	0.99 [0.76, 1.28]
9.23 Sedation: Placebo versus Dexamethasone; Fujii	5	275	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.31, 2.13]
9.24 Sedation: Placebo versus Dexamethasone; Not Fujii	1	36	Risk Ratio (M-H, Random, 95% CI)	0.0 [0.0, 0.0]
9.25 Sedation: Placebo versus Droperidol; Fujii	8	338	Risk Ratio (M-H, Random, 95% CI)	1.17 [0.51, 2.64]
9.26 Sedation: Placebo versus Droperidol; Not Fujii	16	1882	Risk Ratio (M-H, Random, 95% CI)	1.32 [1.14, 1.53]
9.27 Sedation: Placebo versus Metoclopramide; Fujii	3	64	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.22, 4.59]
9.28 Sedation: Placebo versus Metoclopramide; Not Fujii	9	397	Risk Ratio (M-H, Random, 95% CI)	1.12 [0.74, 1.71]
9.29 Dizziness: Droperidol versus Granisetron; Fujii	10	398	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.48, 2.09]
9.30 Dizziness: Droperidol versus Granisetron; Not Fujii	1	134	Risk Ratio (M-H, Random, 95% CI)	0.72 [0.34, 1.54]
9.31 Dizziness: Droperidol versus Metoclopramide; Fujii	9	310	Risk Ratio (M-H, Random, 95% CI)	1.19 [0.52, 2.69]
9.32 Dizziness: Droperidol versus Metoclopramide; Not Fujii	1	36	Risk Ratio (M-H, Random, 95% CI)	3.0 [0.13, 69.09]
9.33 Dizziness: Granisetron versus Ramosetron; Fujii	3	300	Risk Ratio (M-H, Random, 95% CI)	1.0 [0.30, 3.38]
9.34 Dizziness: Granisetron versus Ramosetron; Not Fujii	1	36	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.04, 2.91]
9.35 Headache: Droperidol versus Granisetron; Fujii	11	428	Risk Ratio (M-H, Random, 95% CI)	0.91 [0.48, 1.73]
9.36 Headache: Droperidol versus Granisetron; Not Fujii	1	134	Risk Ratio (M-H, Random, 95% CI)	0.58 [0.32, 1.07]
9.37 Headache: Droperidol versus Metoclopramide; Fujii	10	340	Risk Ratio (M-H, Random, 95% CI)	1.44 [0.68, 3.04]

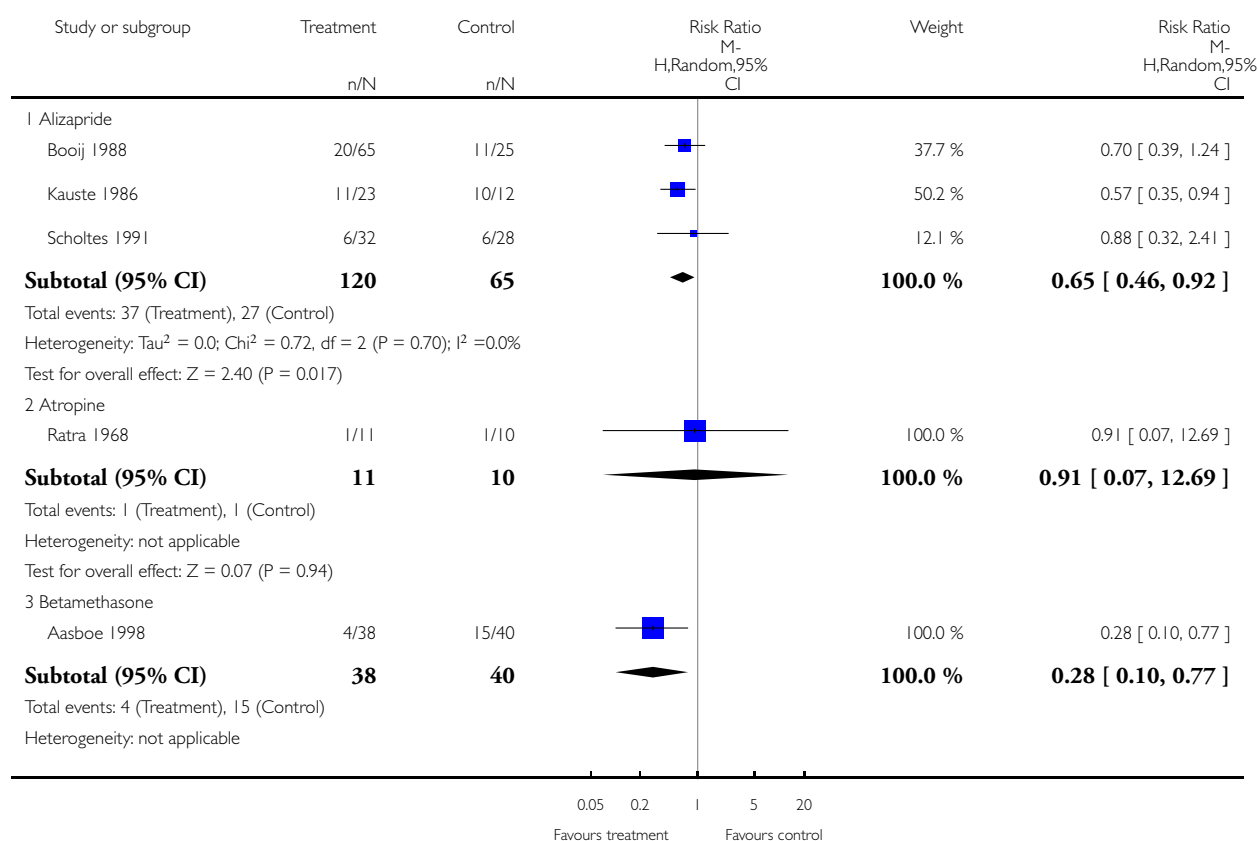
9.38 Headache: Droperidol versus Metoclopramide; Not Fujii	2	83	Risk Ratio (M-H, Random, 95% CI)	1.00 [0.31, 3.29]
9.39 Headache: Granisetron versus Ramosetron; Fujii	3	300	Risk Ratio (M-H, Random, 95% CI)	1.25 [0.51, 3.09]
9.40 Headache: Granisetron versus Ramosetron; Not Fujii	1	36	Risk Ratio (M-H, Random, 95% CI)	0.71 [0.28, 1.84]
9.41 Sedation: Droperidol versus Metoclopramide; Fujii	4	130	Risk Ratio (M-H, Random, 95% CI)	1.48 [0.43, 5.05]
9.42 Sedation: Droperidol versus Metoclopramide; Not Fujii	4	204	Risk Ratio (M-H, Random, 95% CI)	1.26 [0.88, 1.80]

### Analysis 1.1. Comparison 1 PRIMARY ANALYSIS: Placebo versus Drug, Outcome 1 Nausea.

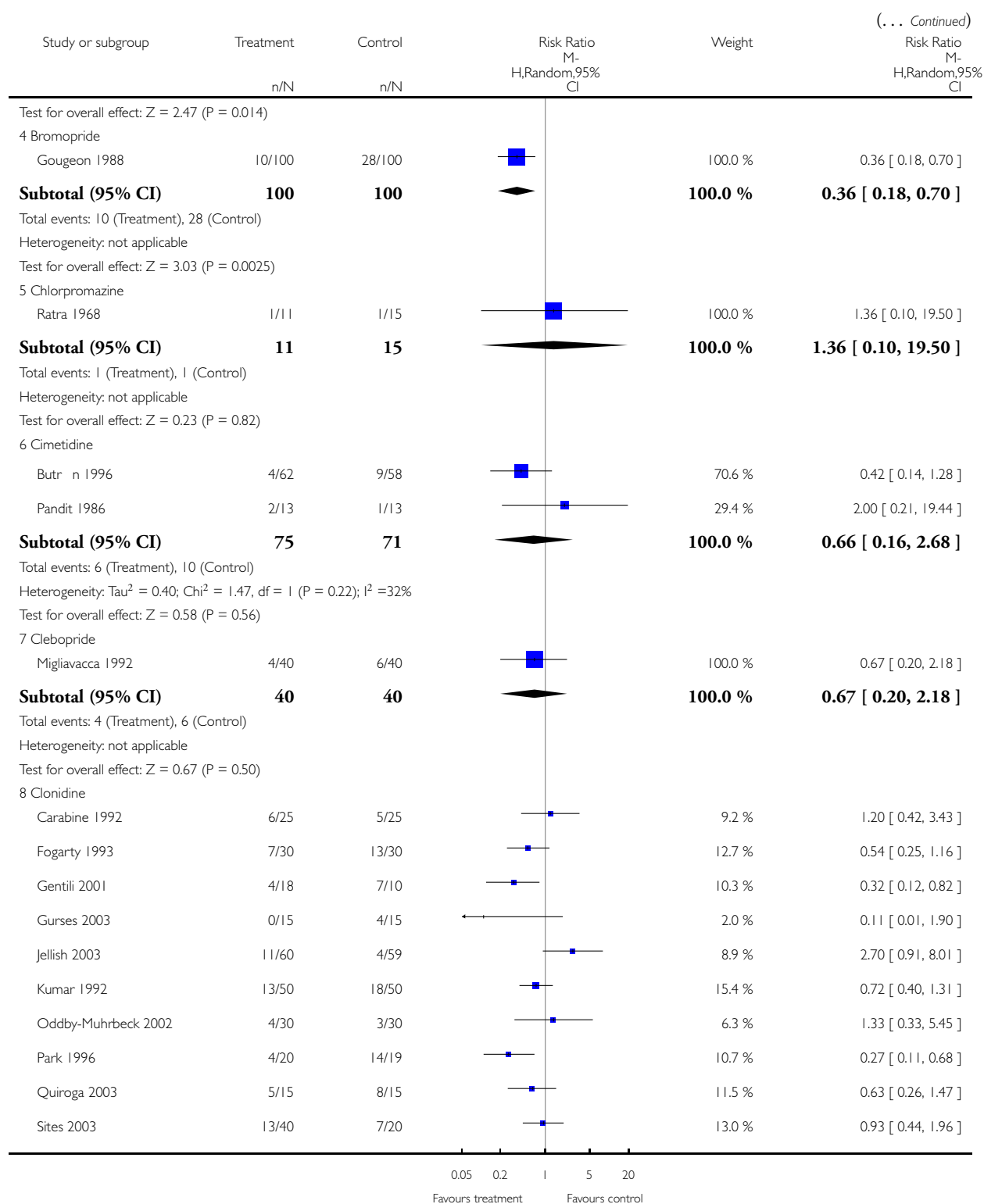
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 1 PRIMARY ANALYSIS: Placebo versus Drug

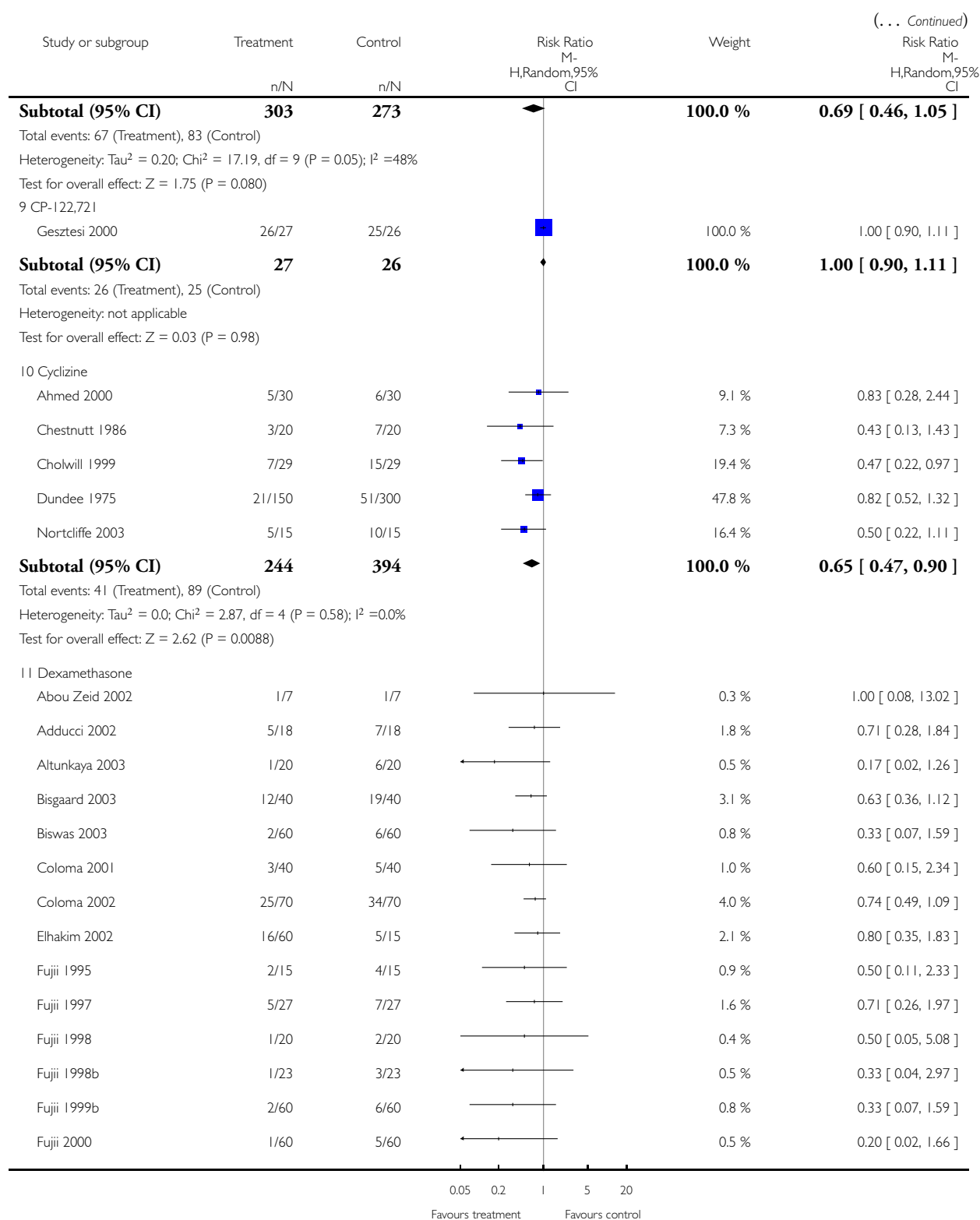
Outcome: 1 Nausea



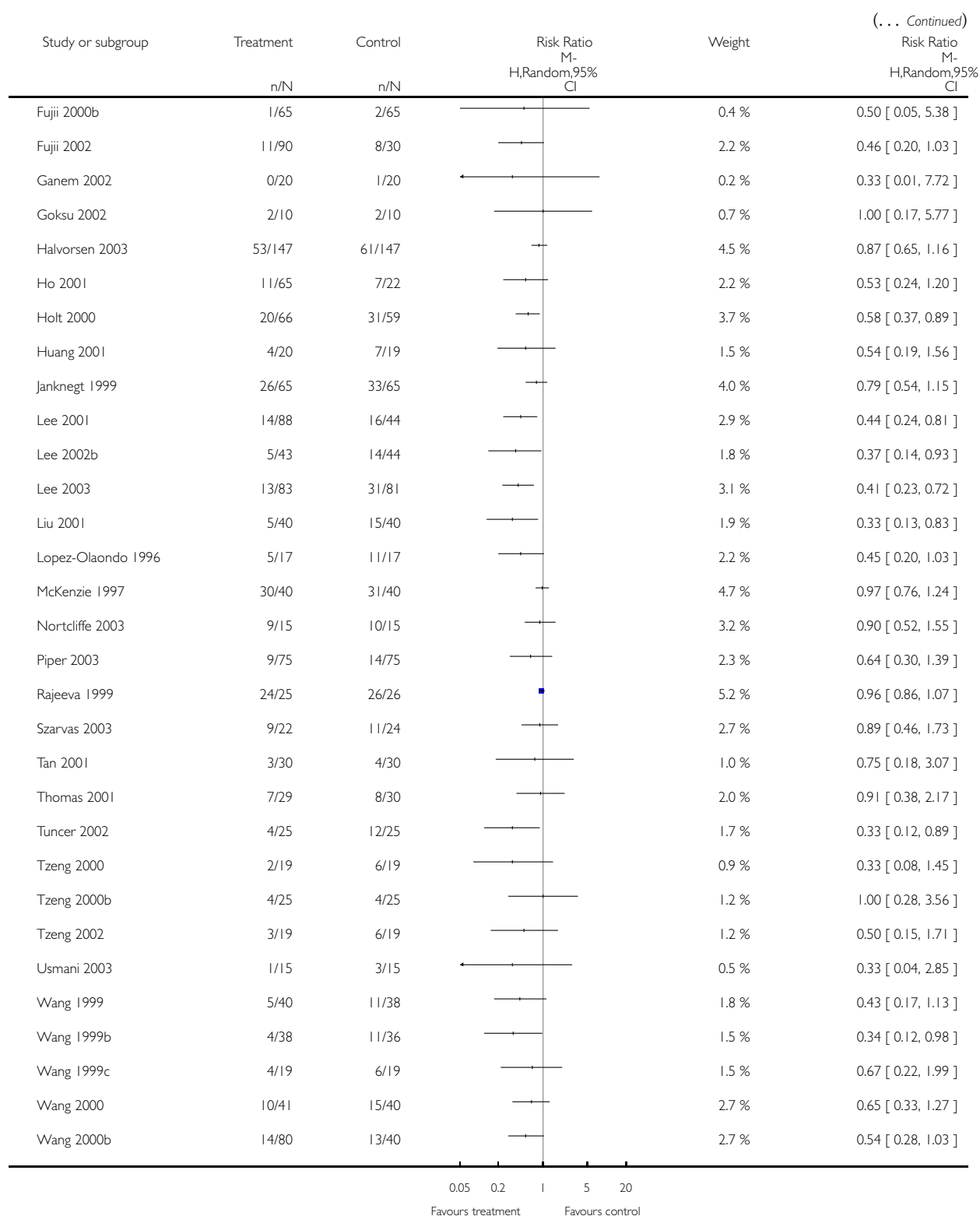
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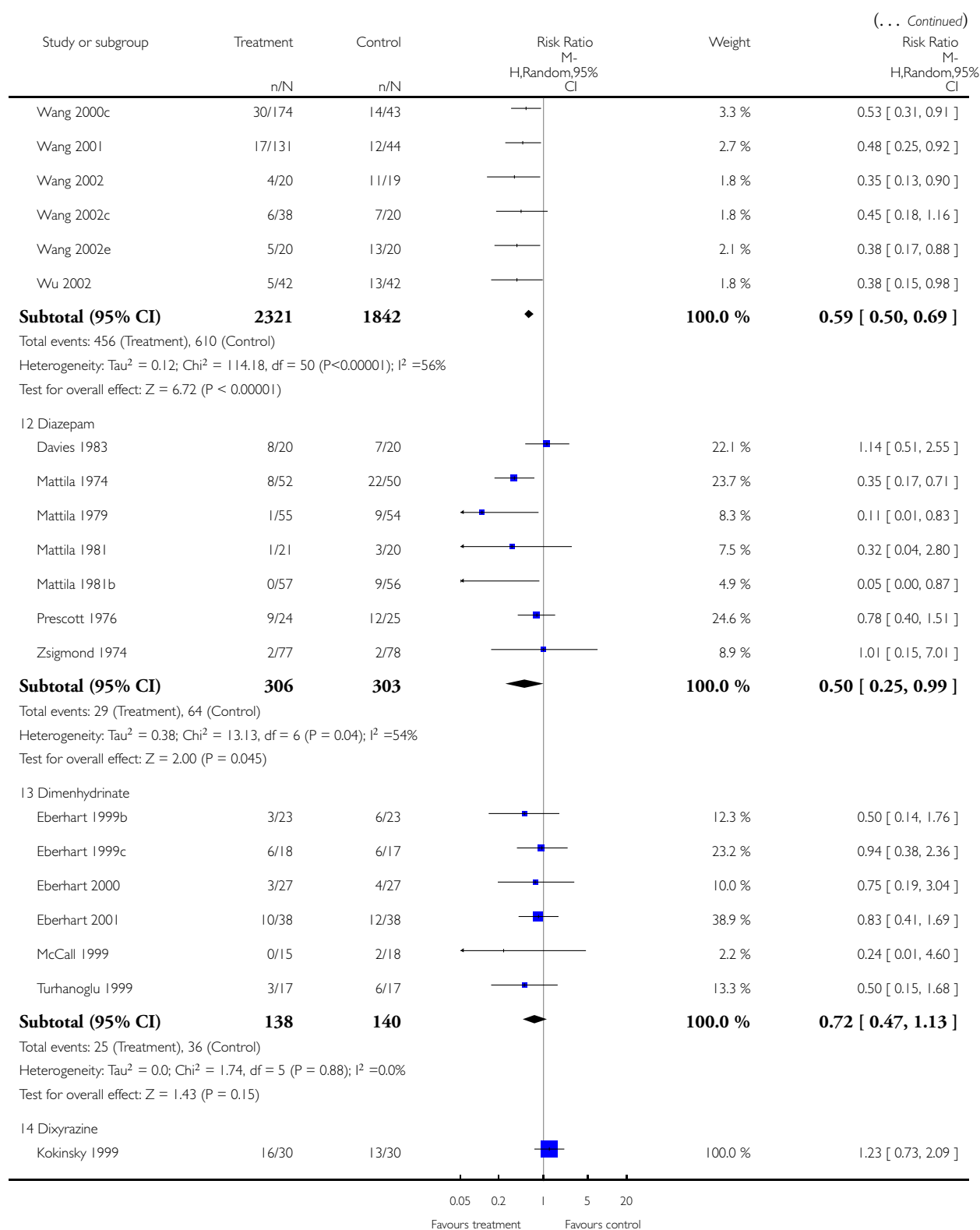


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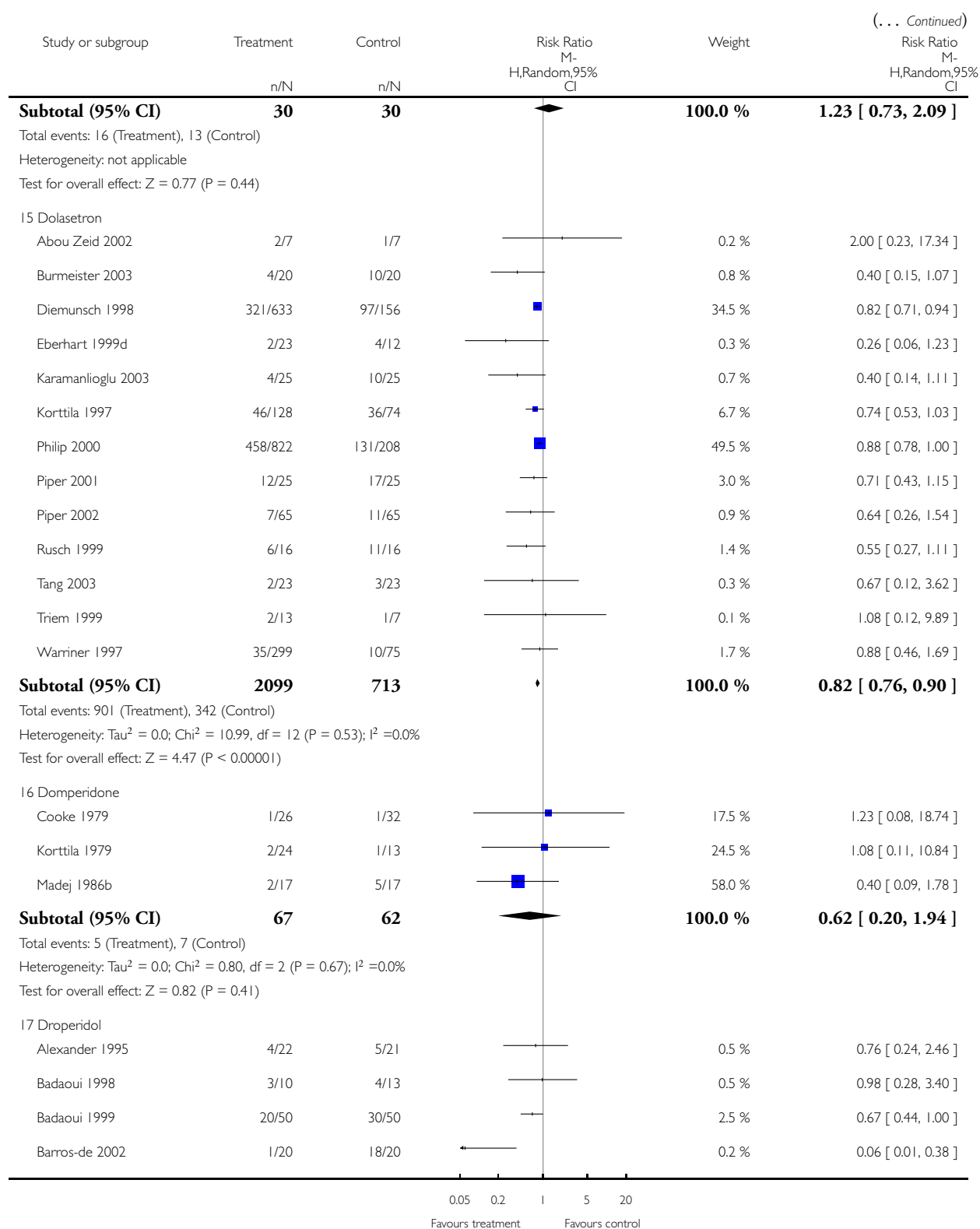


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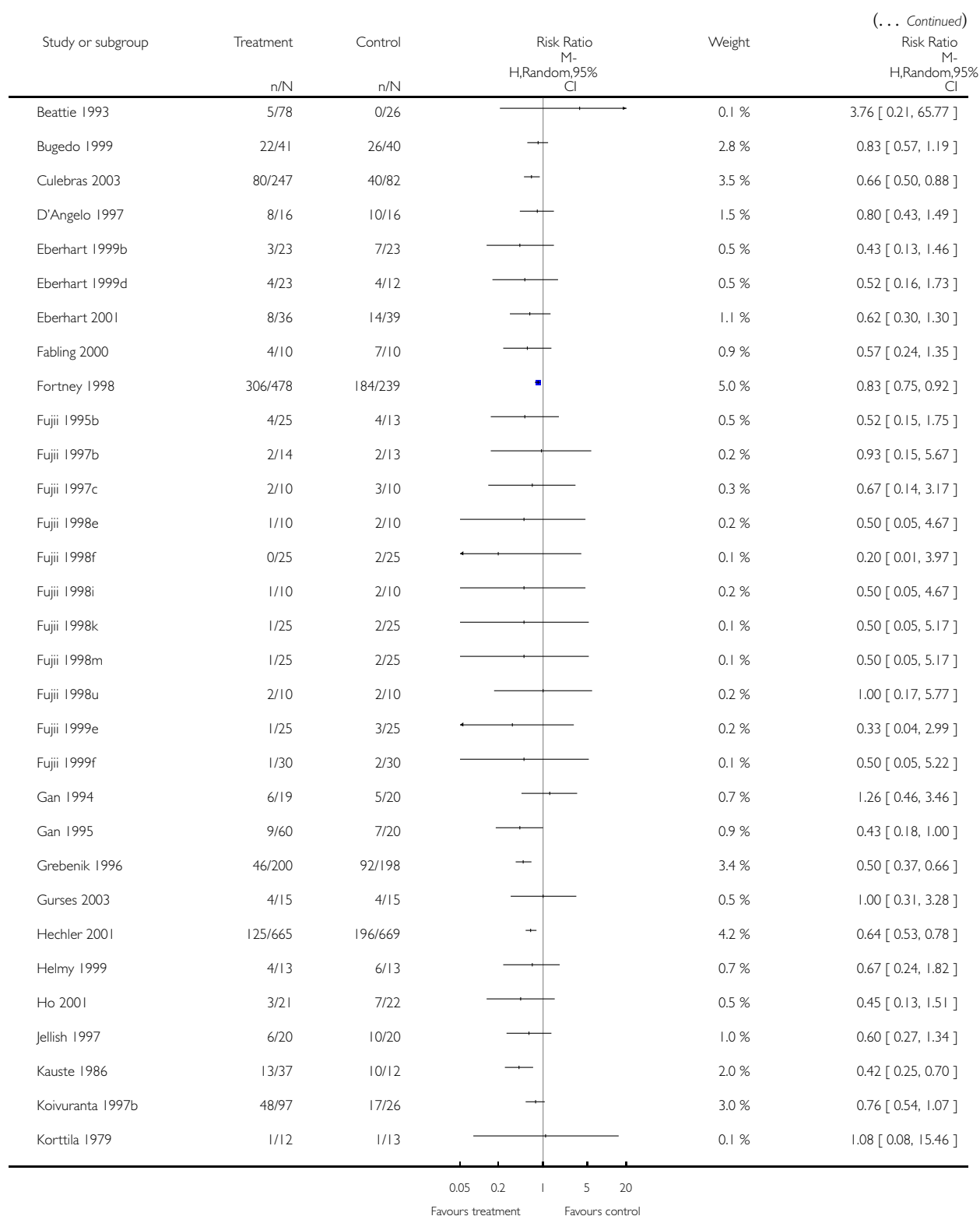




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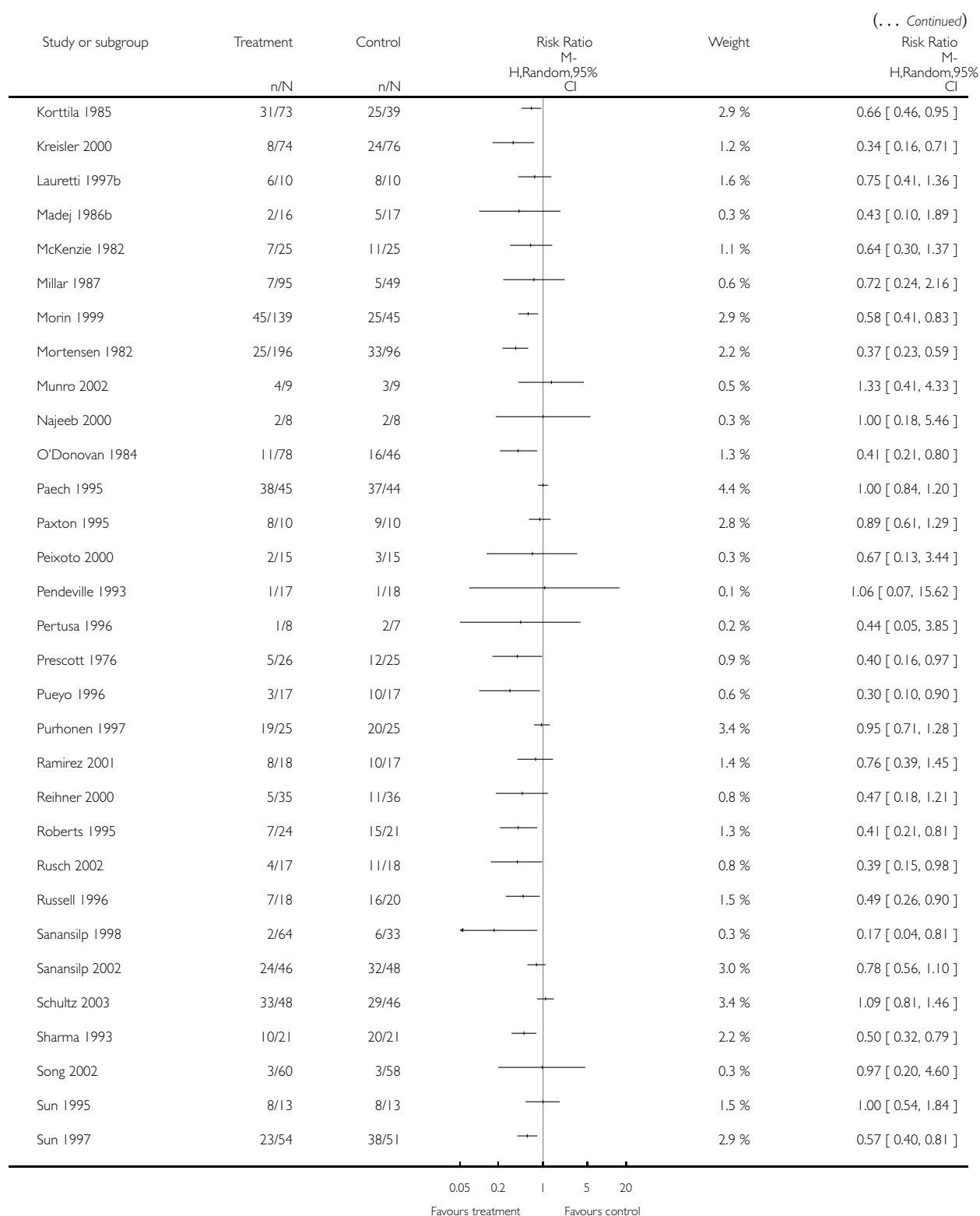


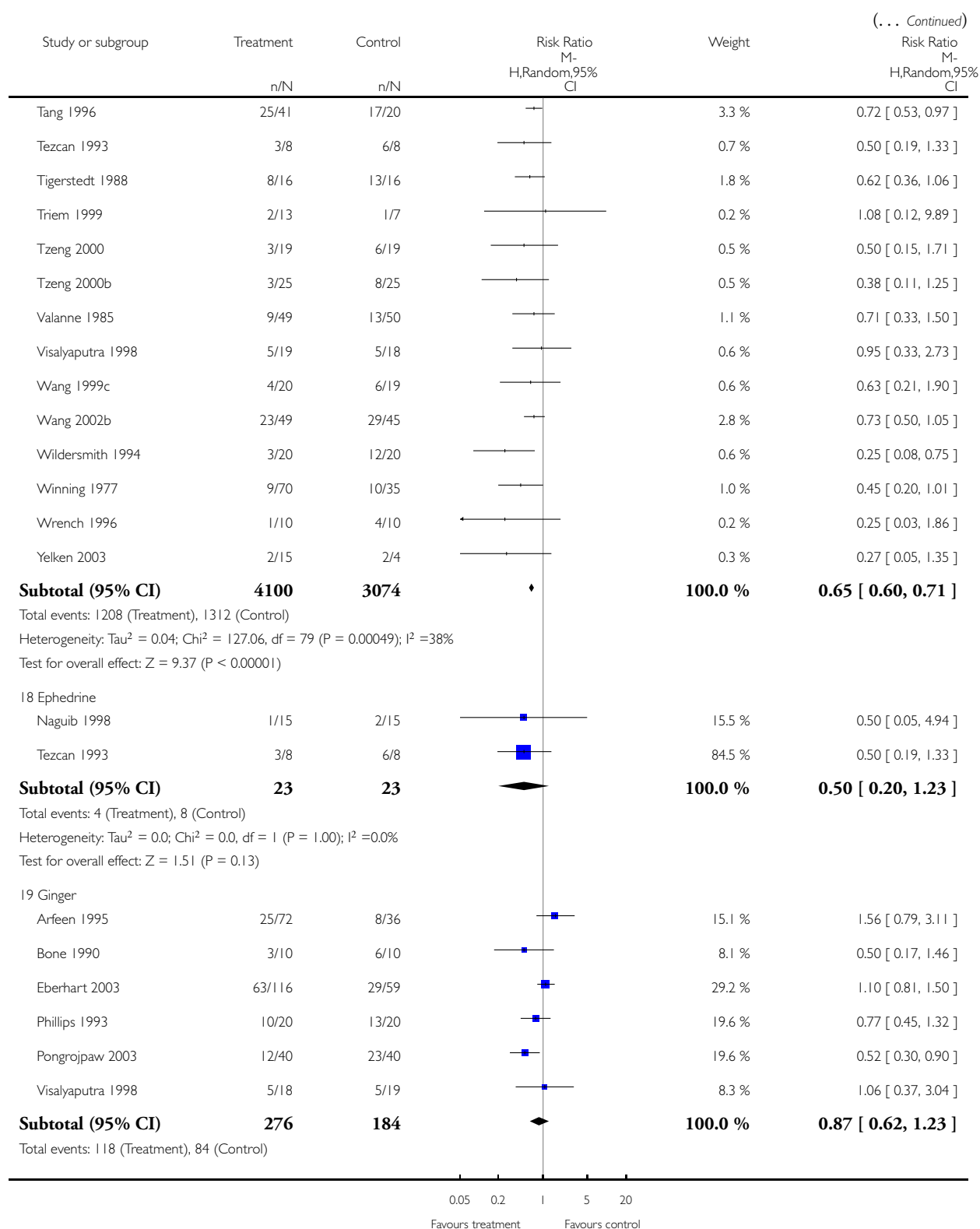
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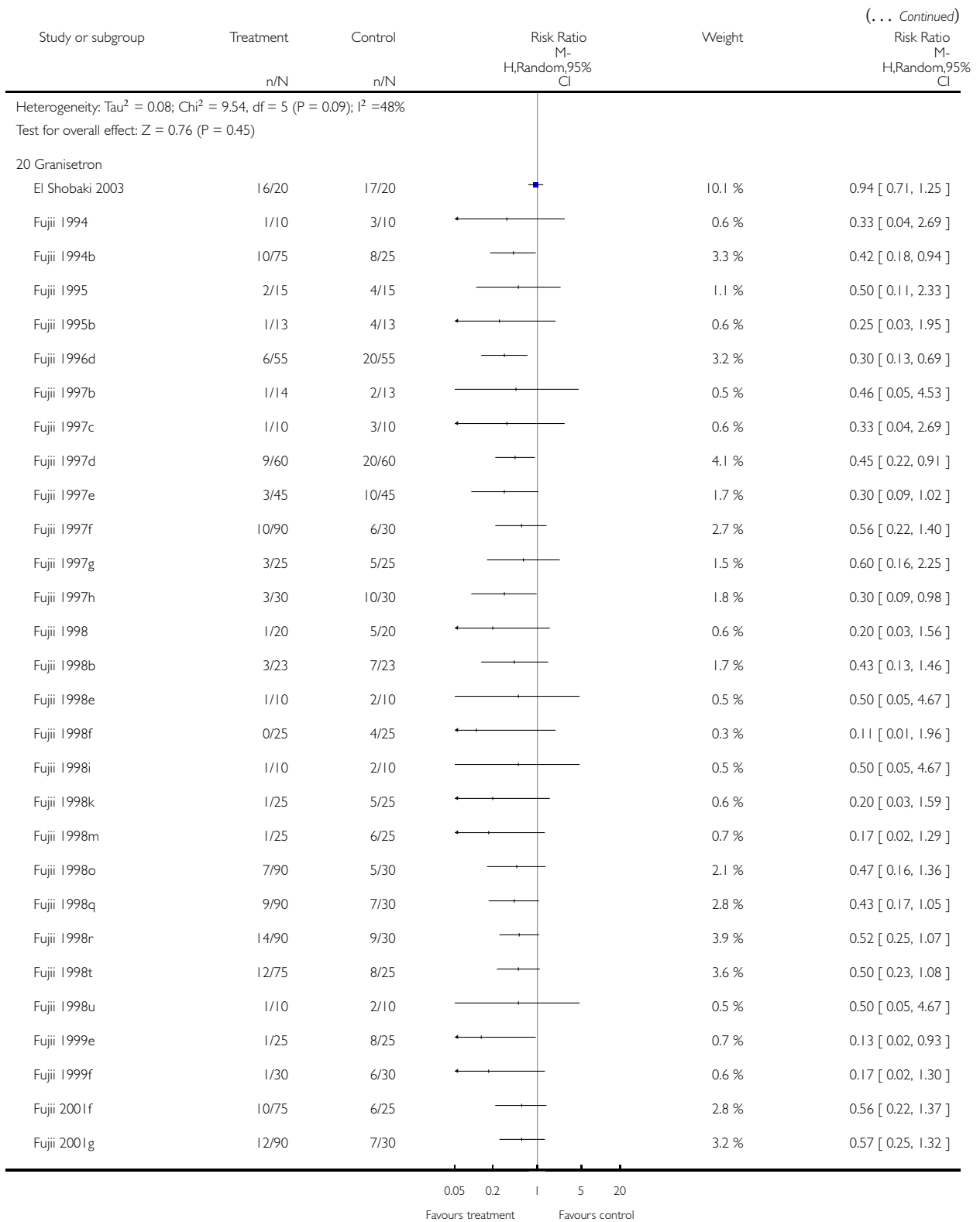
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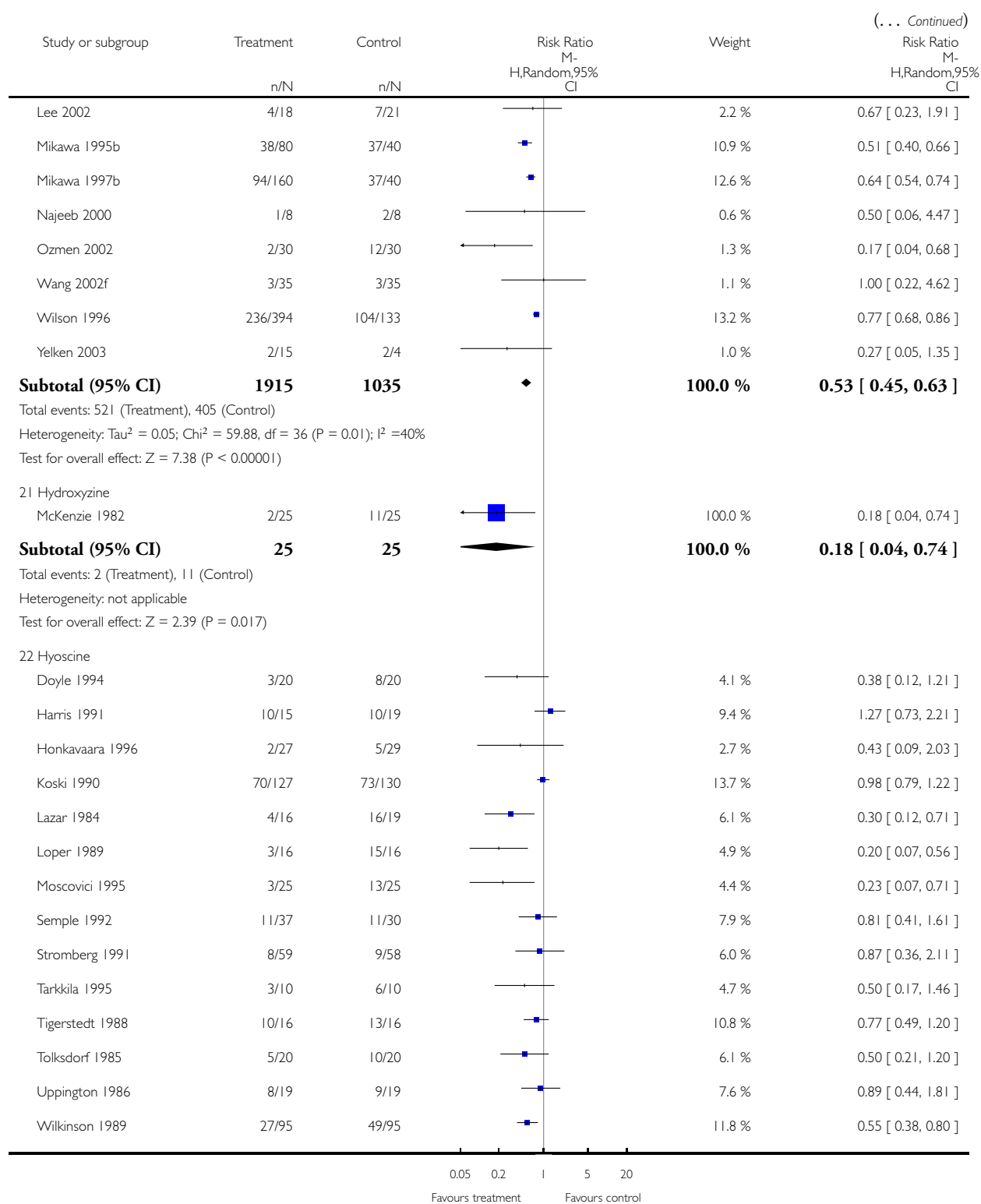




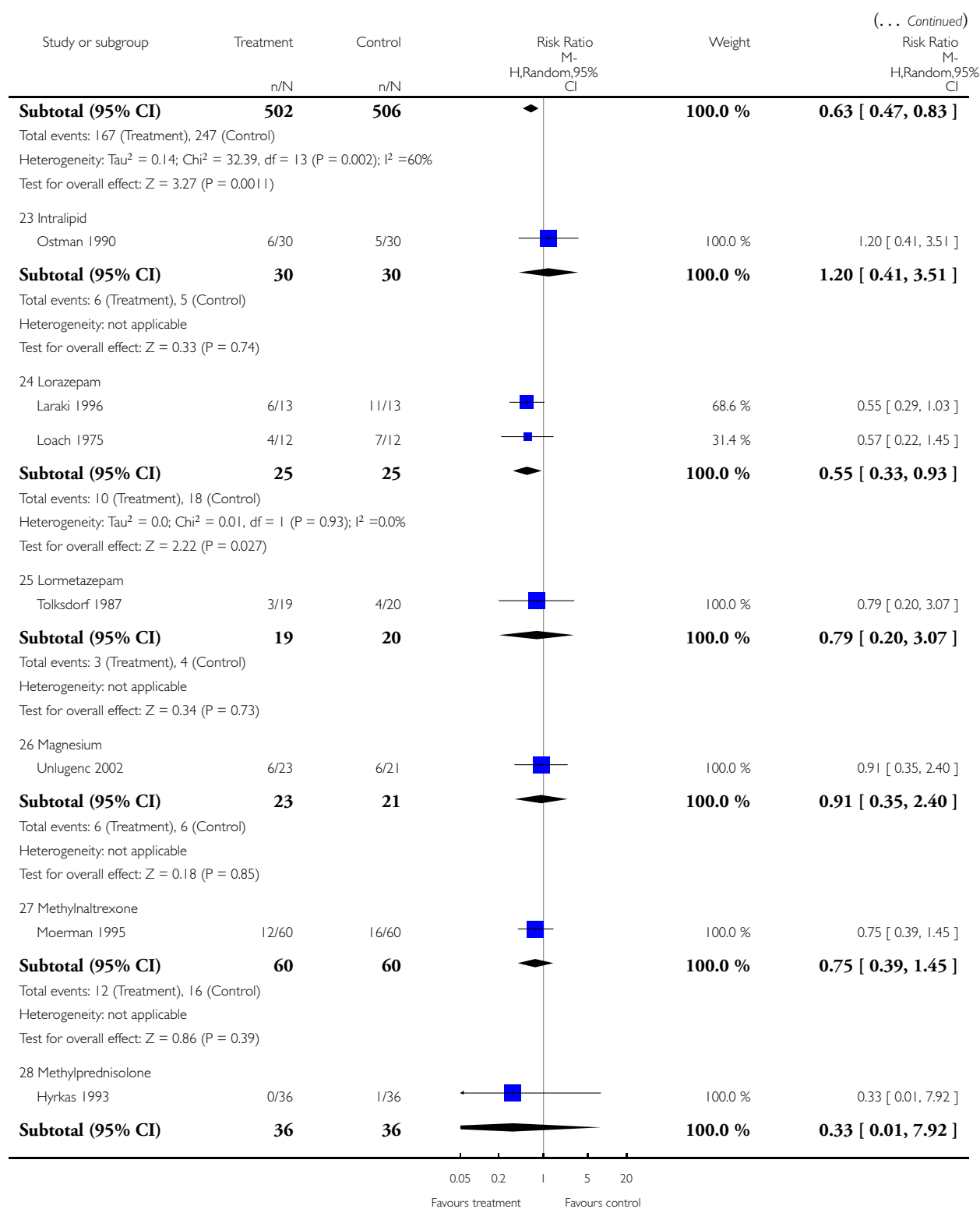


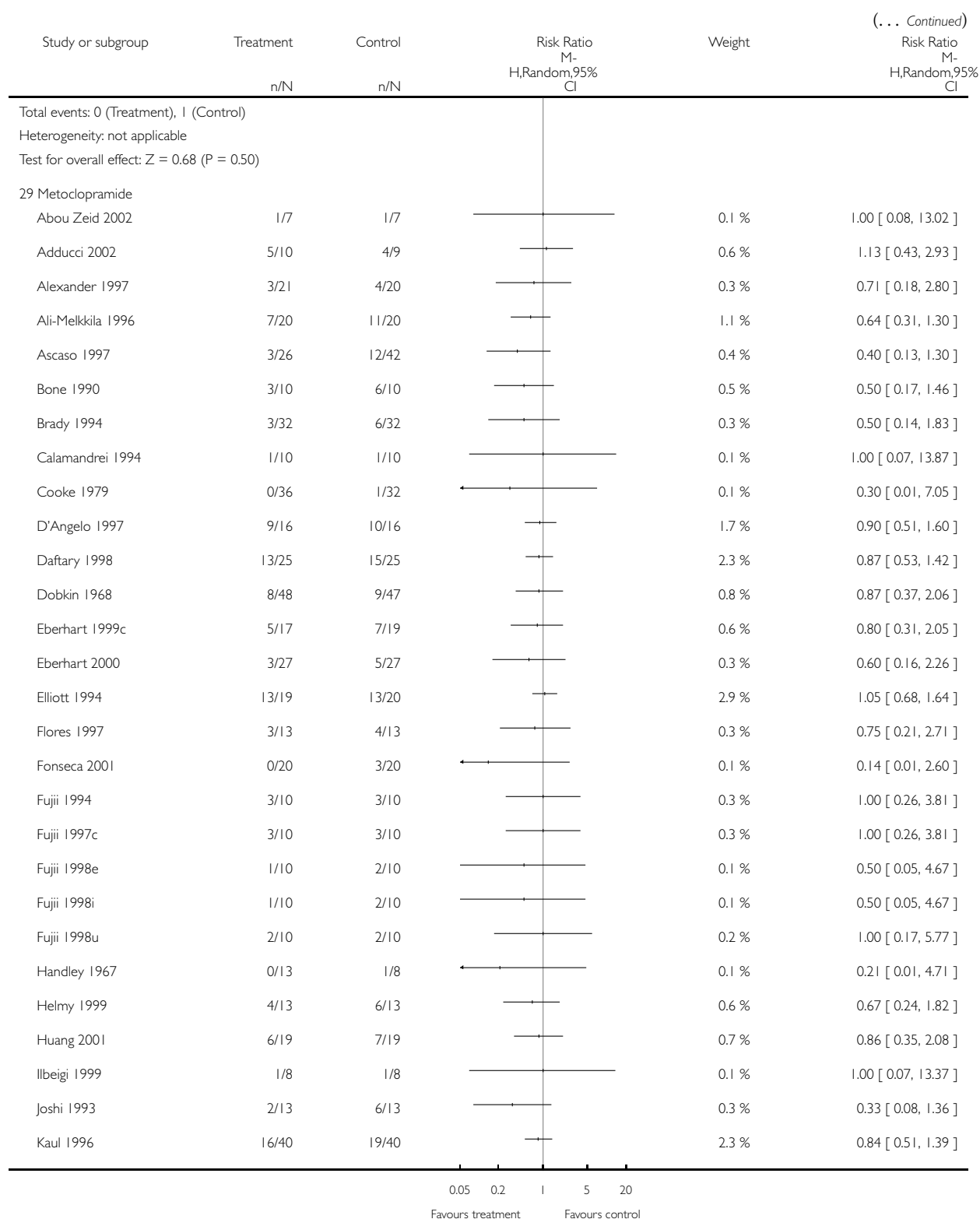
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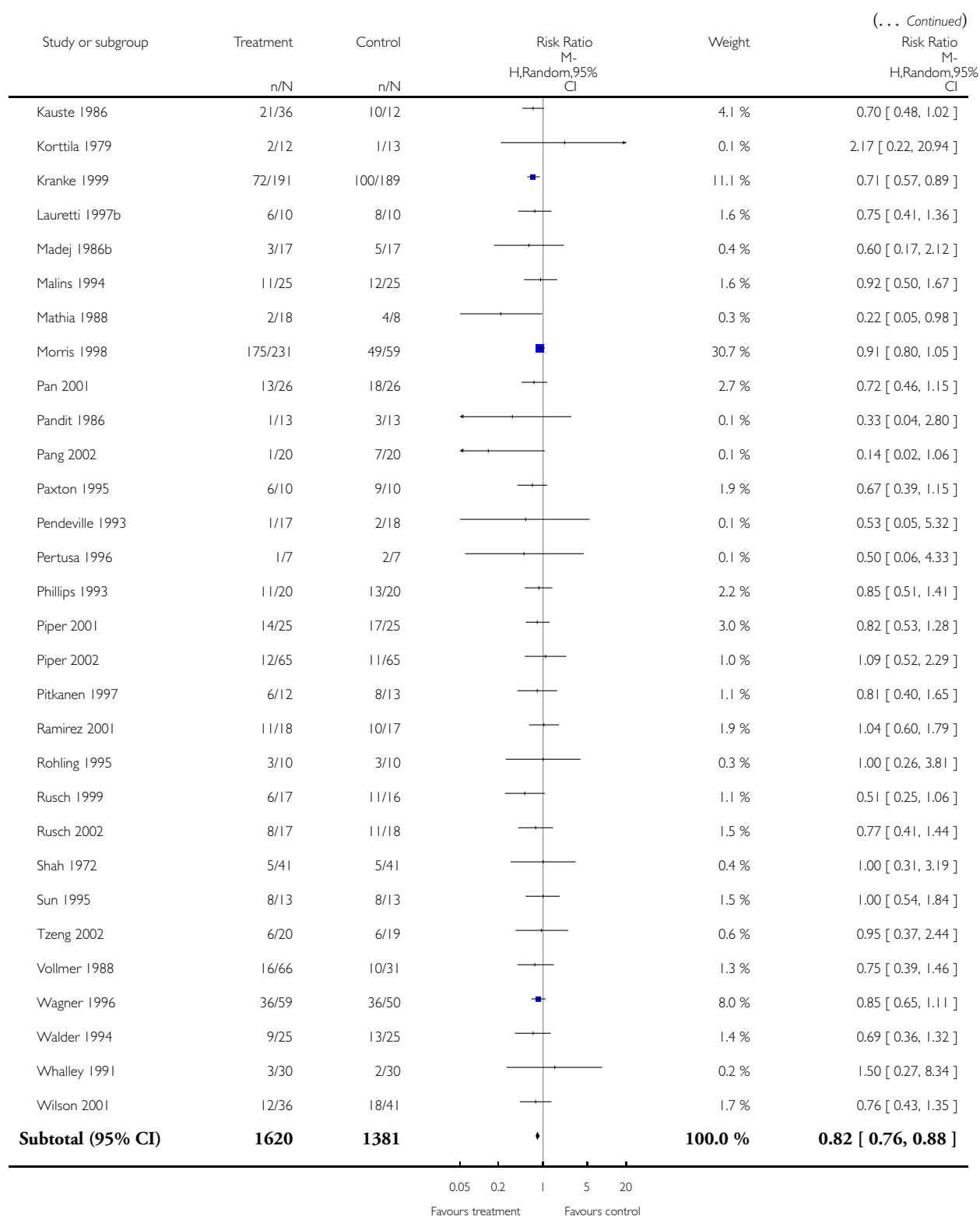




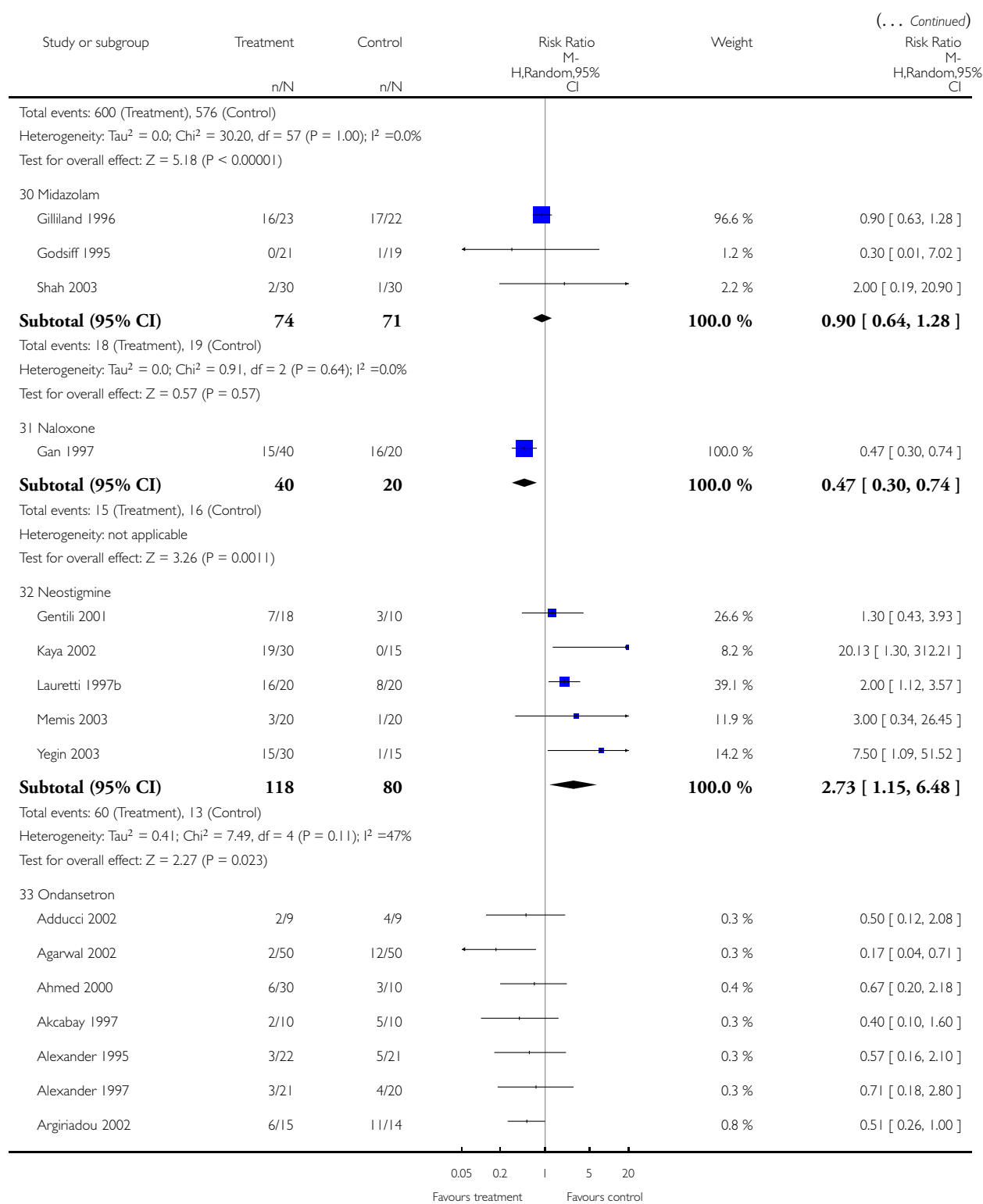
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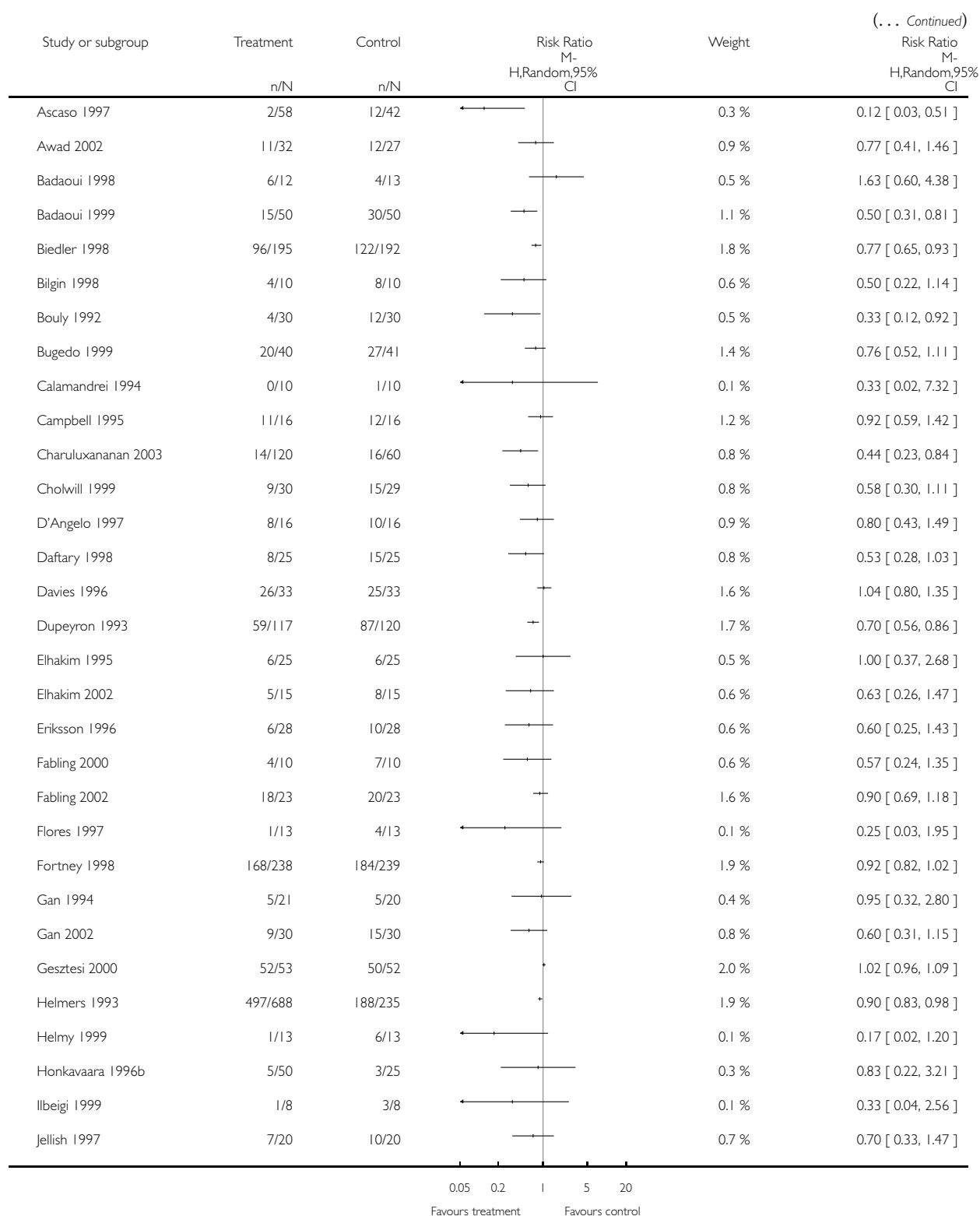


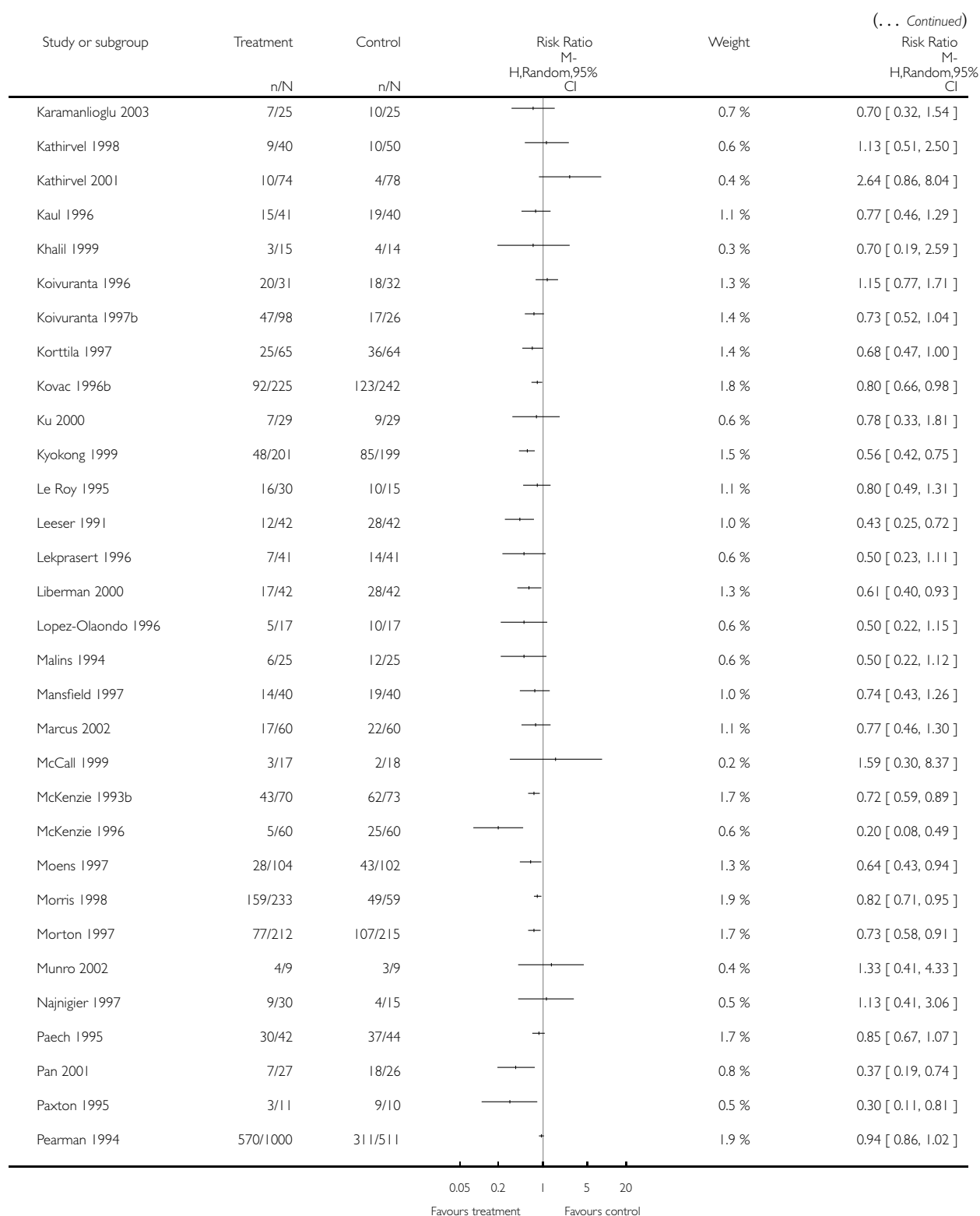


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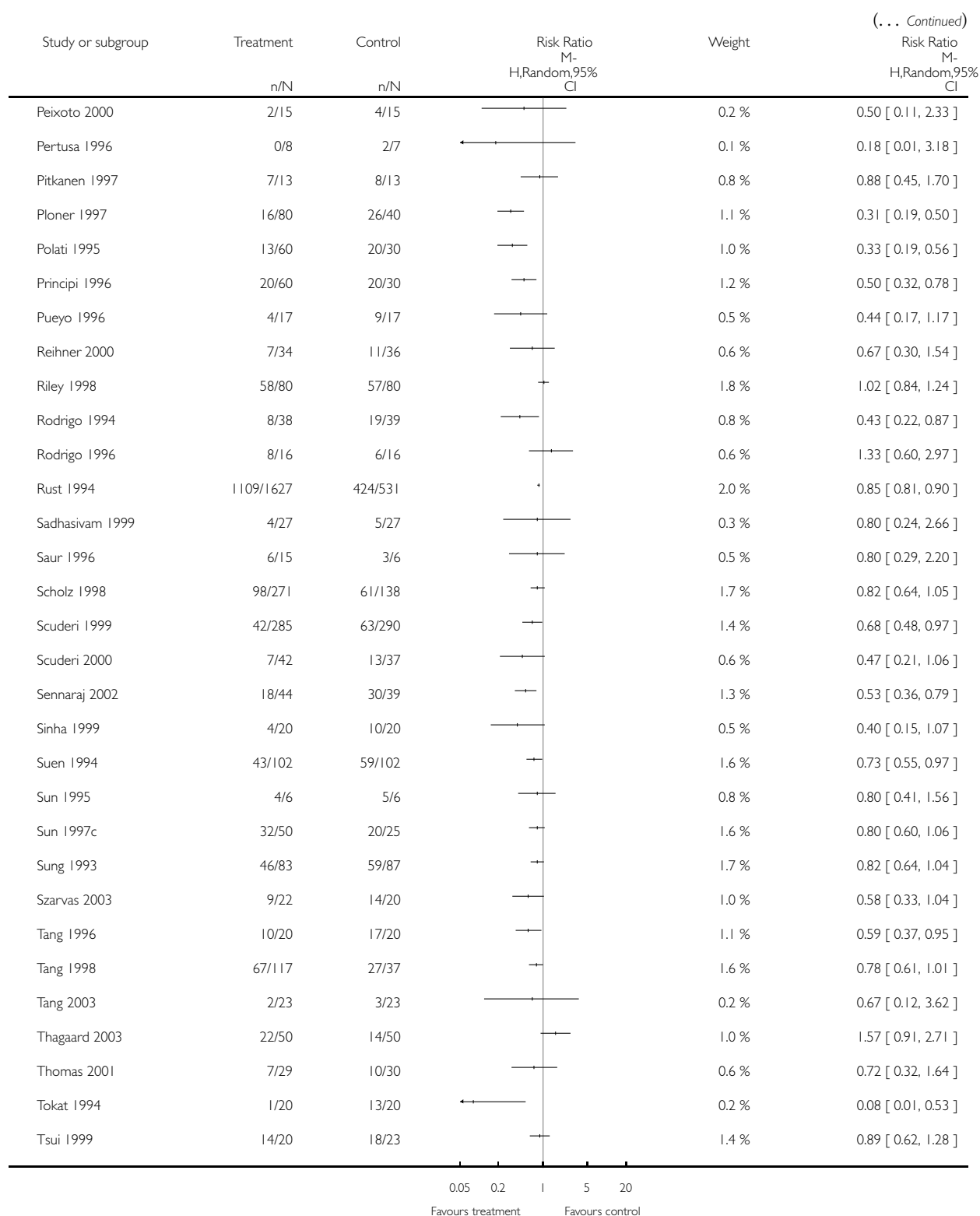


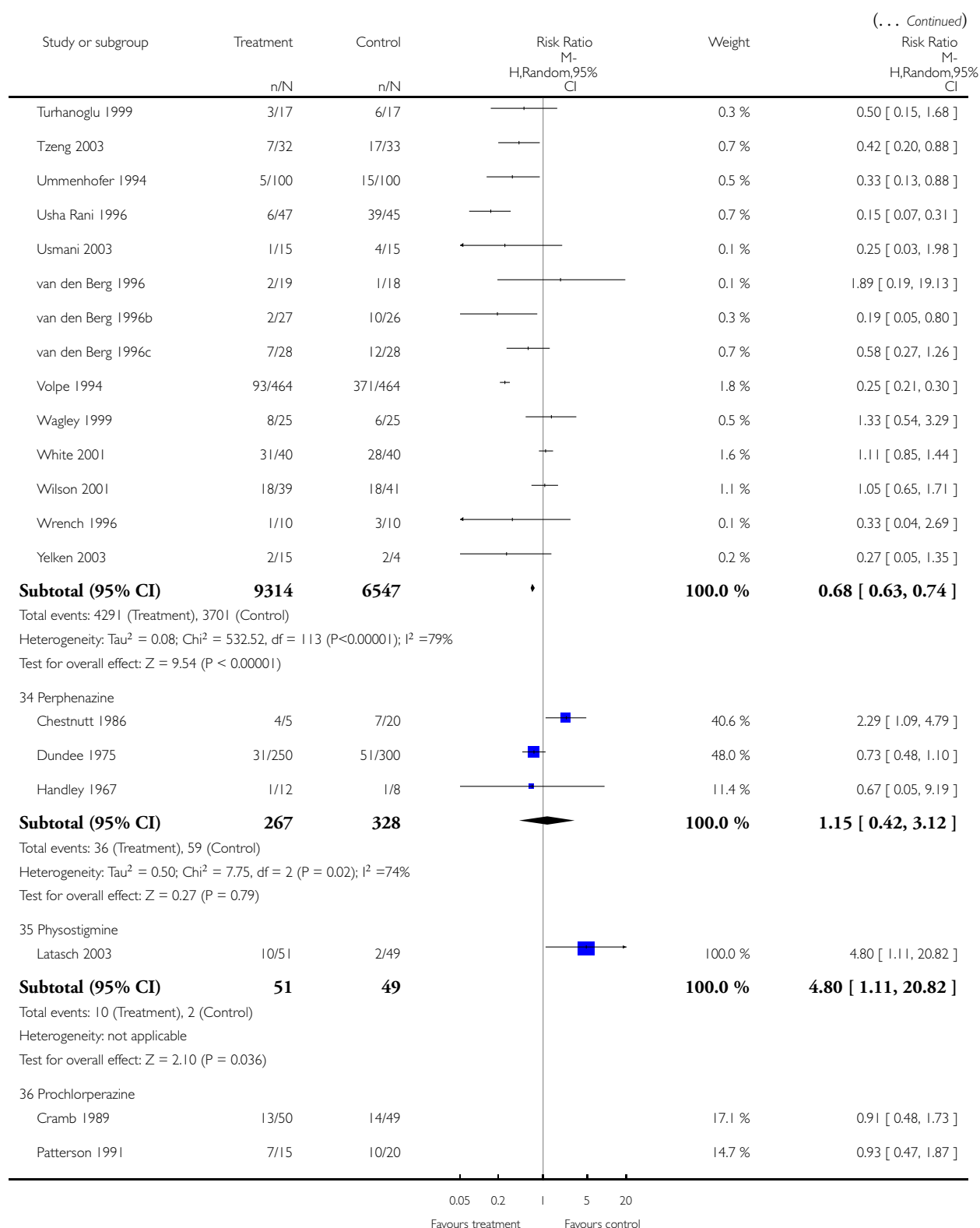




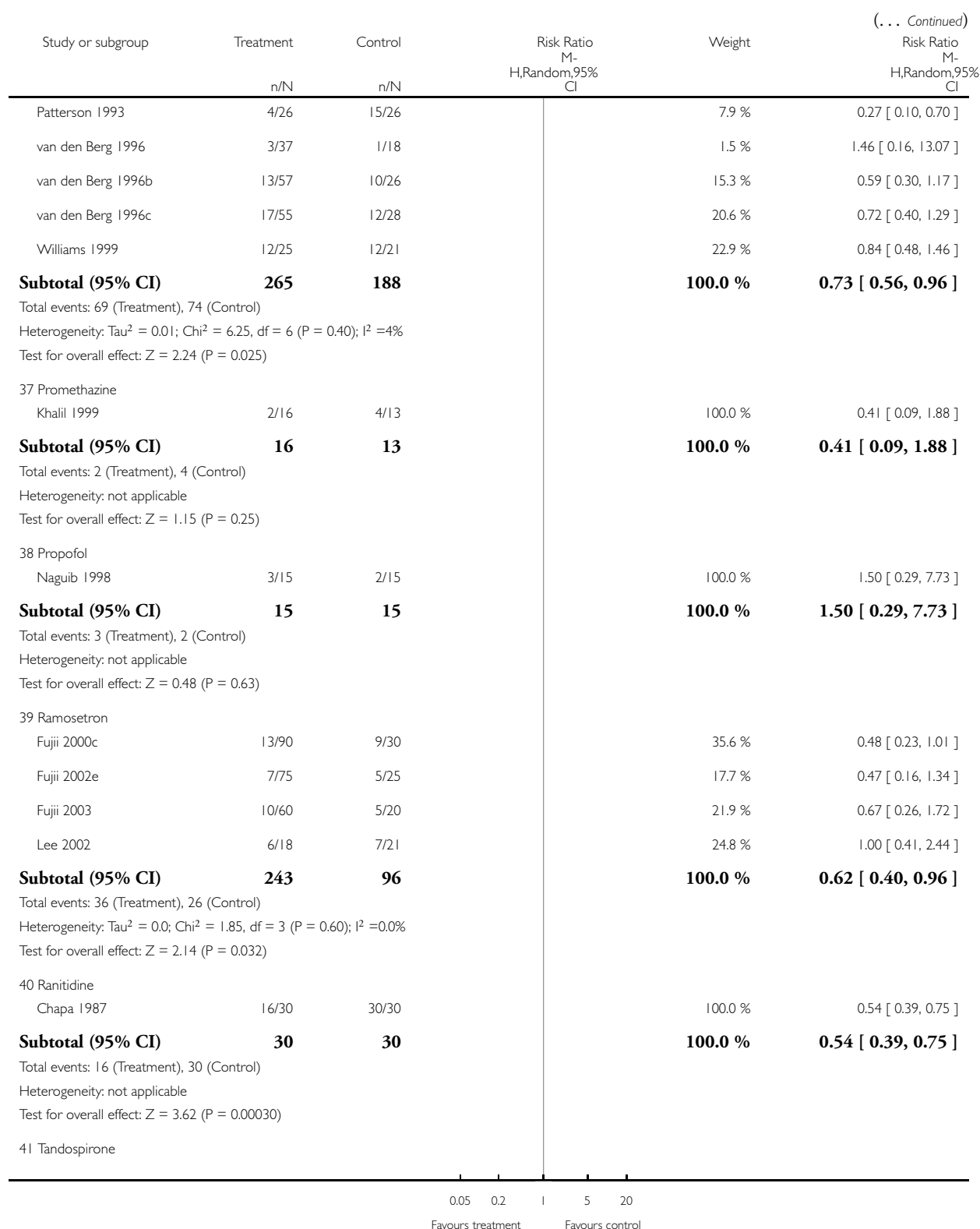


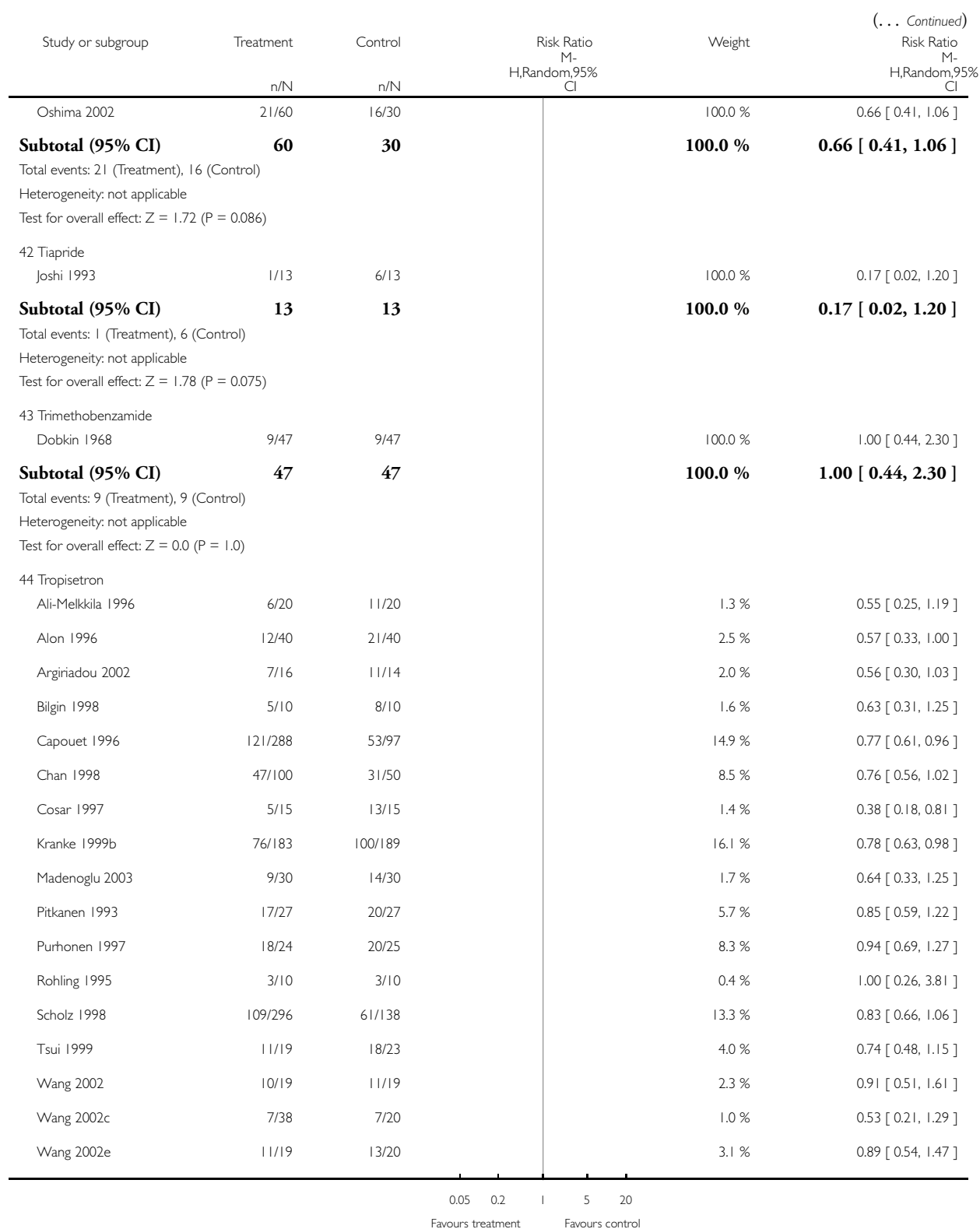
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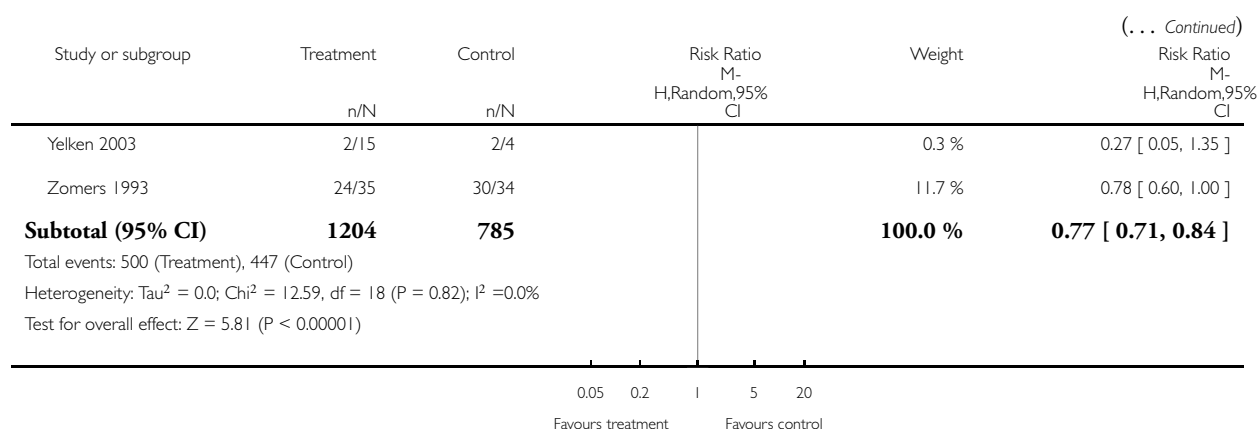


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(Continued . . .)

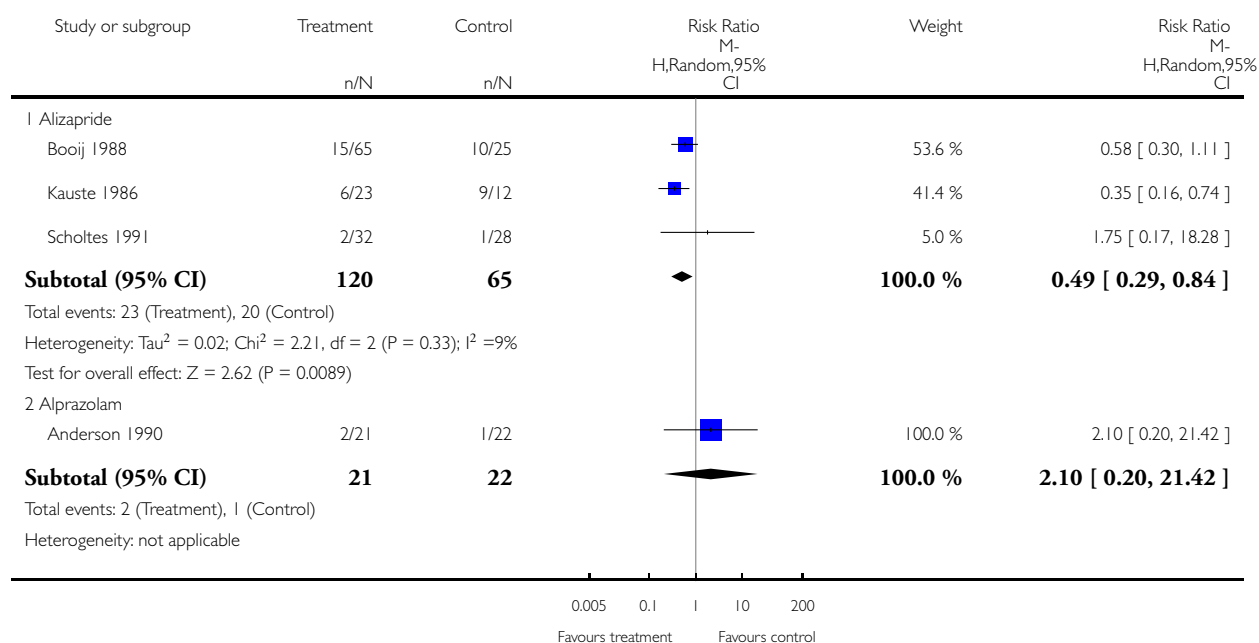


## Analysis 1.2. Comparison 1 PRIMARY ANALYSIS: Placebo versus Drug, Outcome 2 Vomiting.

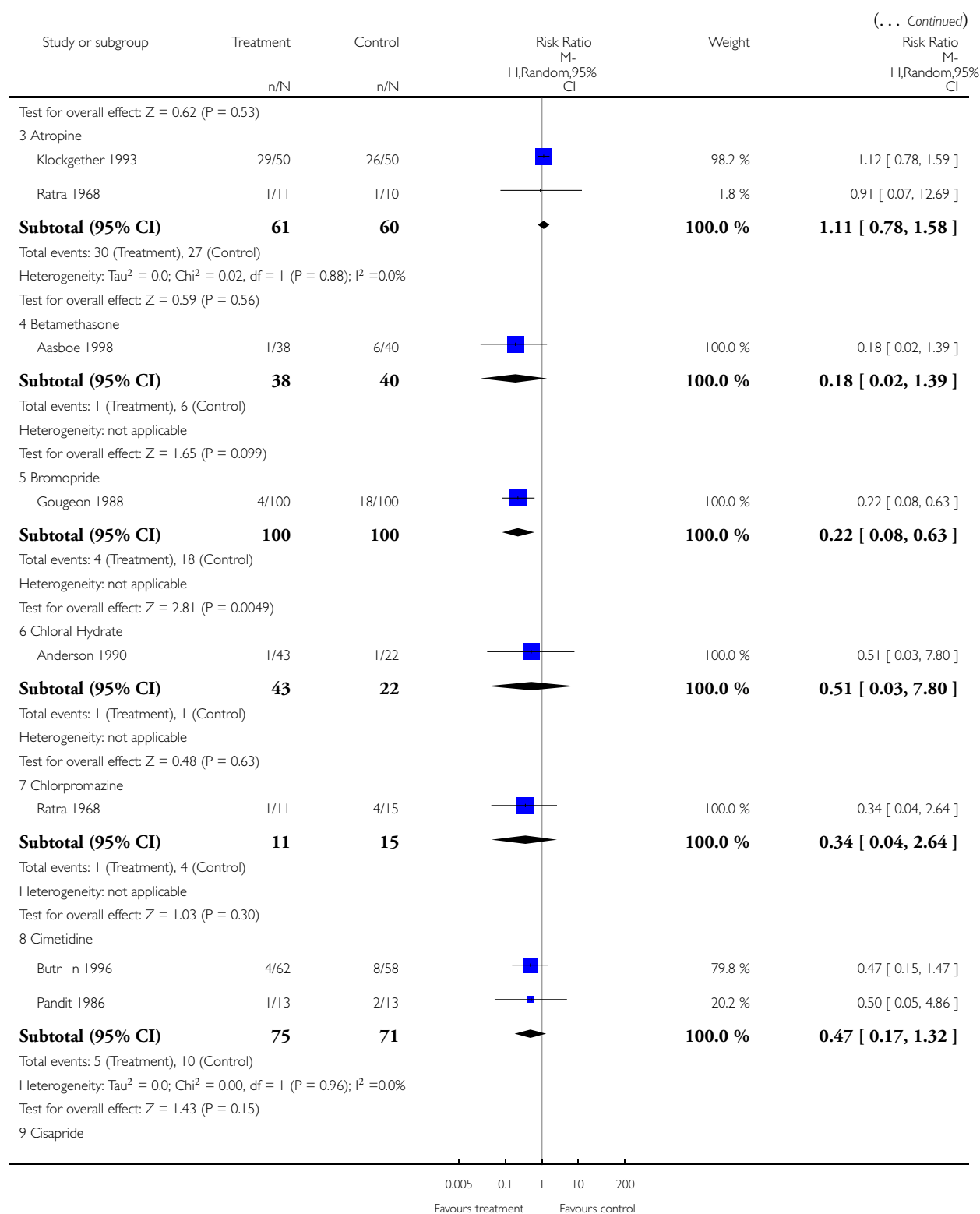
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 1 PRIMARY ANALYSIS: Placebo versus Drug

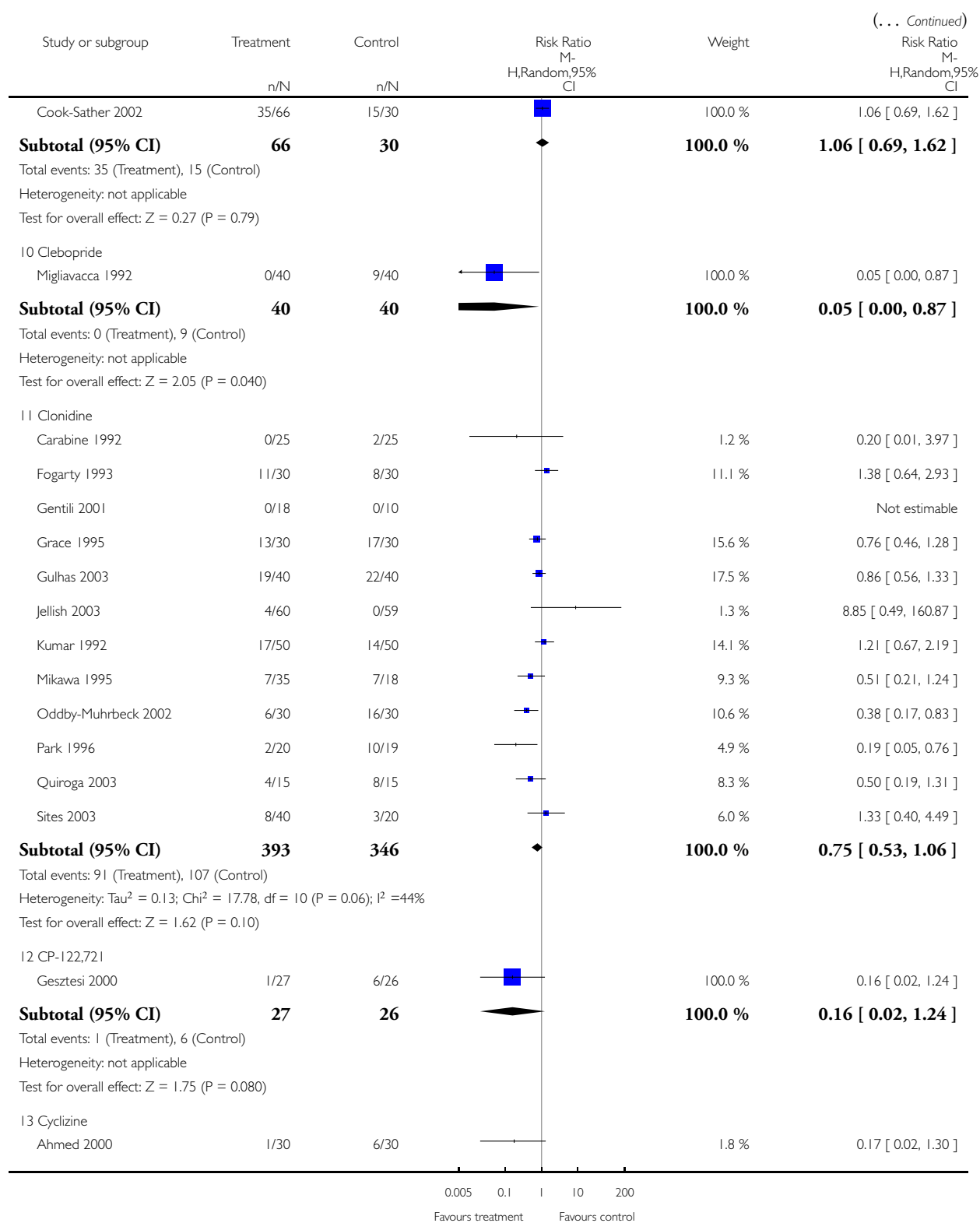
Outcome: 2 Vomiting

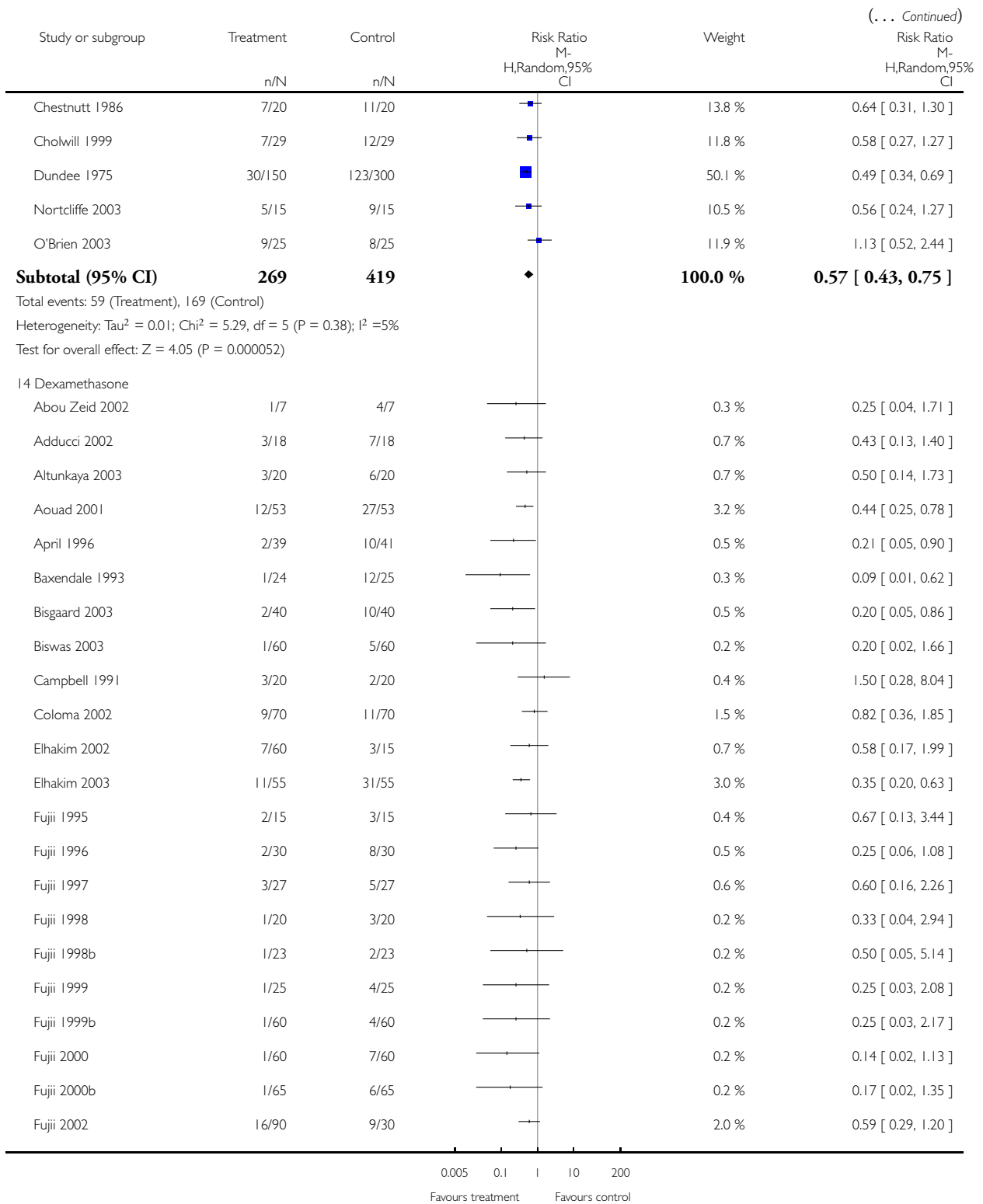


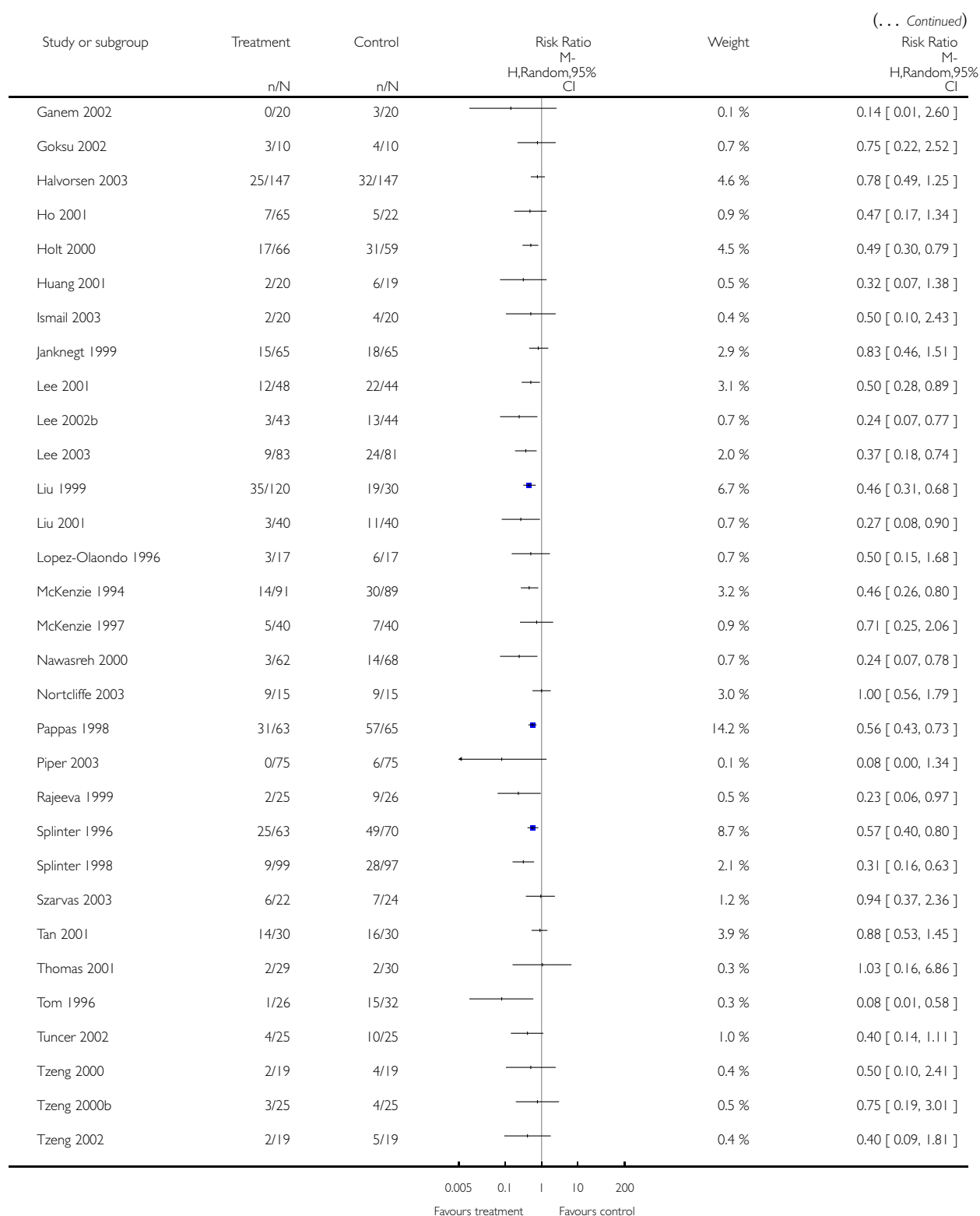
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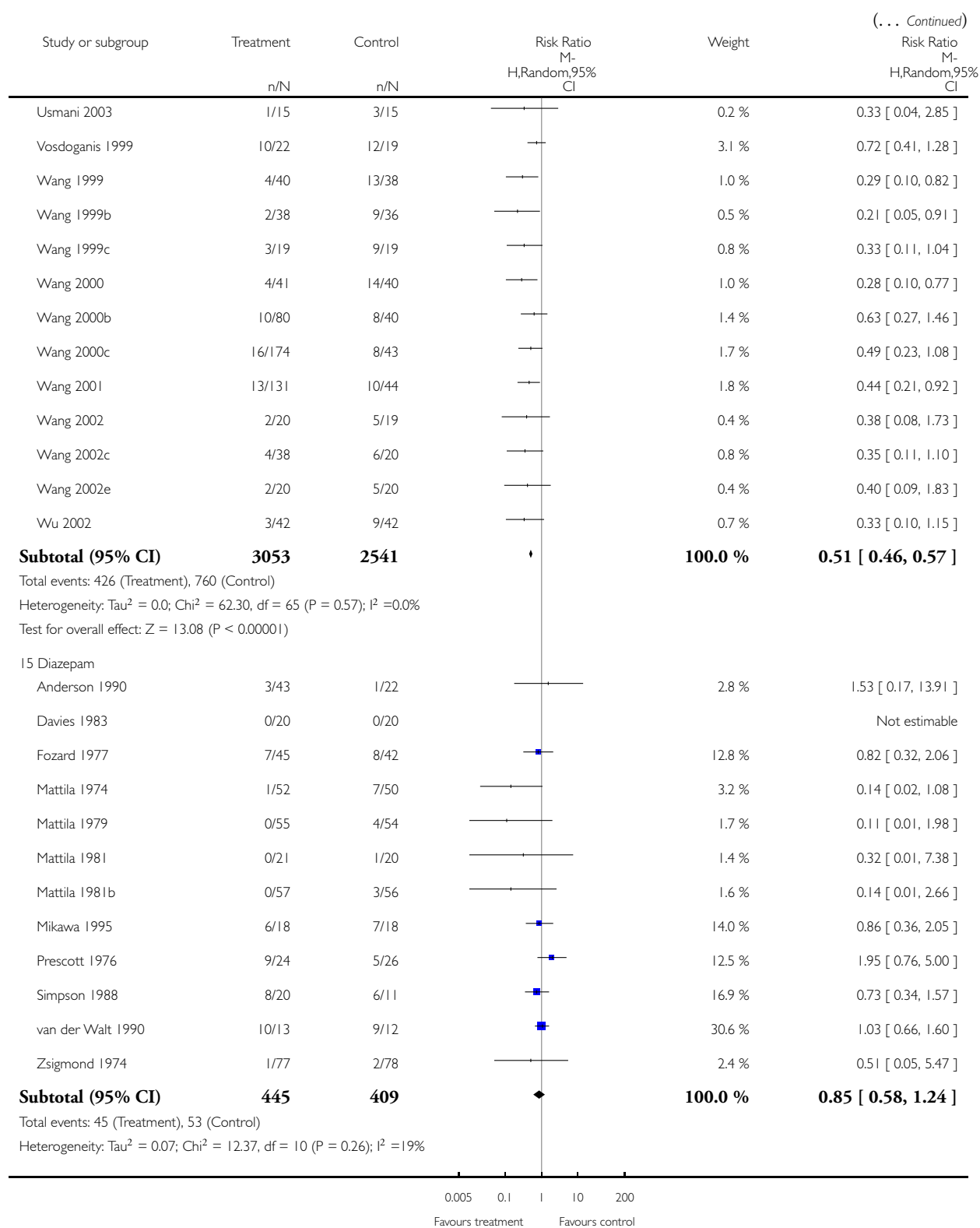


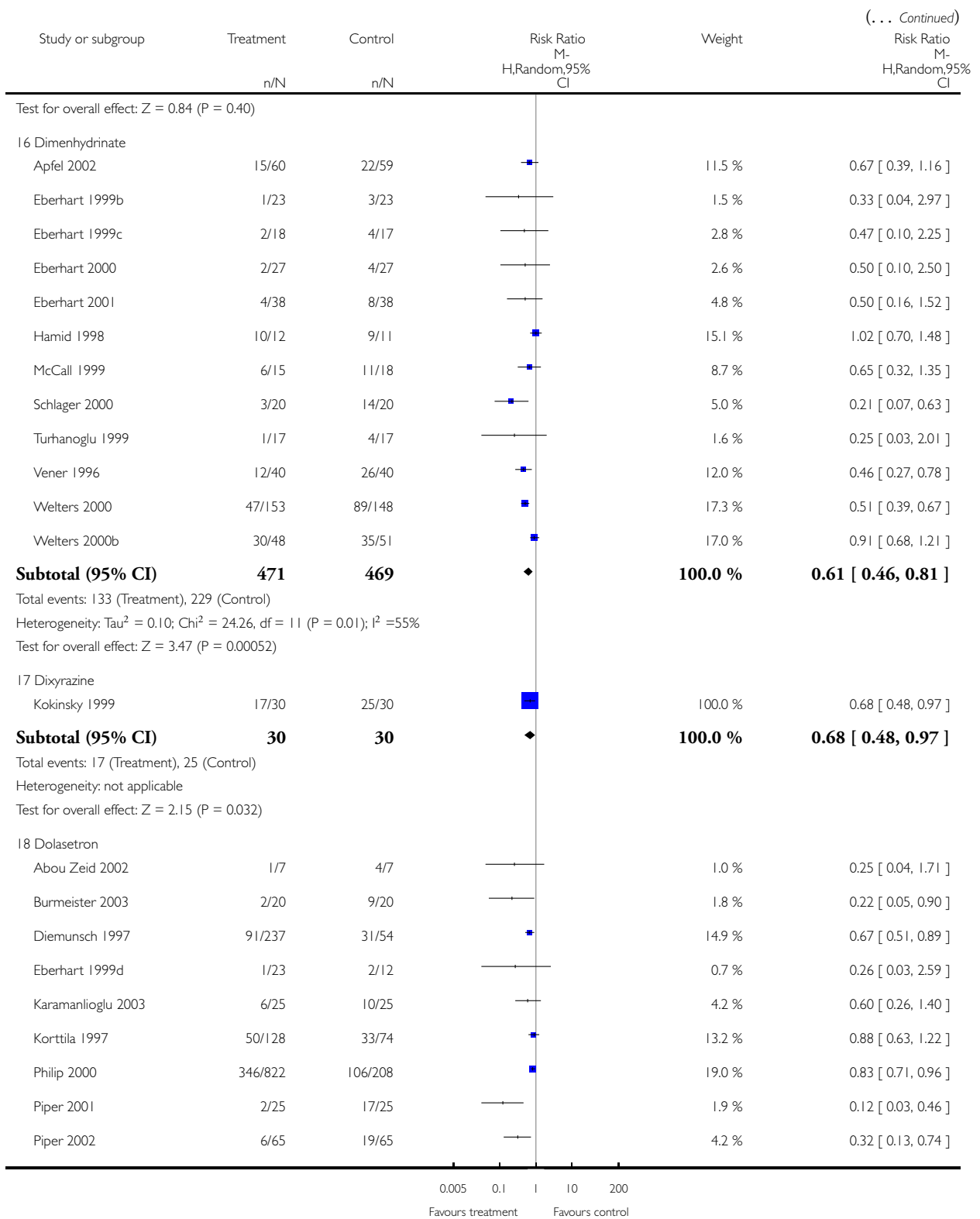




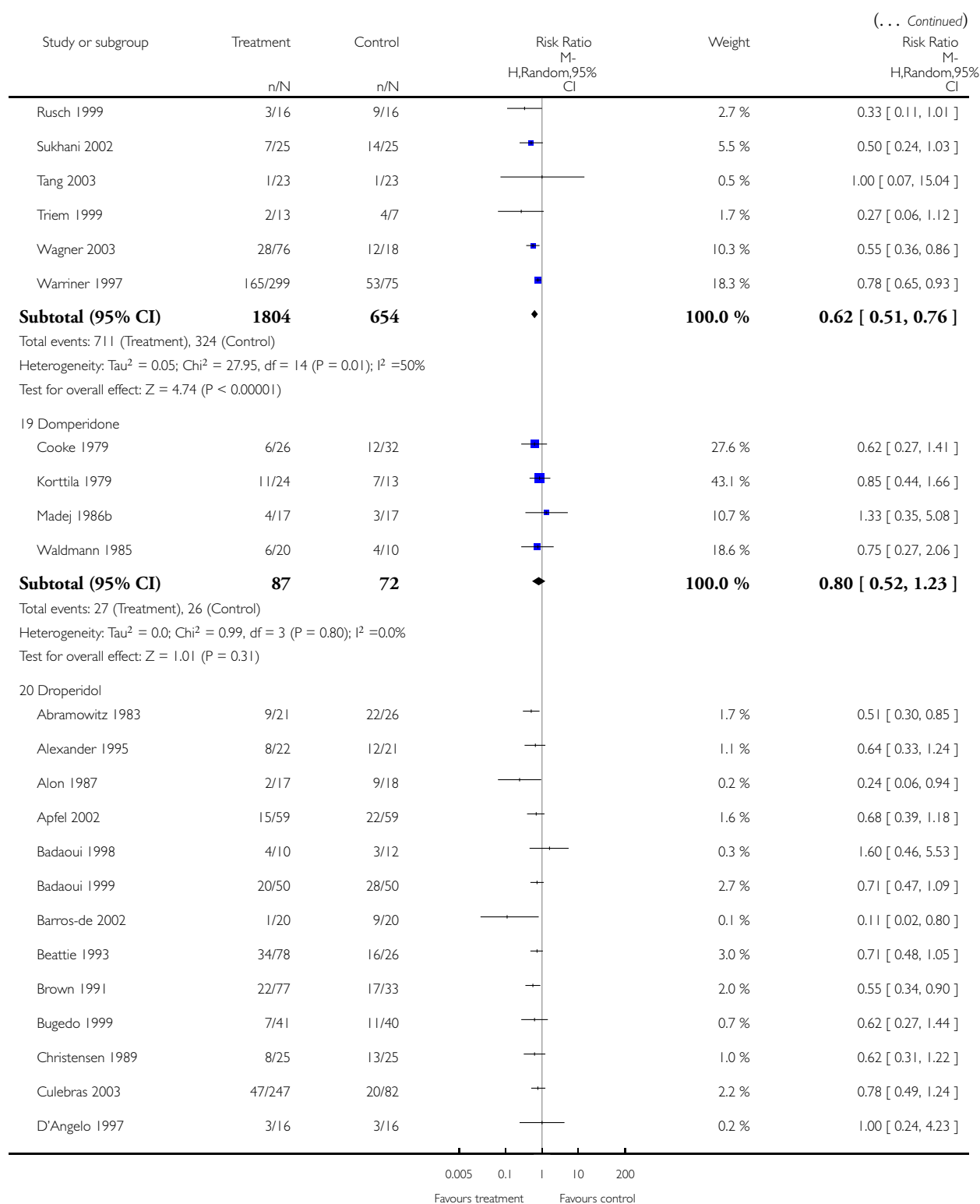


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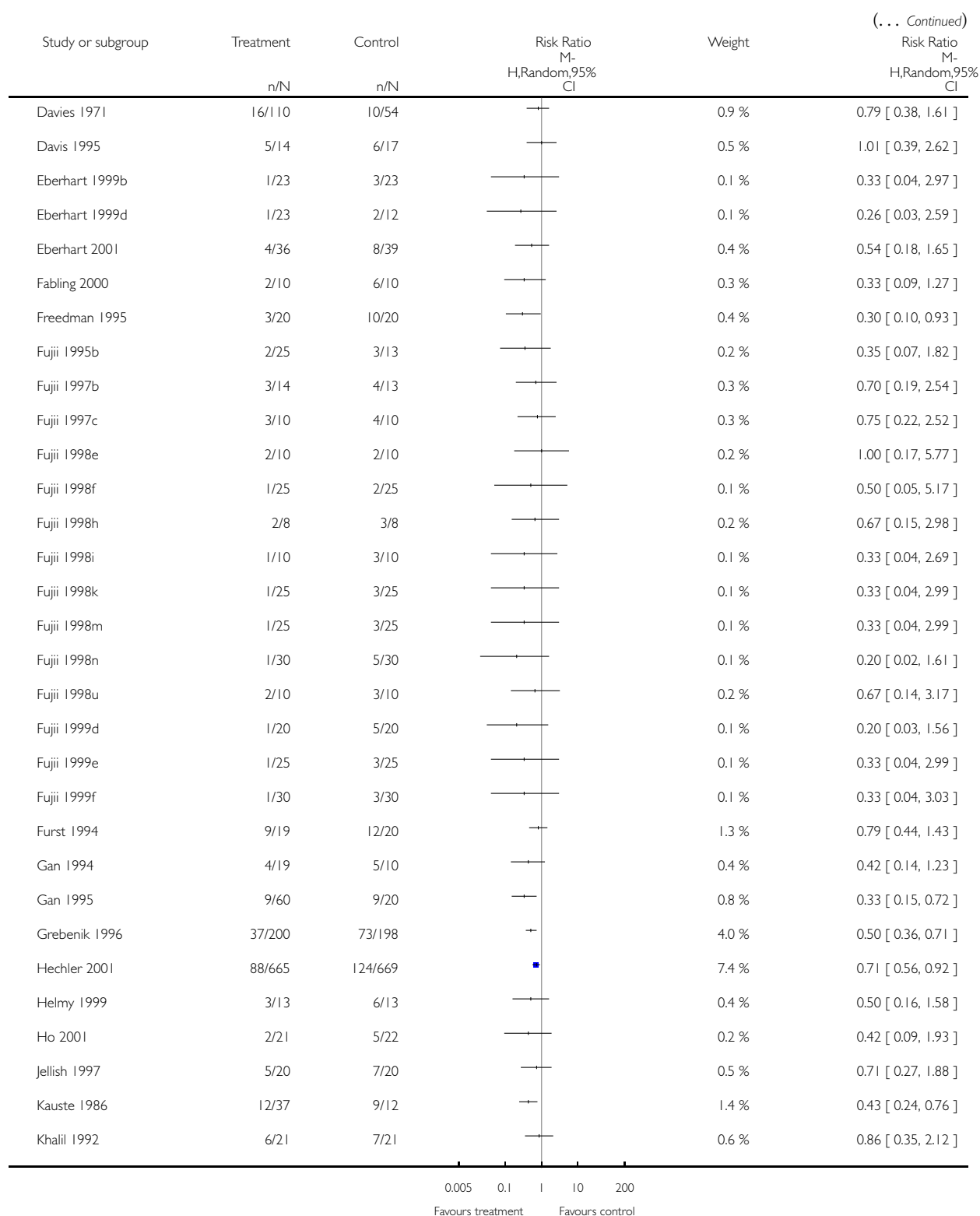


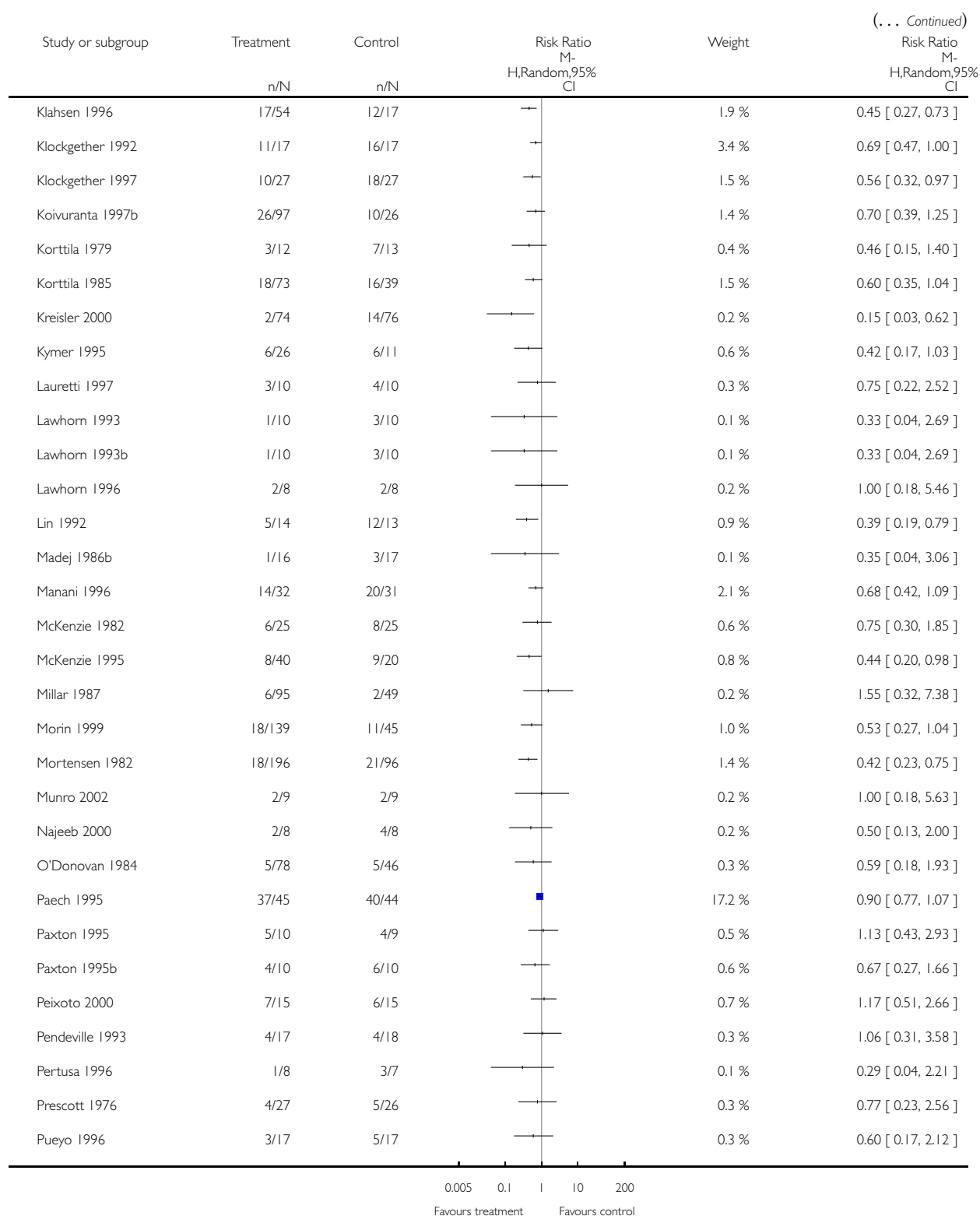


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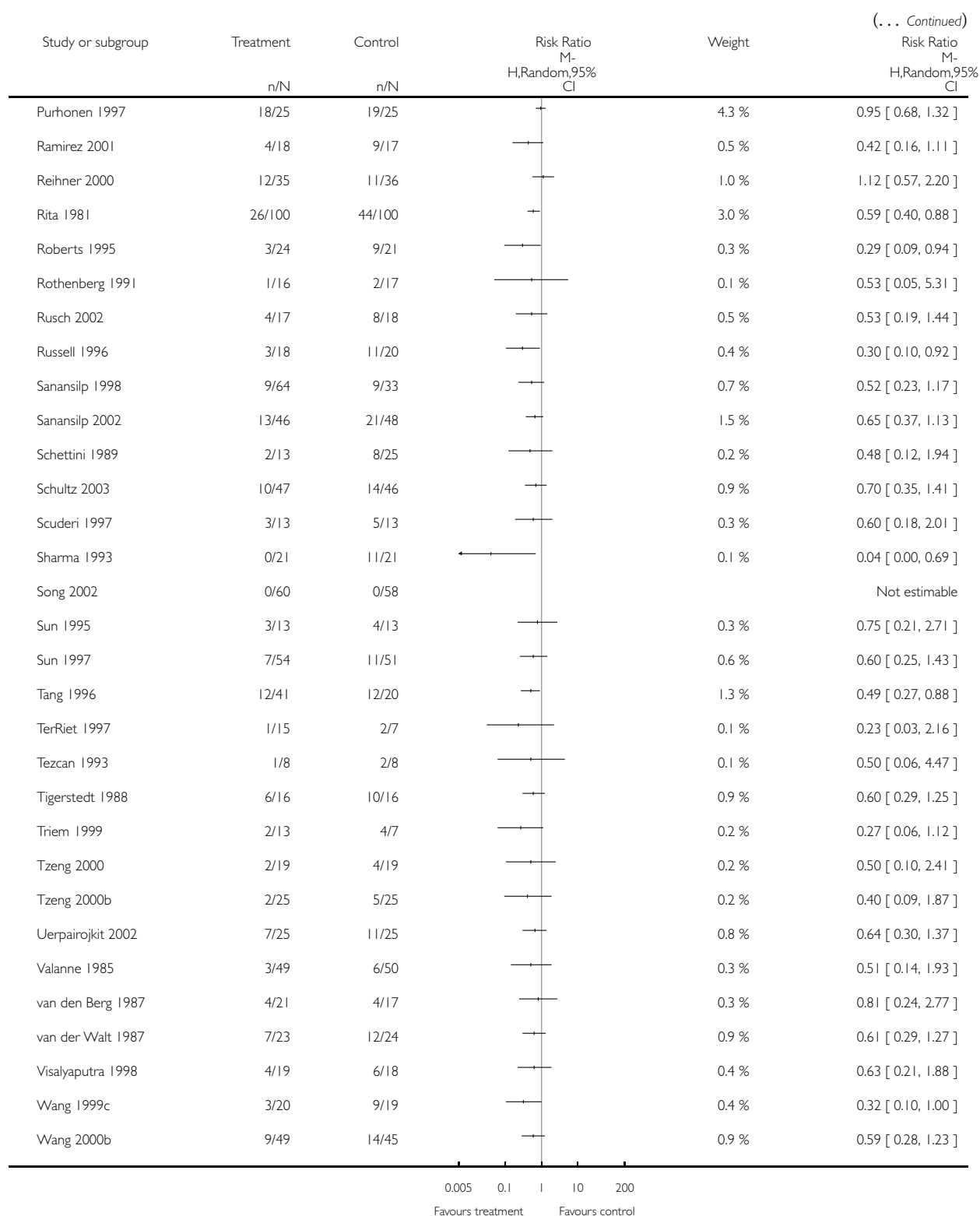


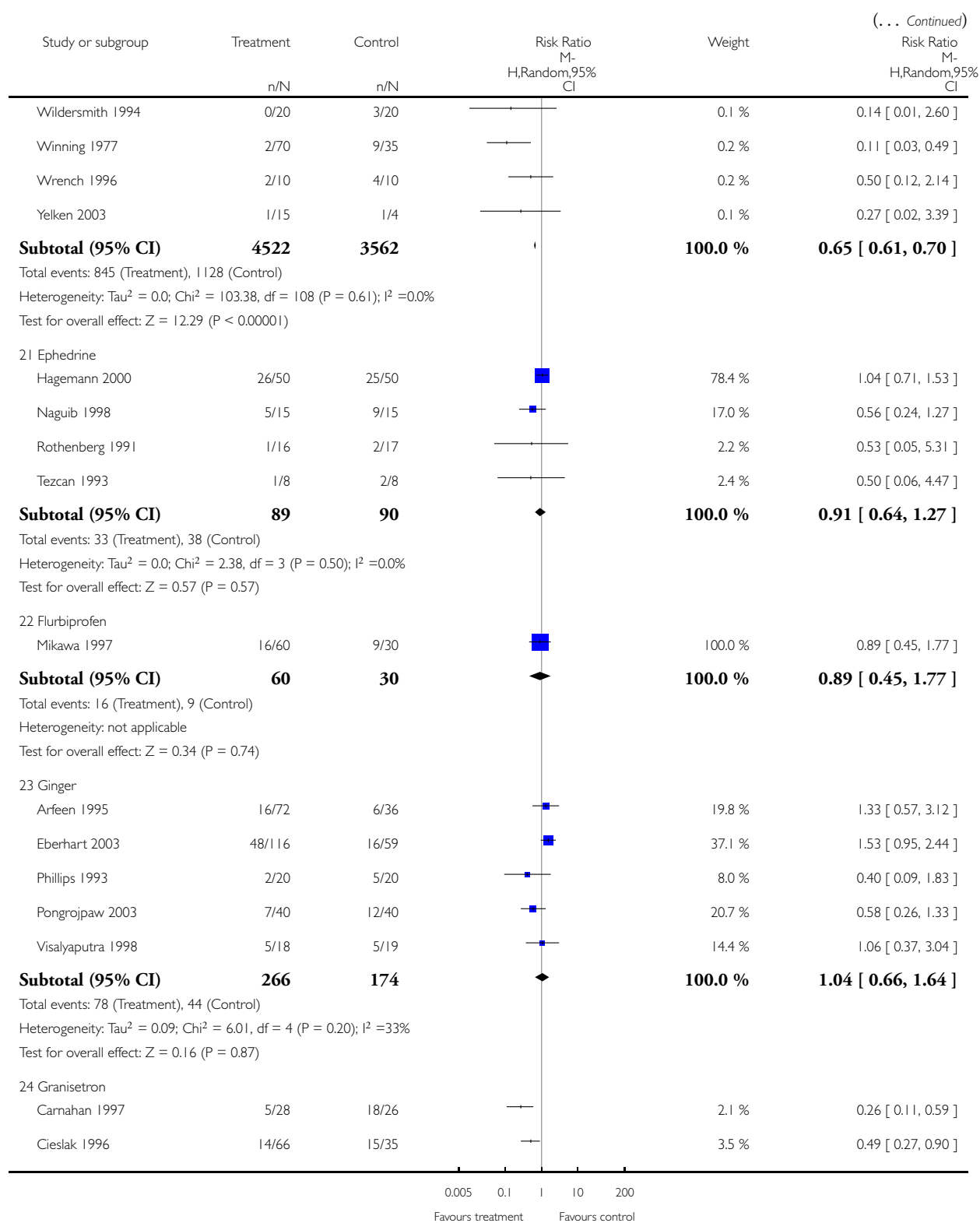
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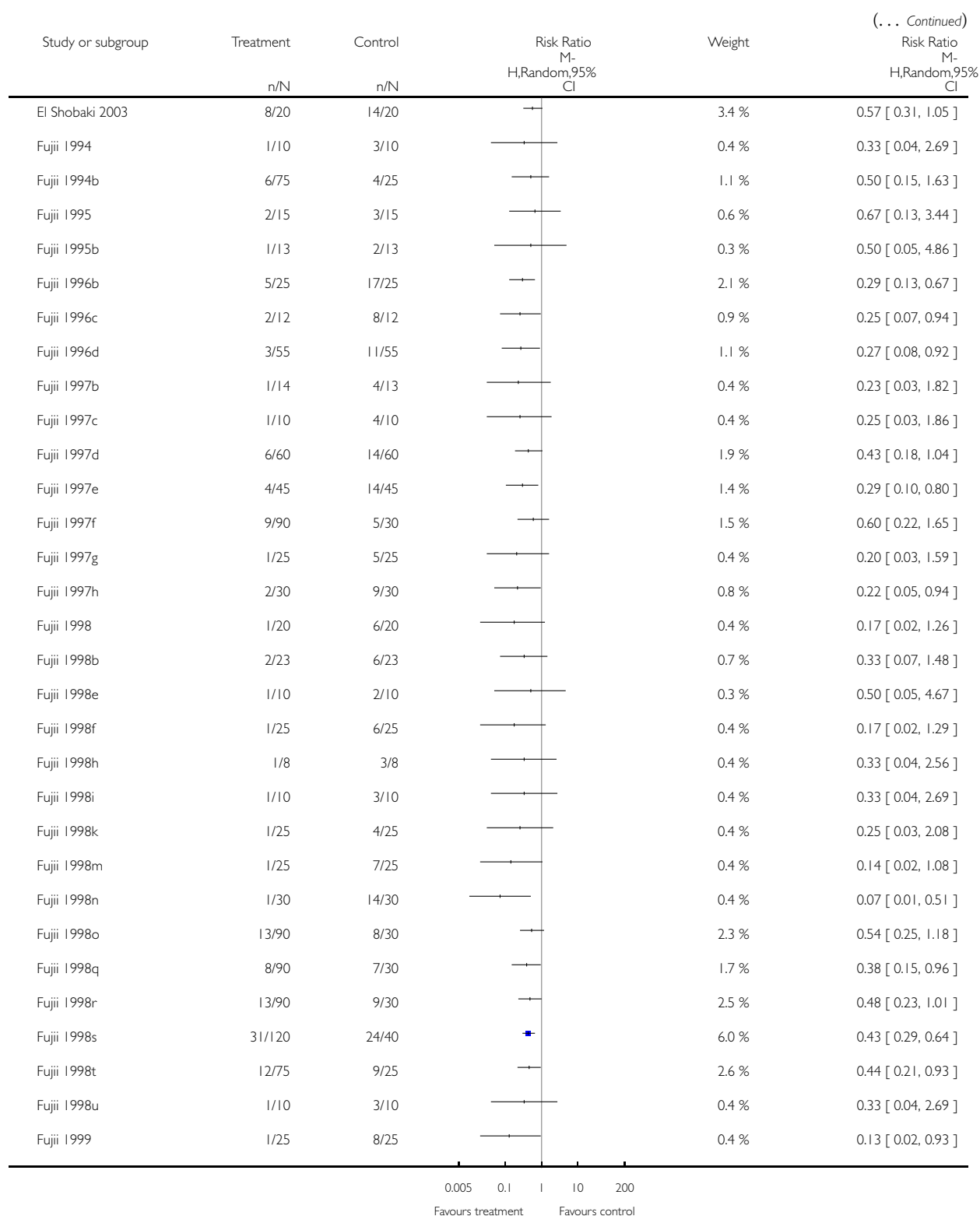




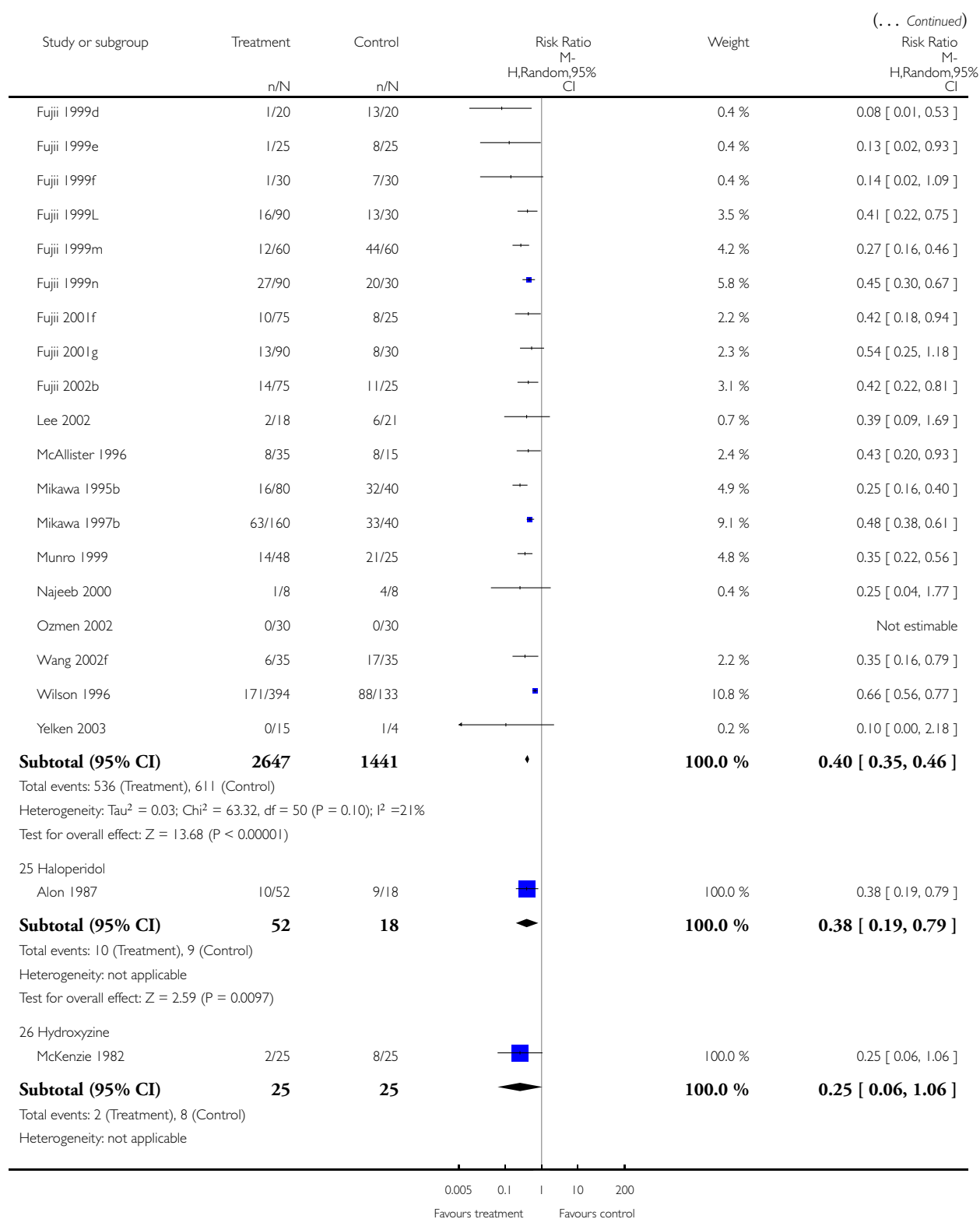


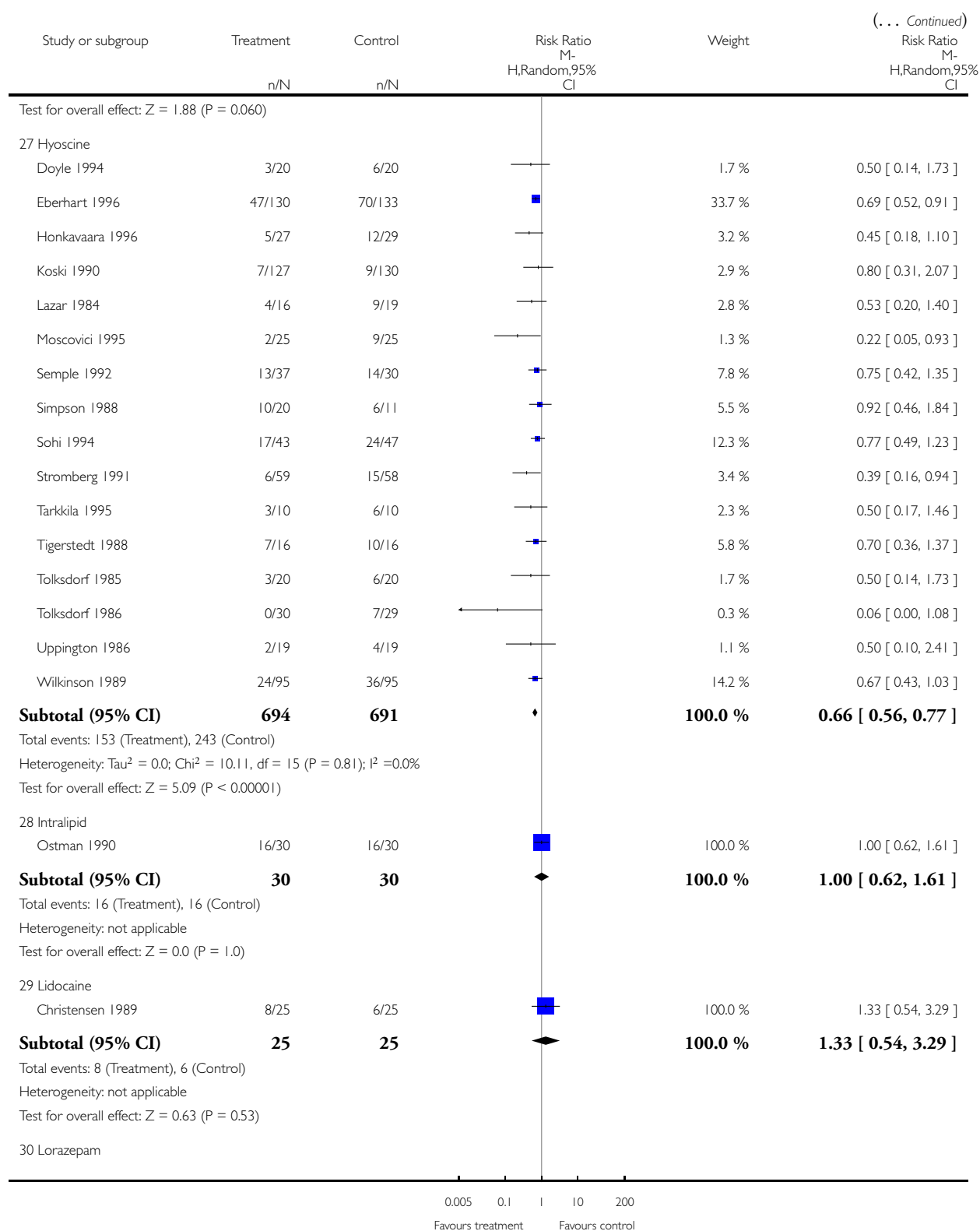




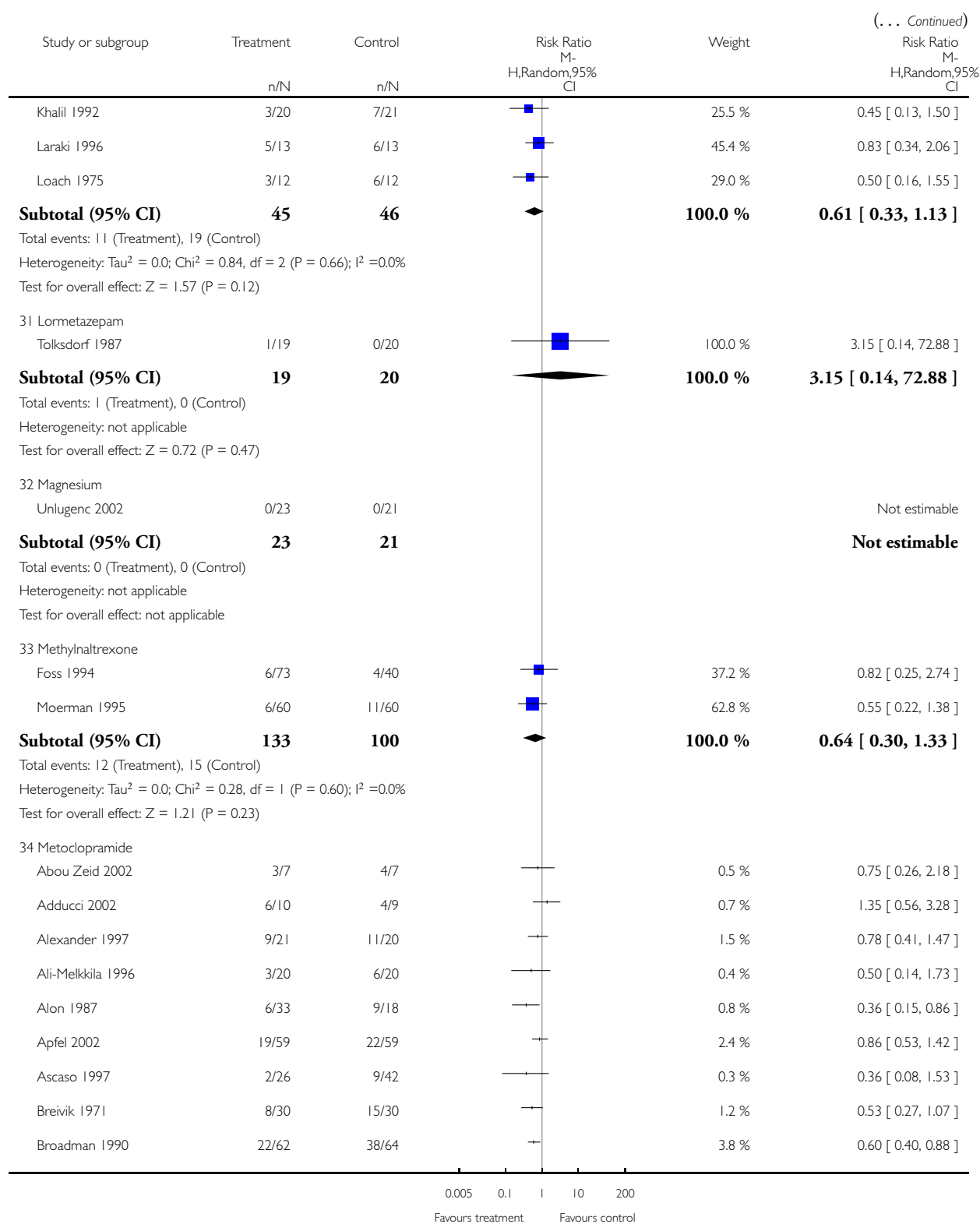


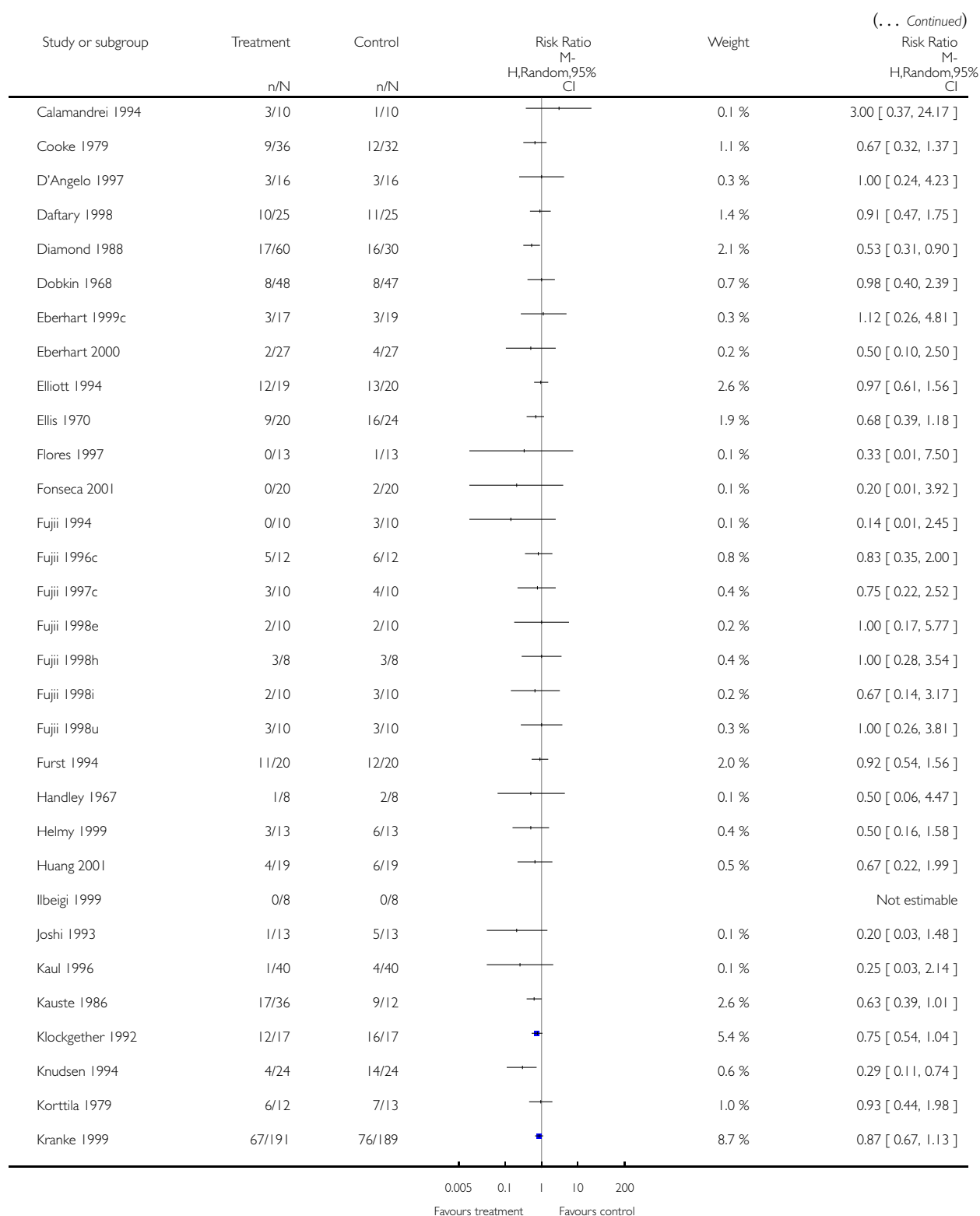
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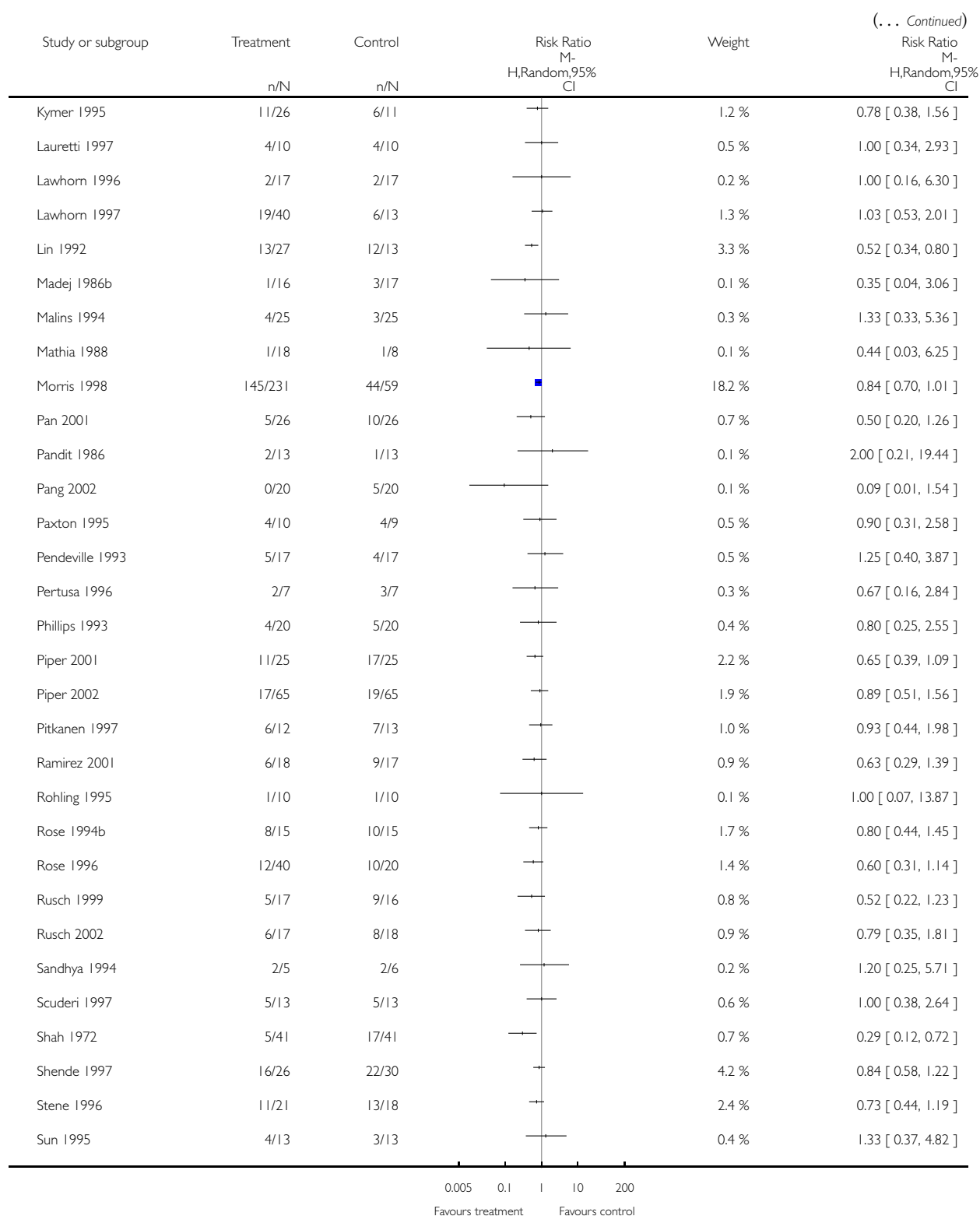


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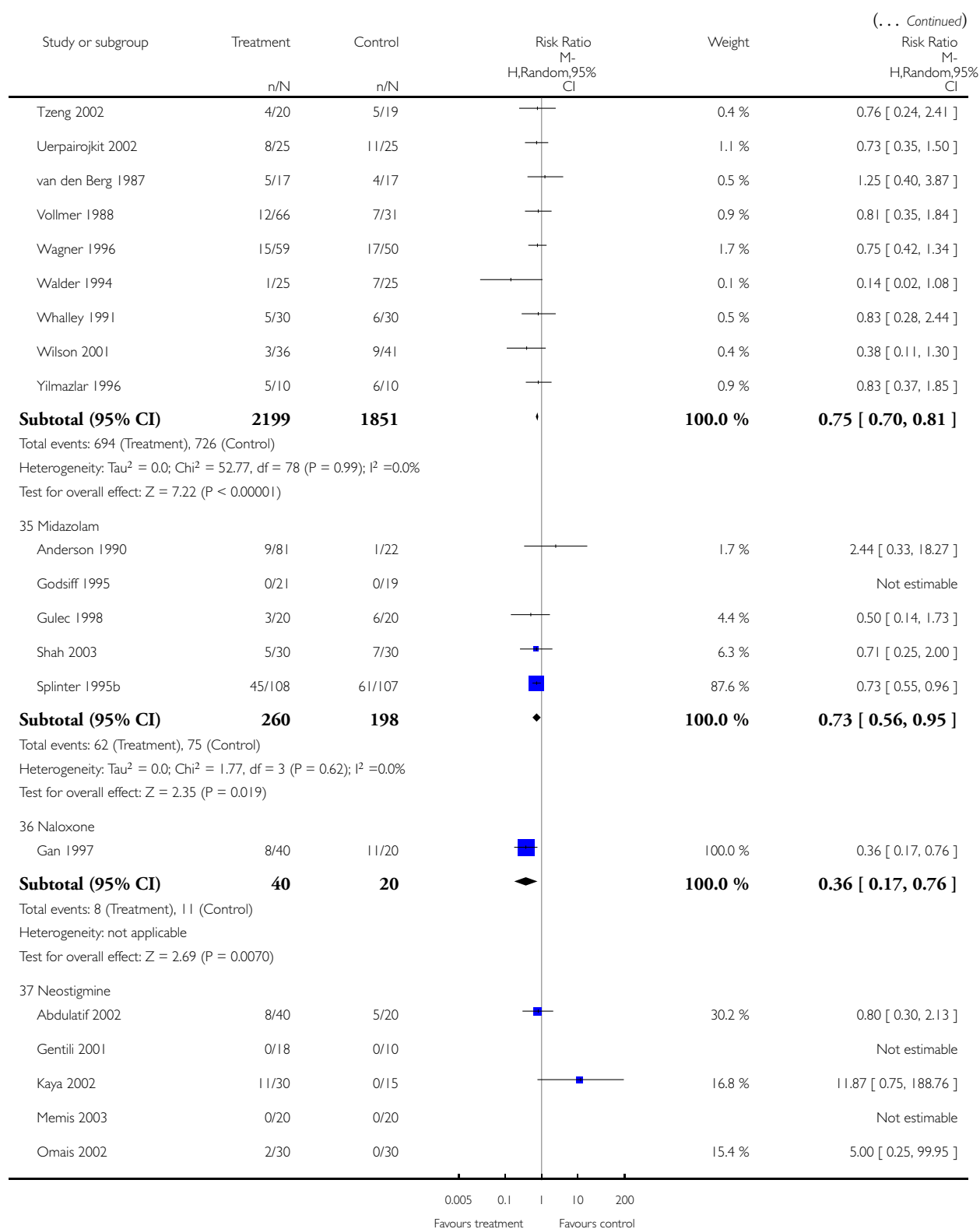




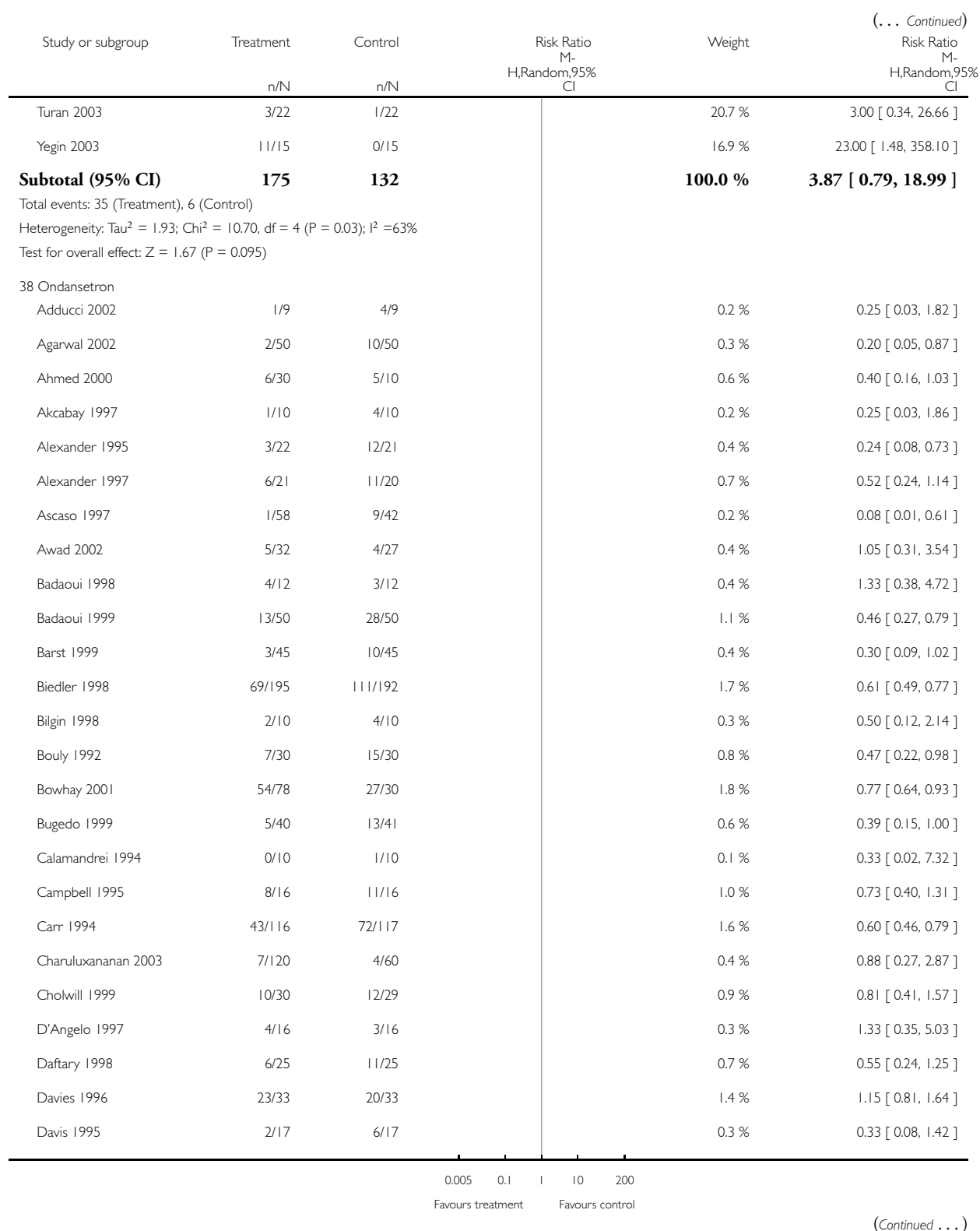
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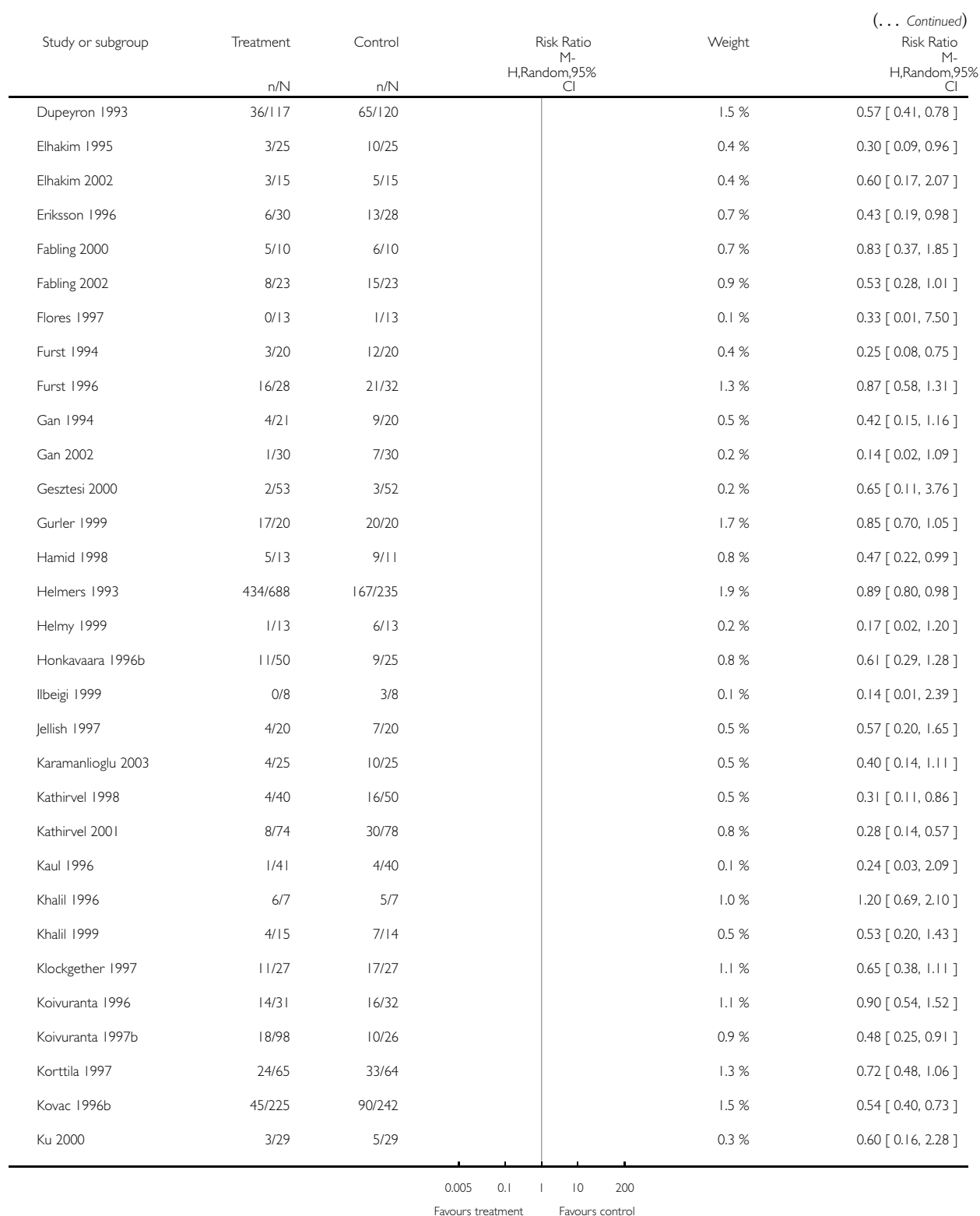




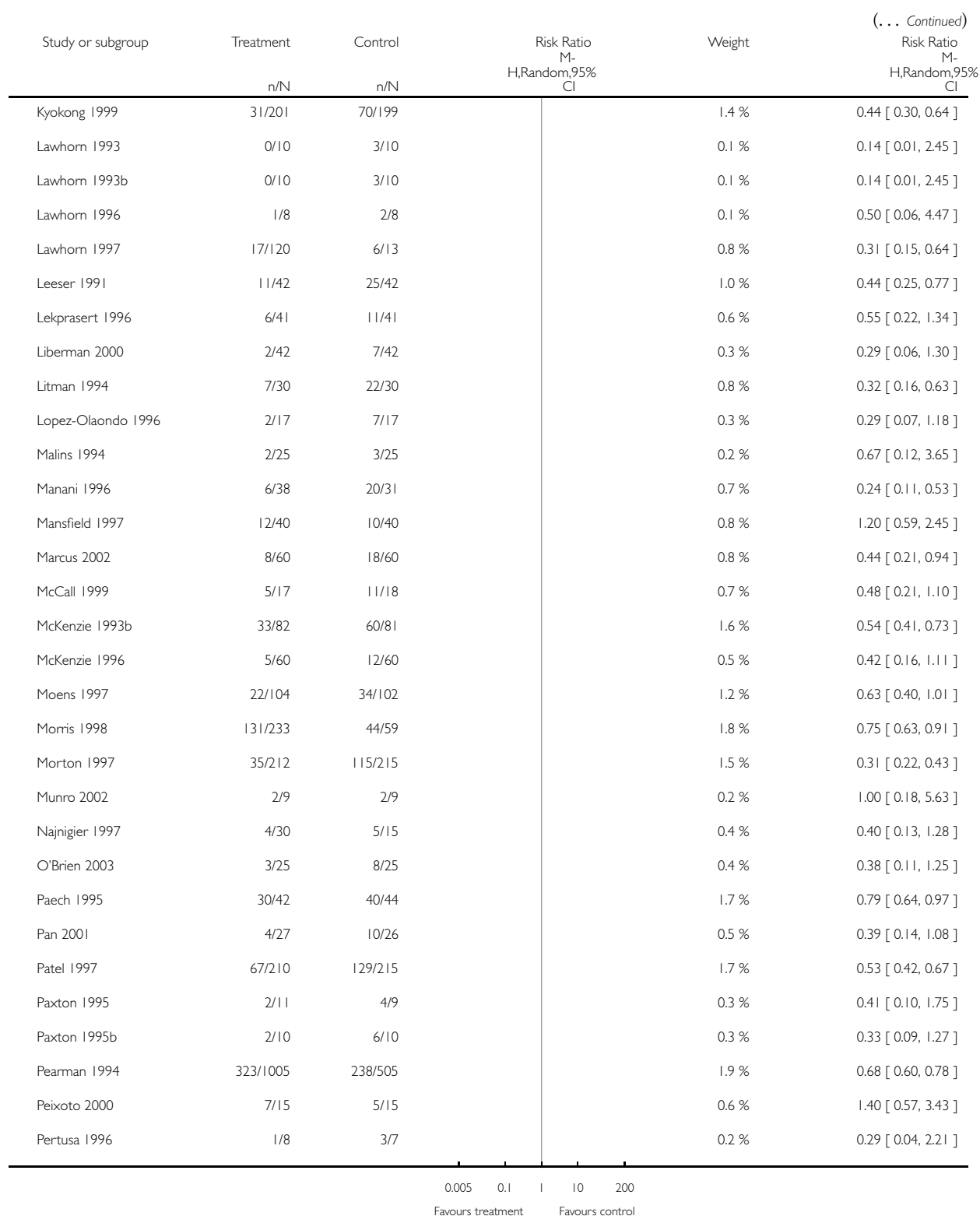


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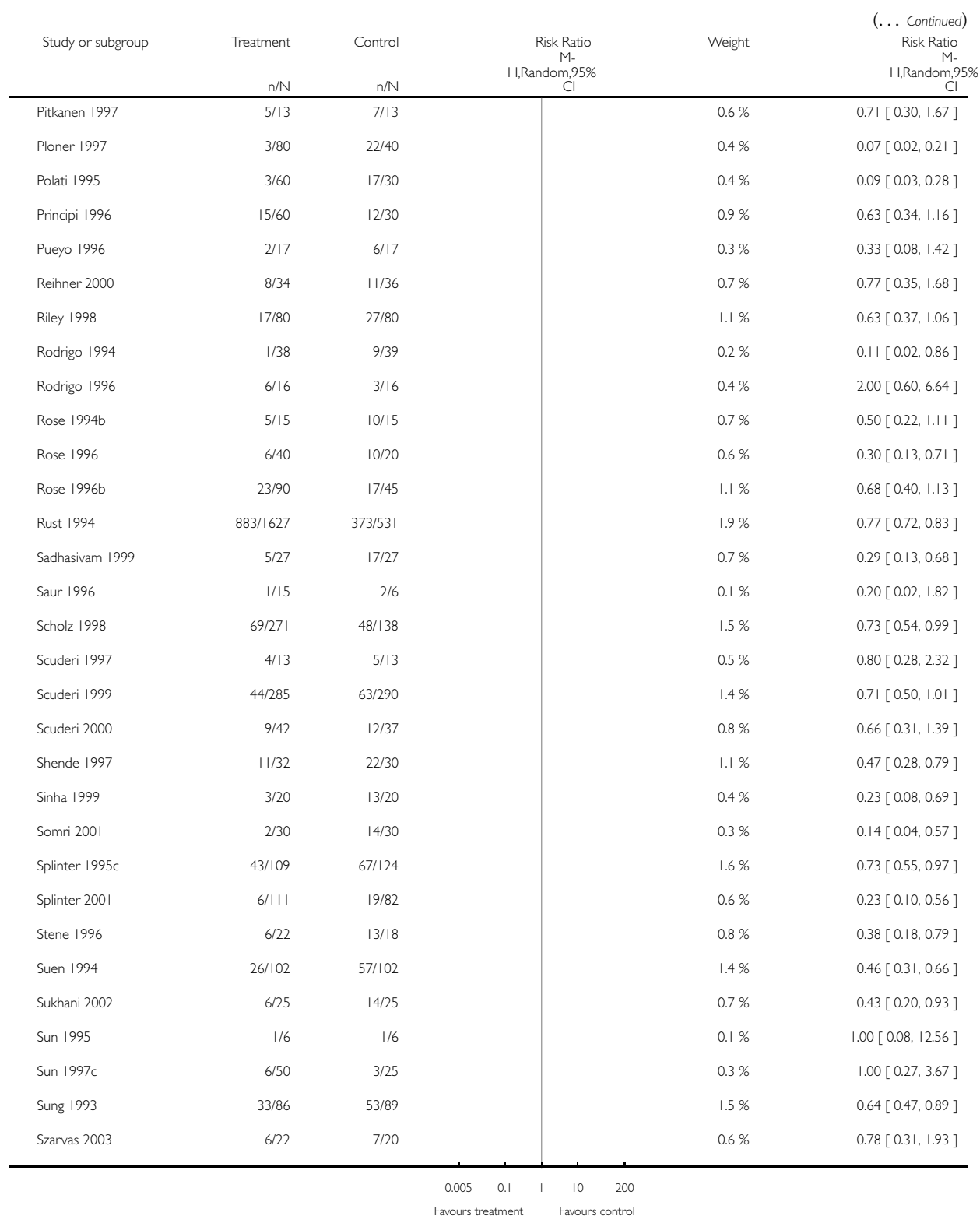




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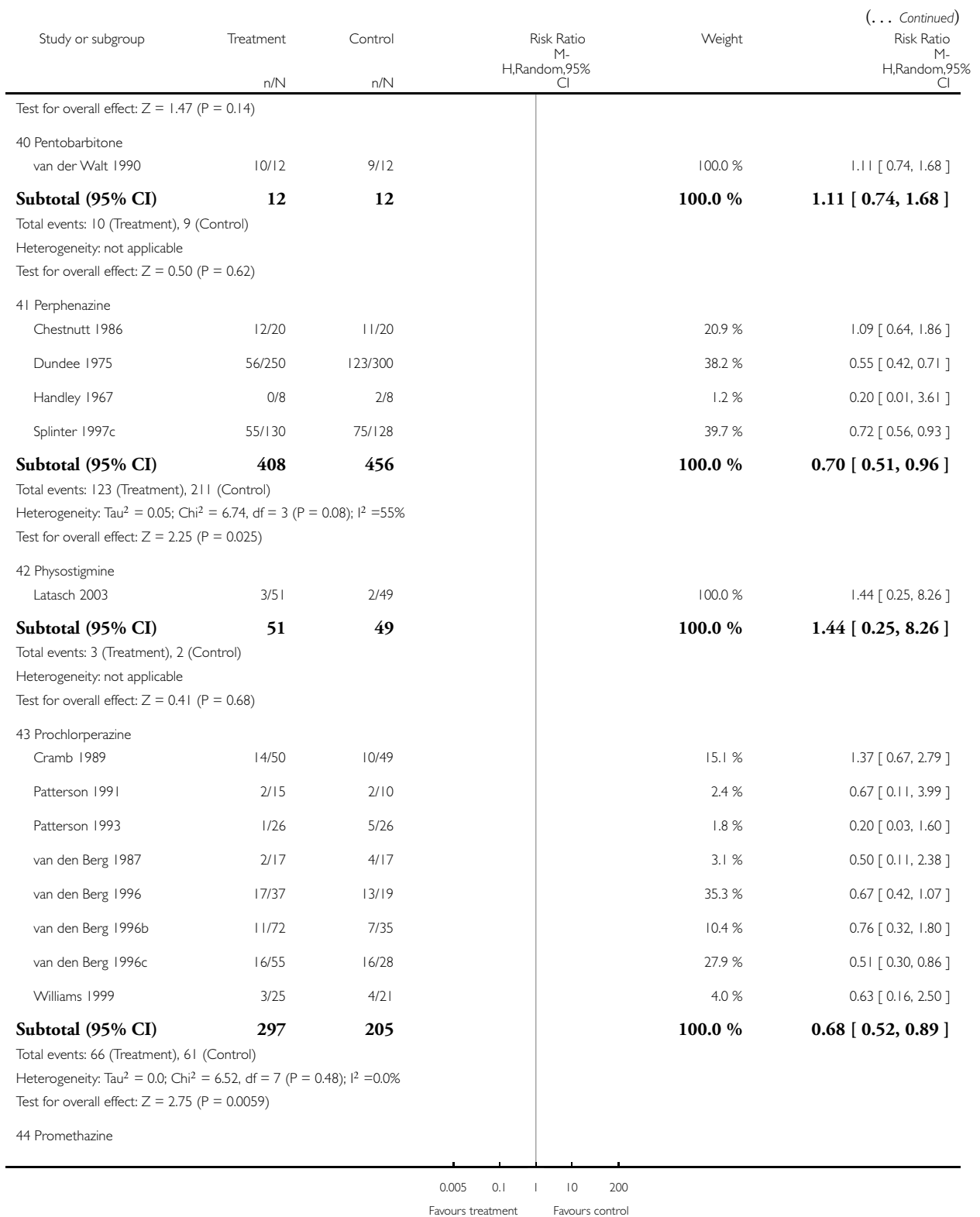


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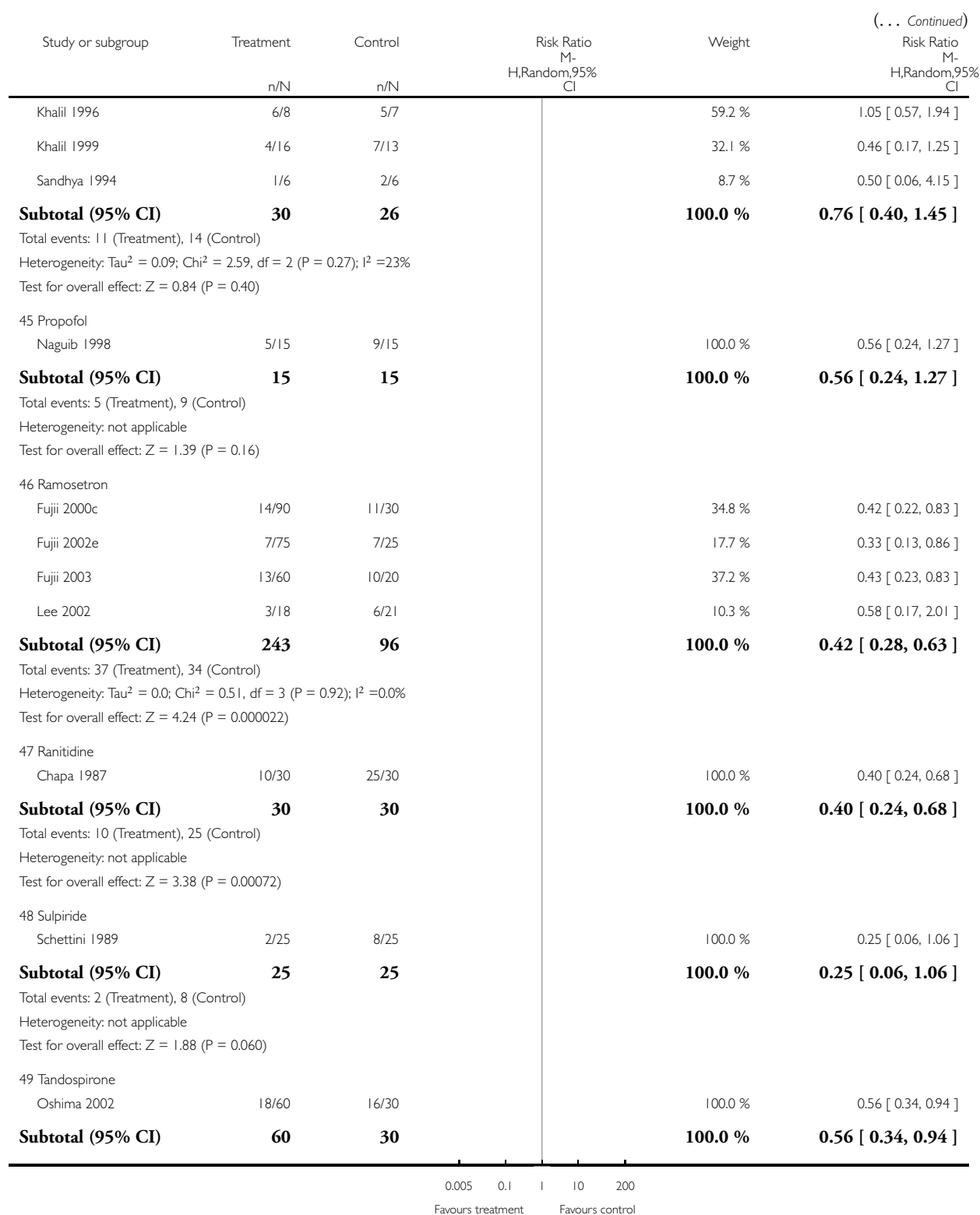


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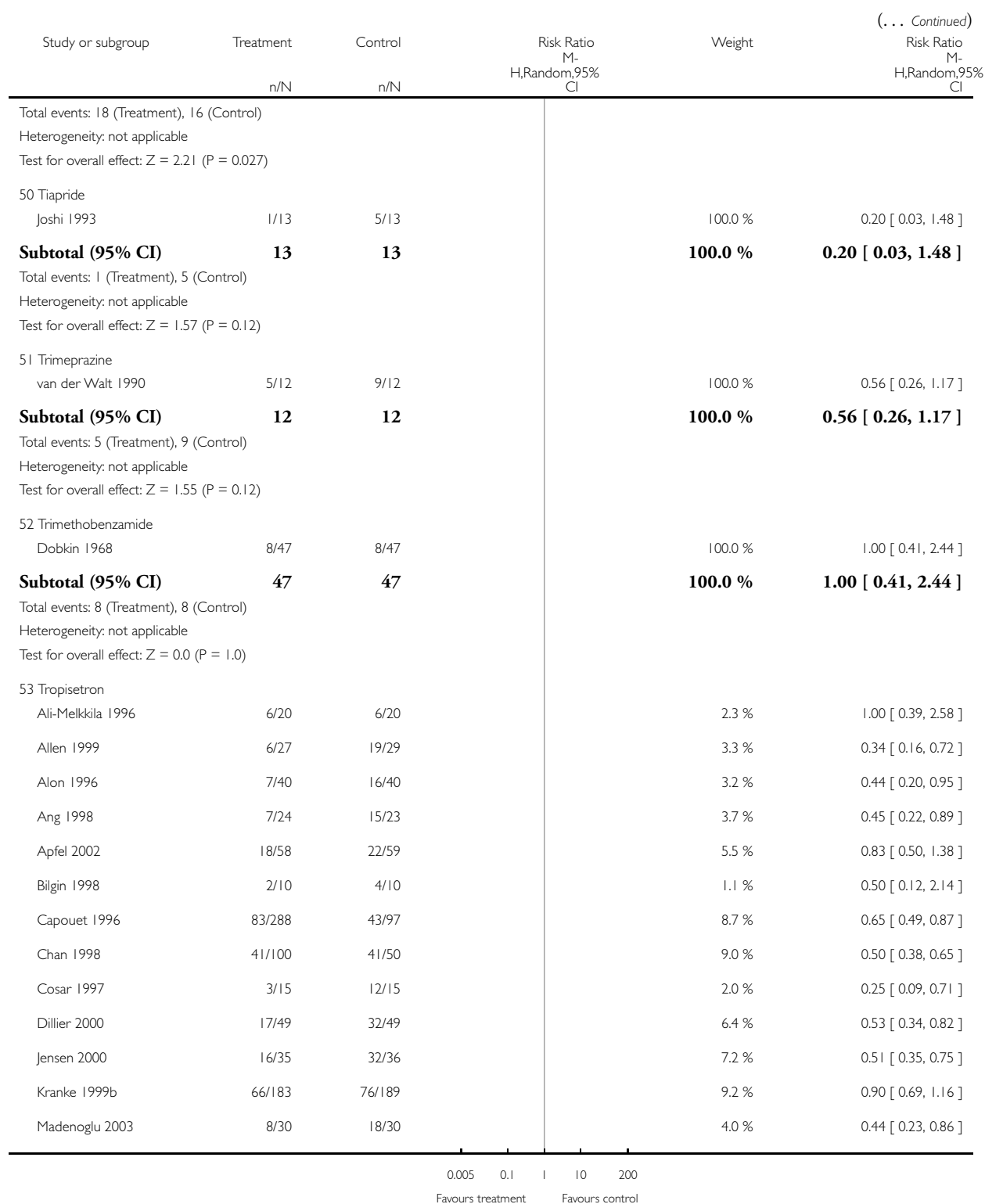




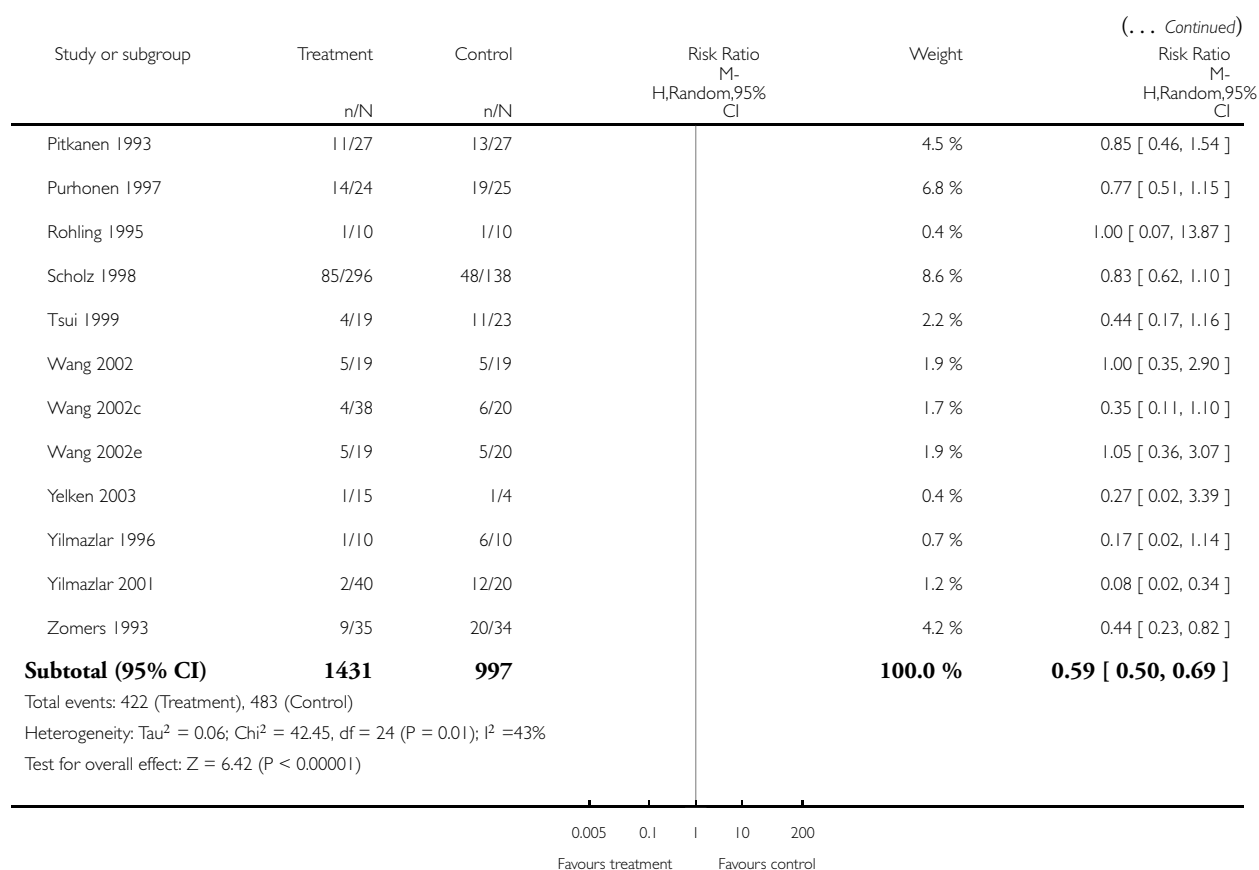
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(Continued ...)

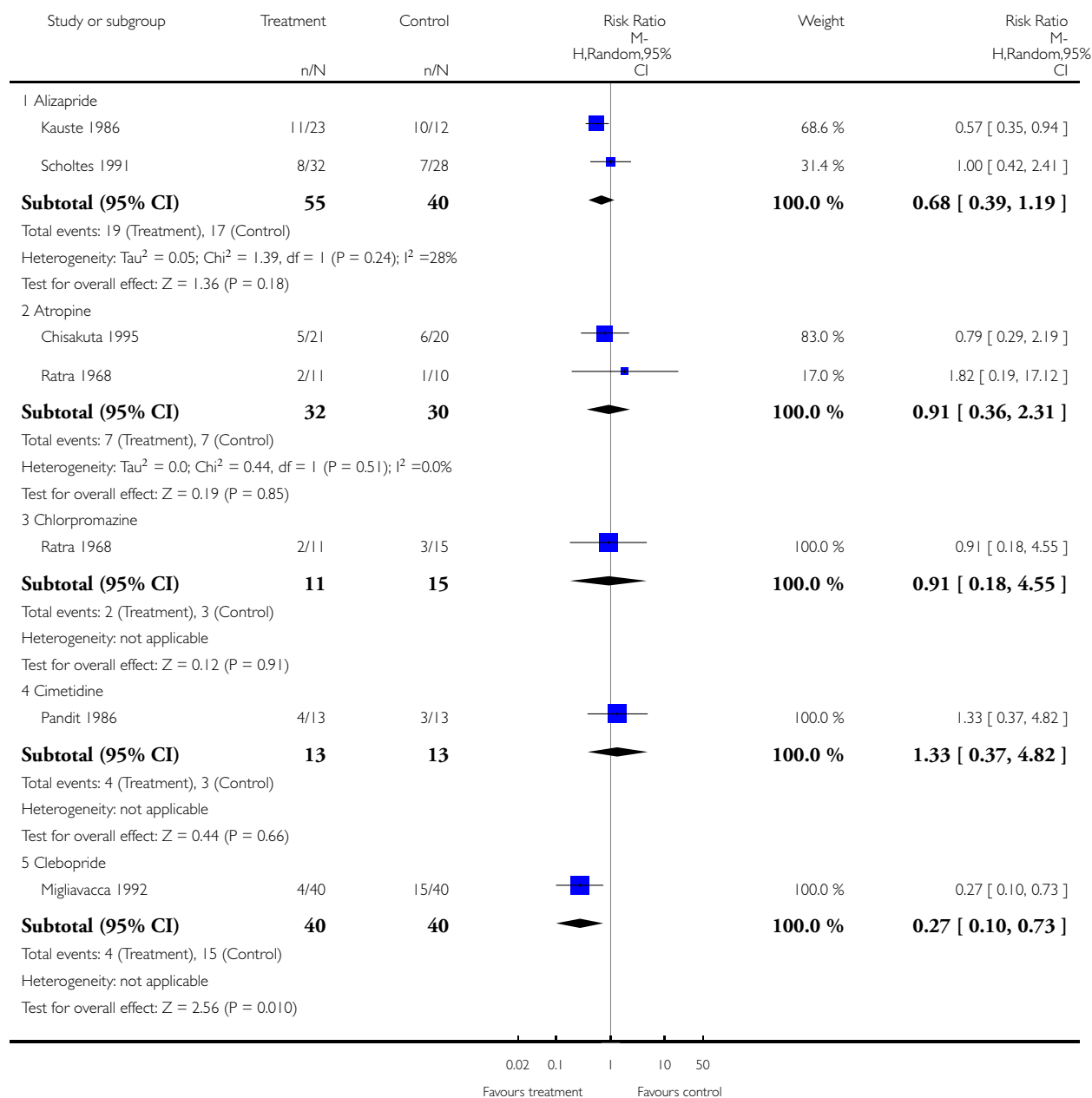


### Analysis 1.3. Comparison 1 PRIMARY ANALYSIS: Placebo versus Drug, Outcome 3 Nausea or Vomiting.

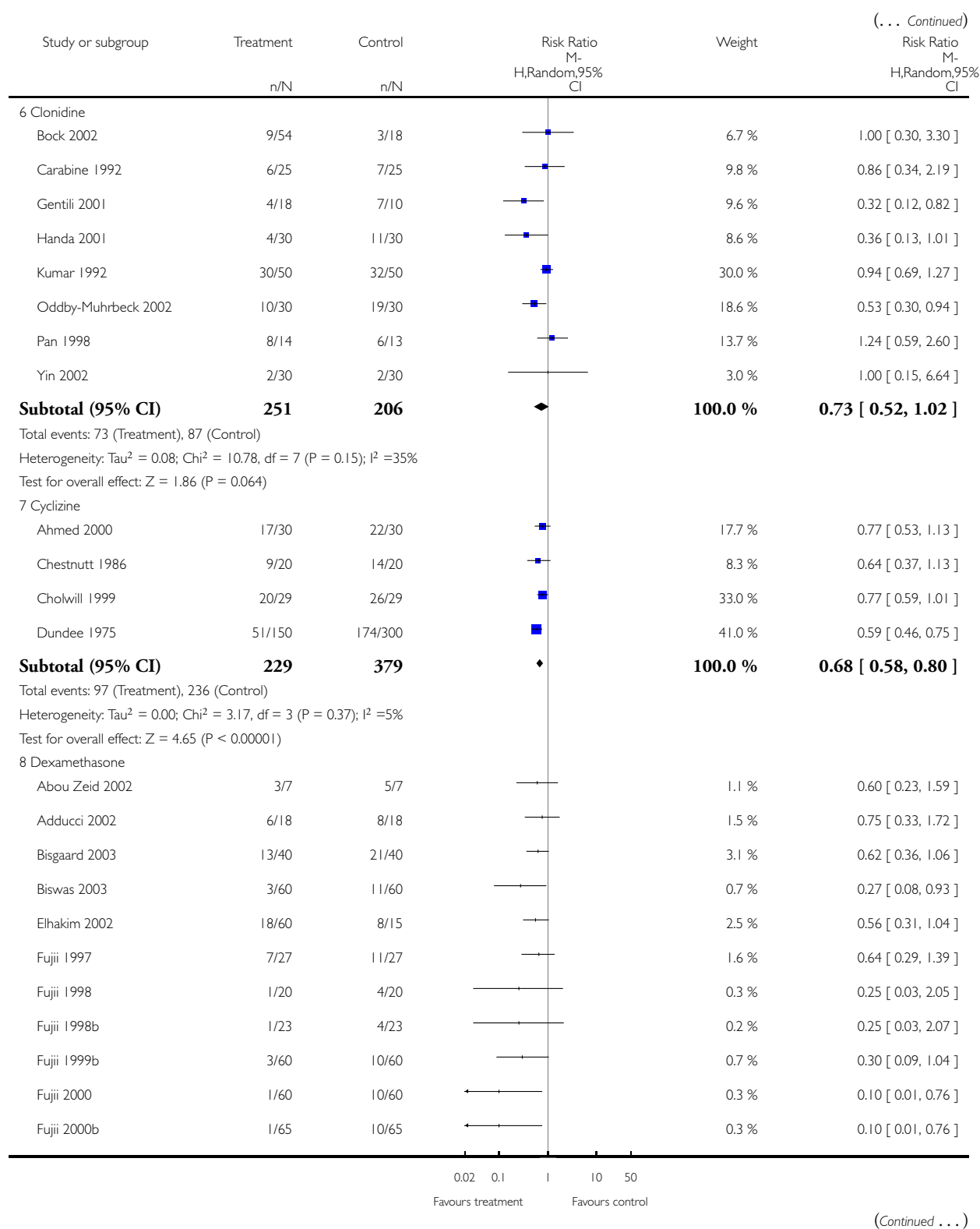
Review: Drugs for preventing postoperative nausea and vomiting

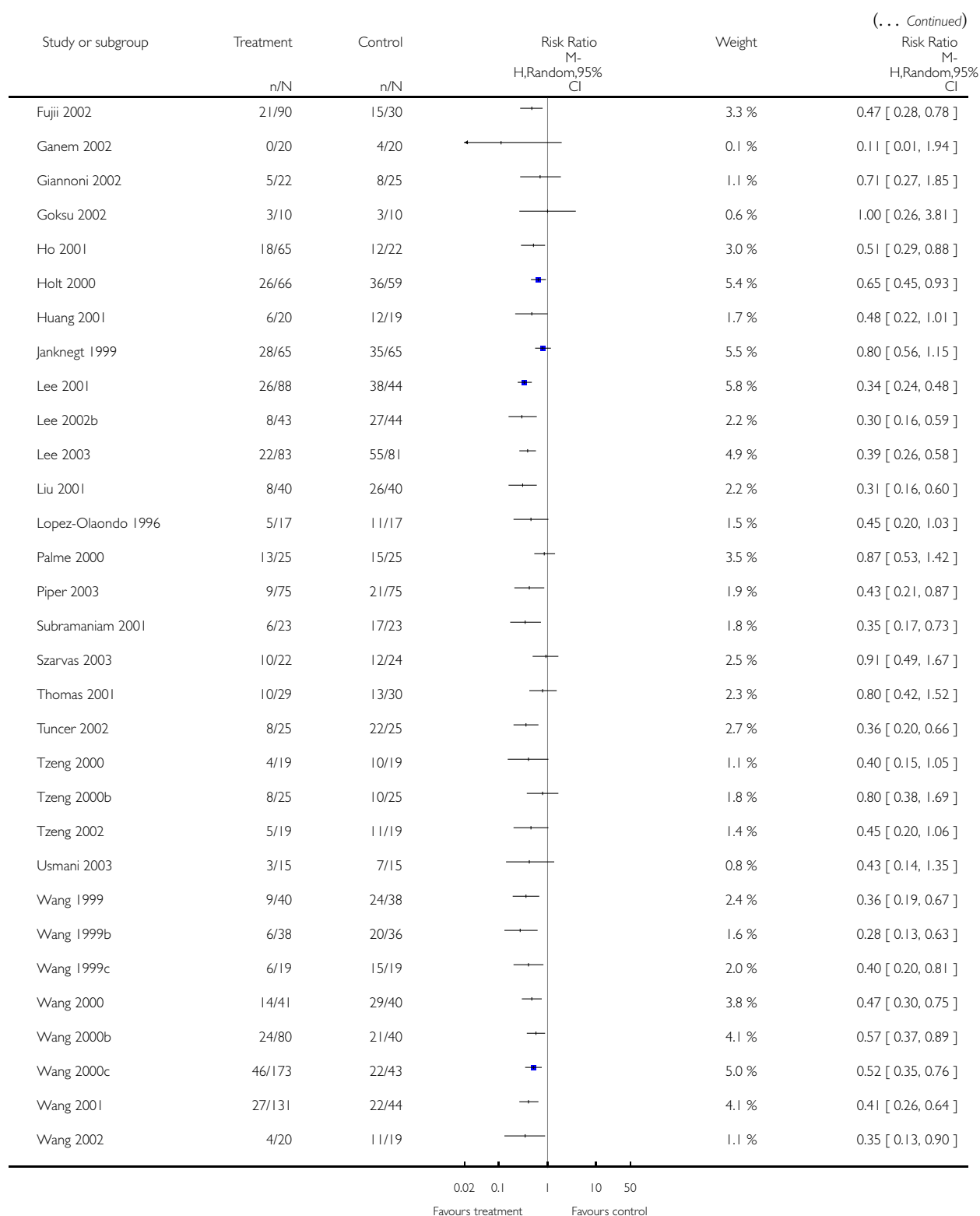
Comparison: 1 PRIMARY ANALYSIS: Placebo versus Drug

Outcome: 3 Nausea or Vomiting

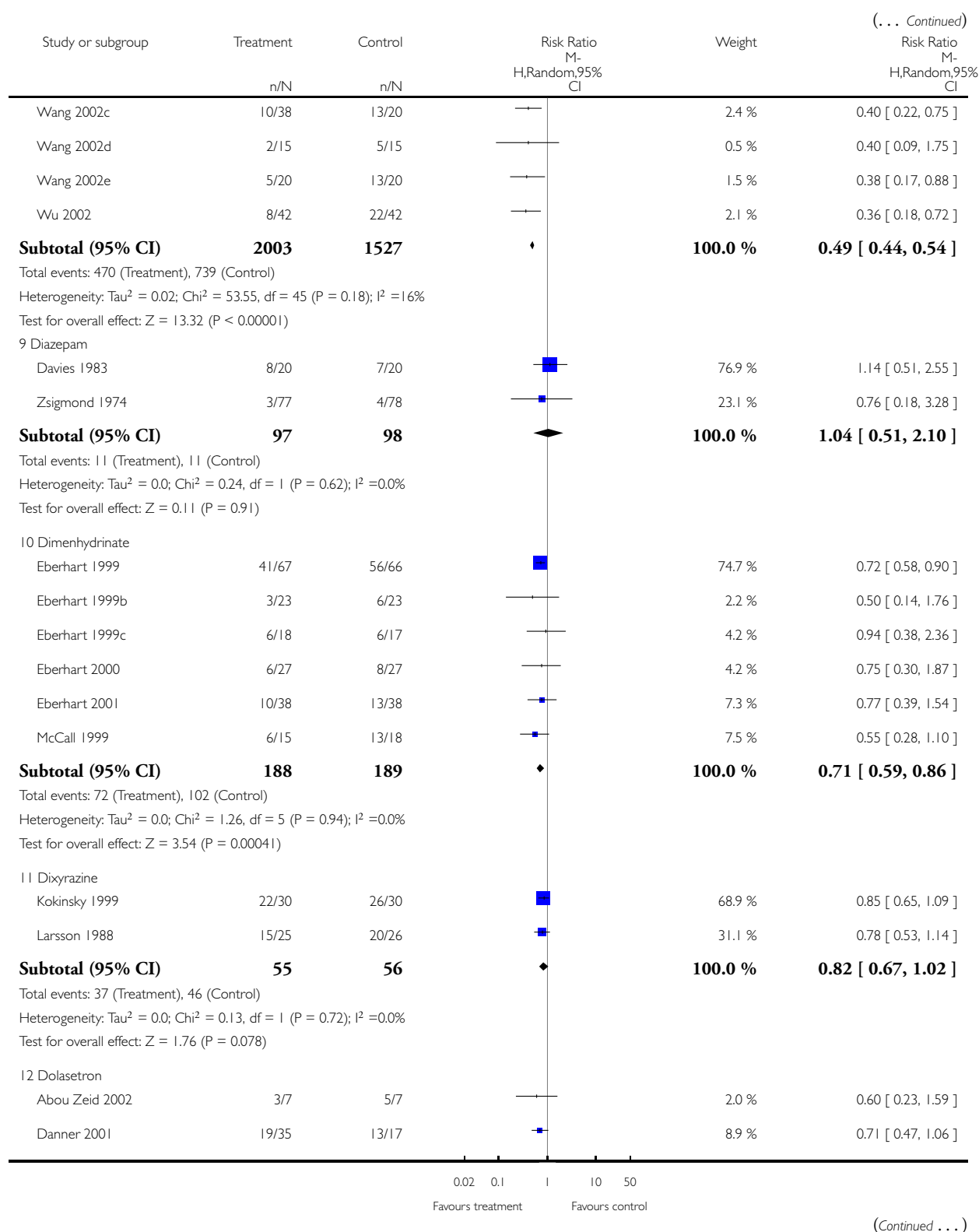


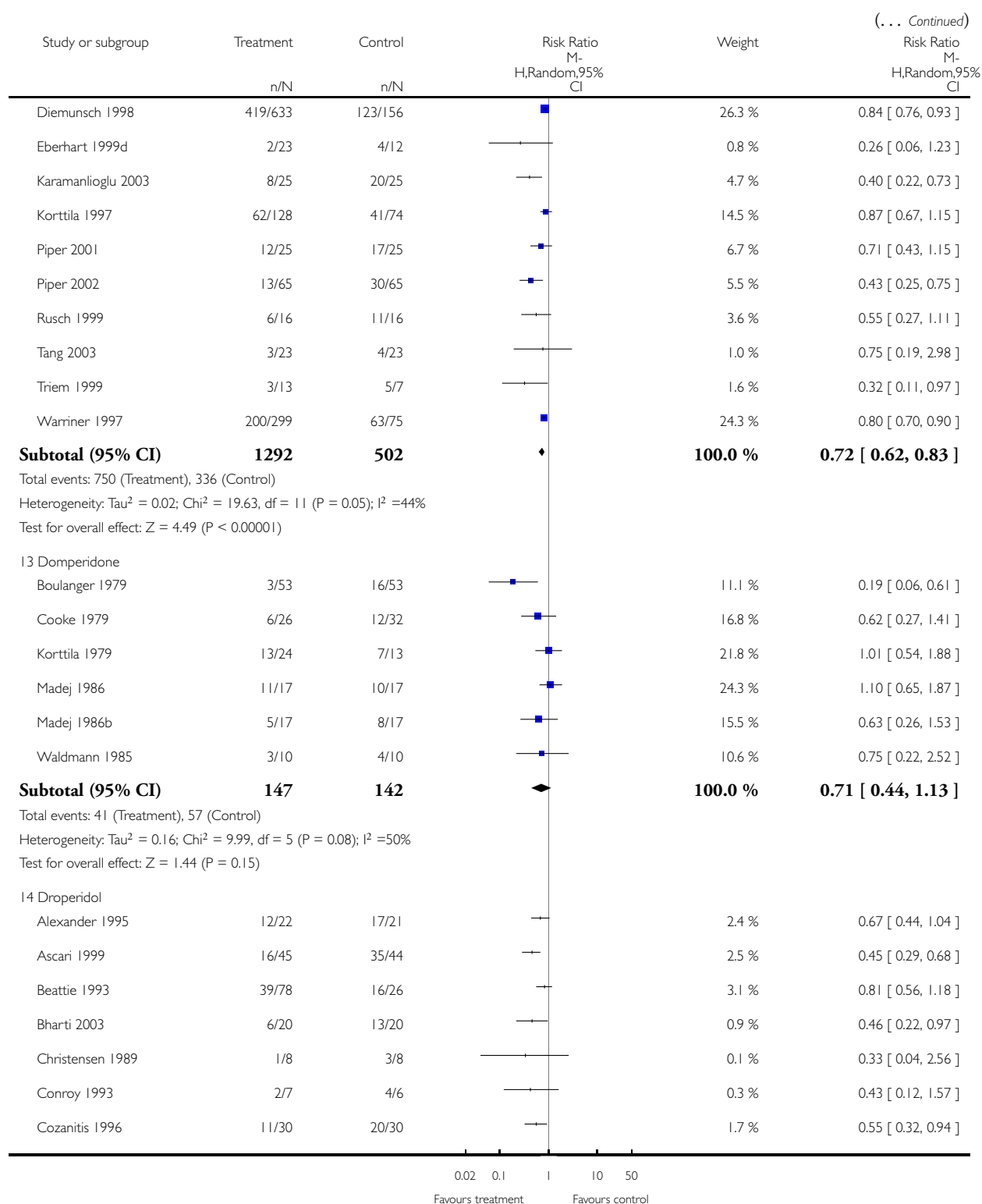
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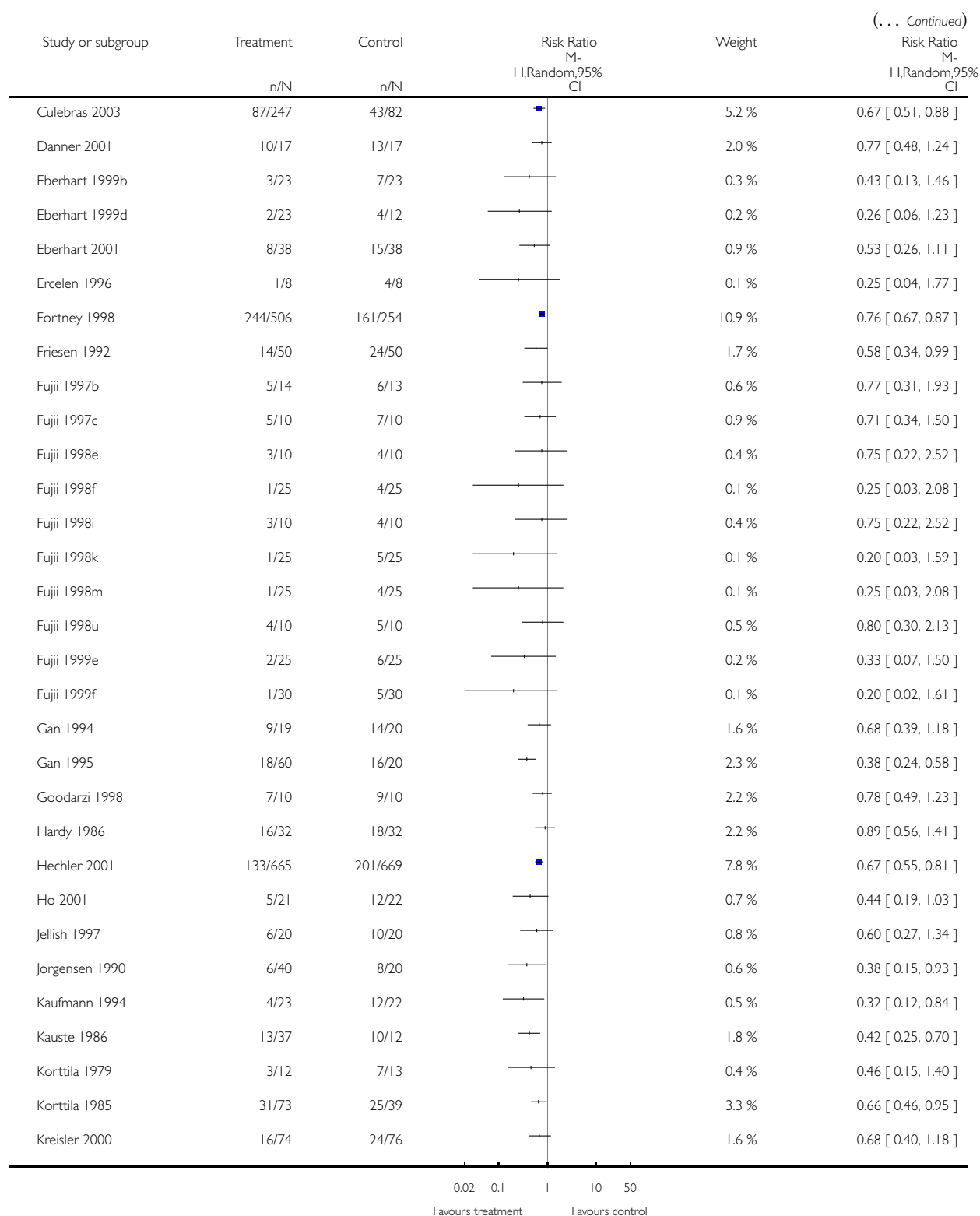


(Continued . . .)

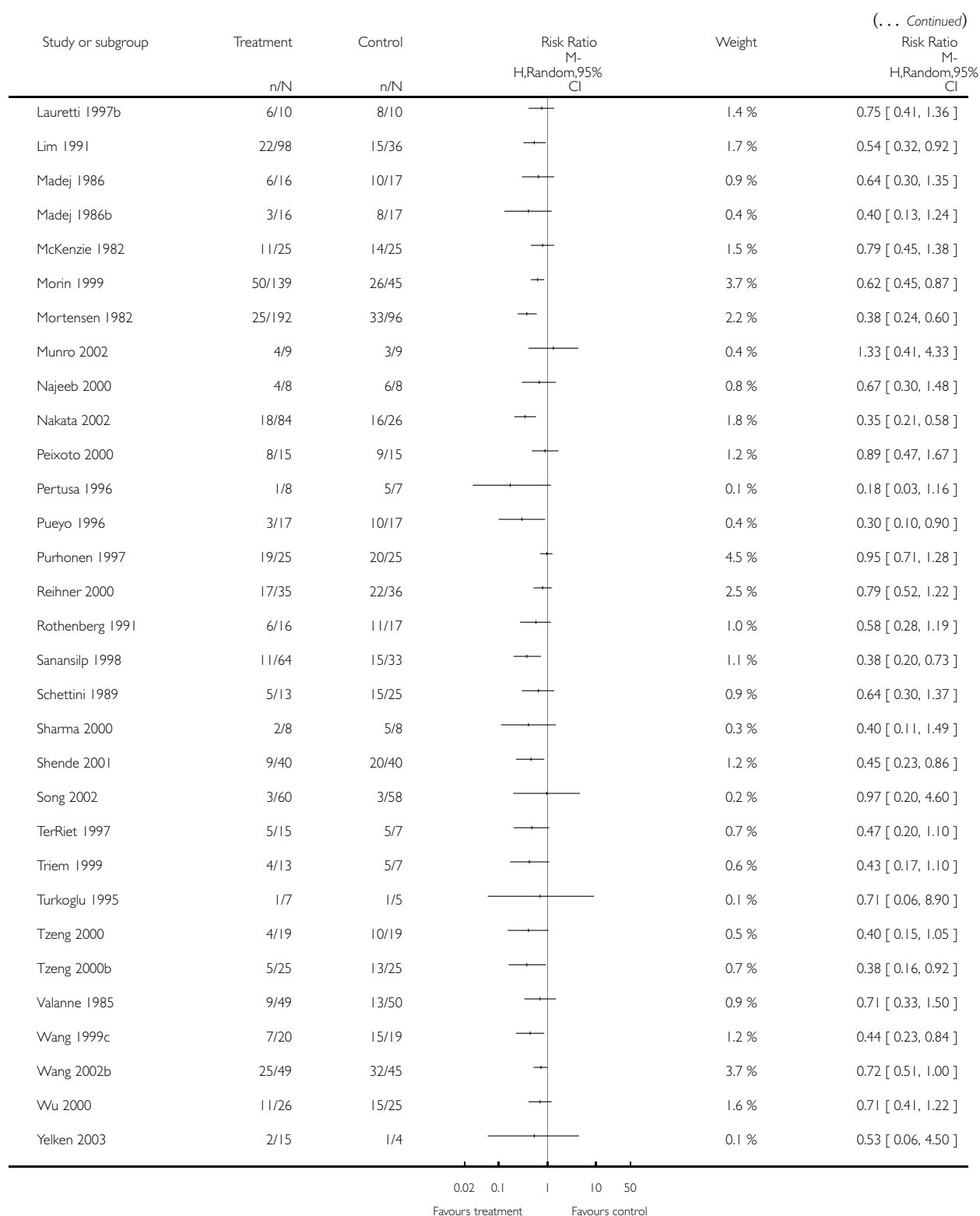


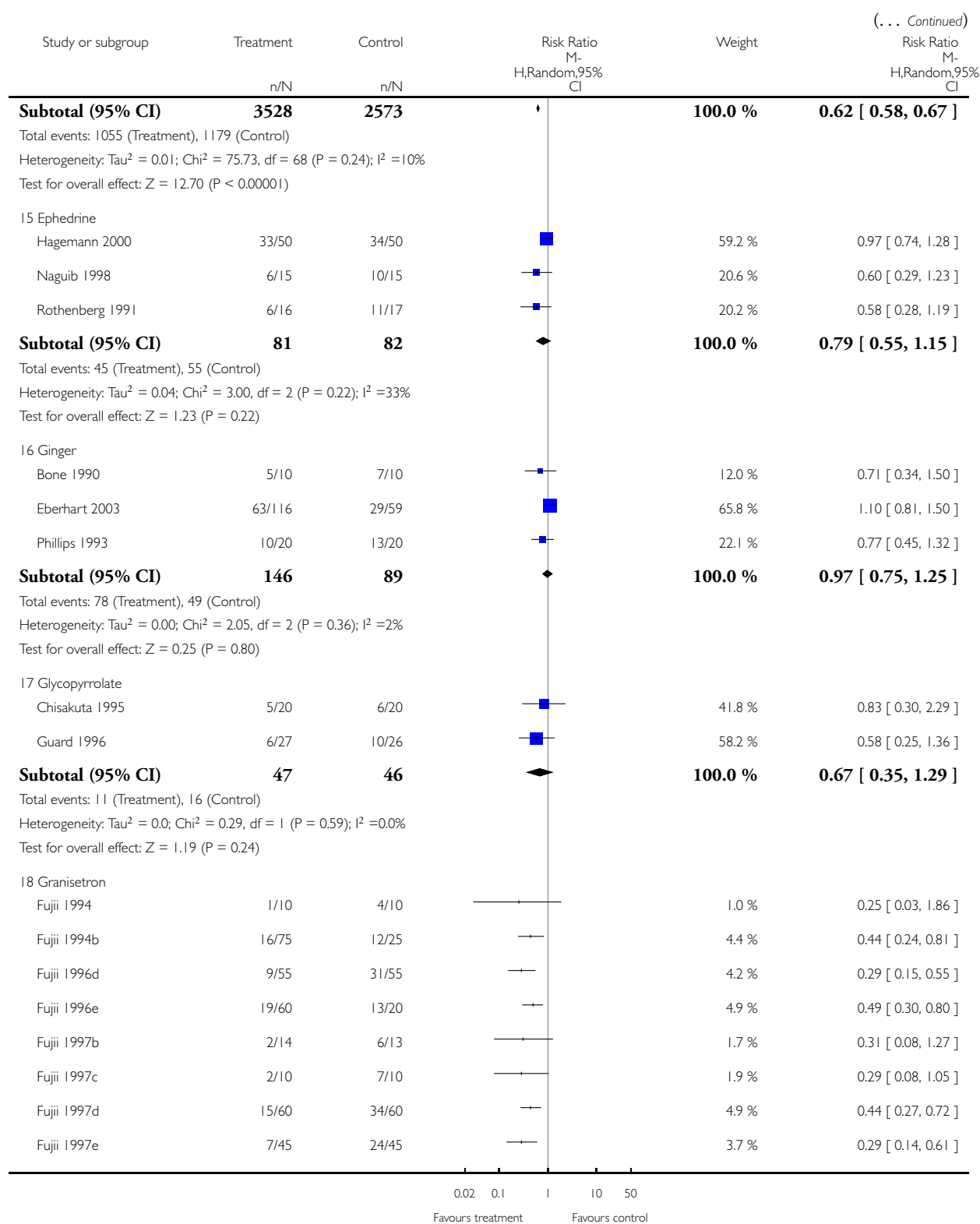


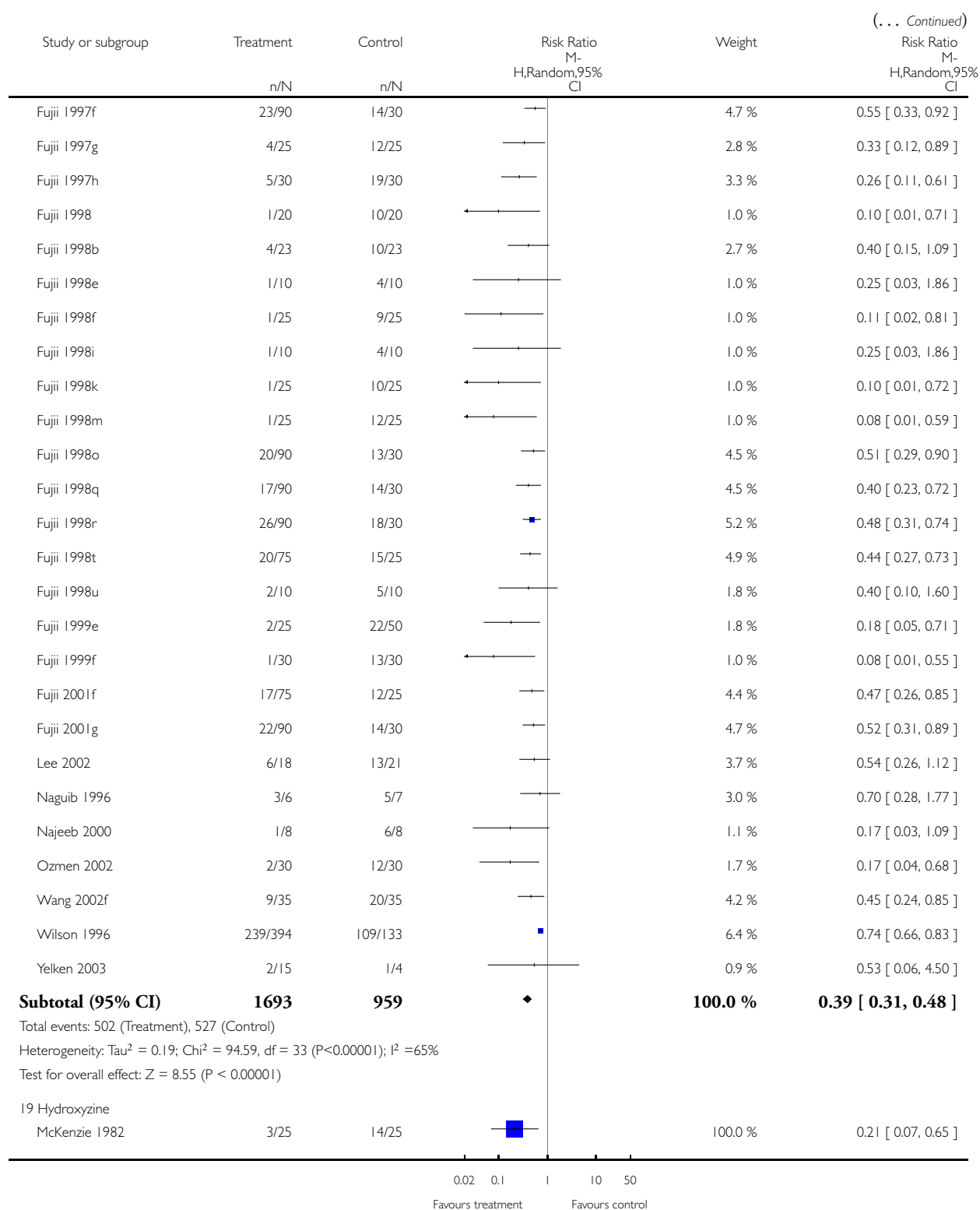
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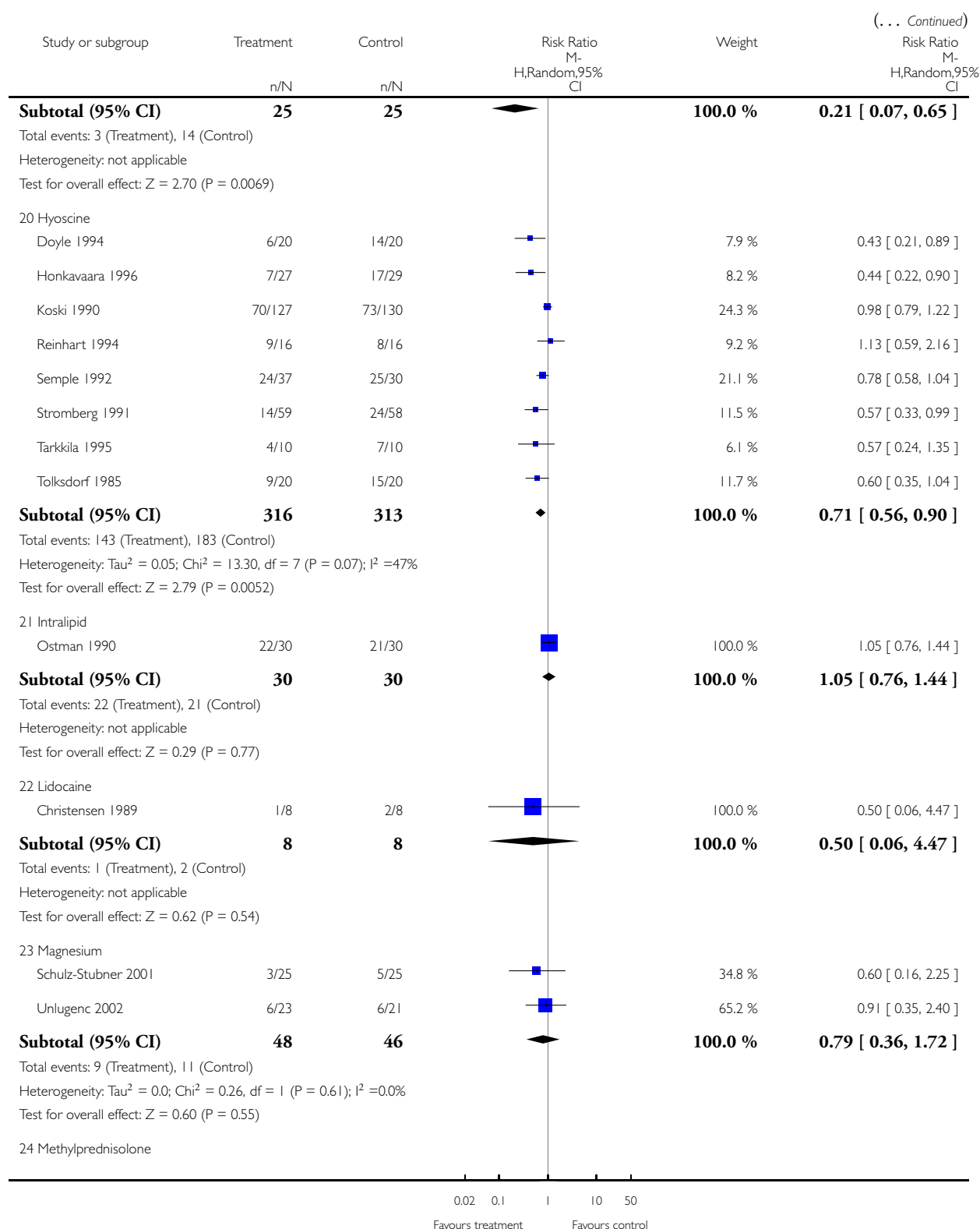




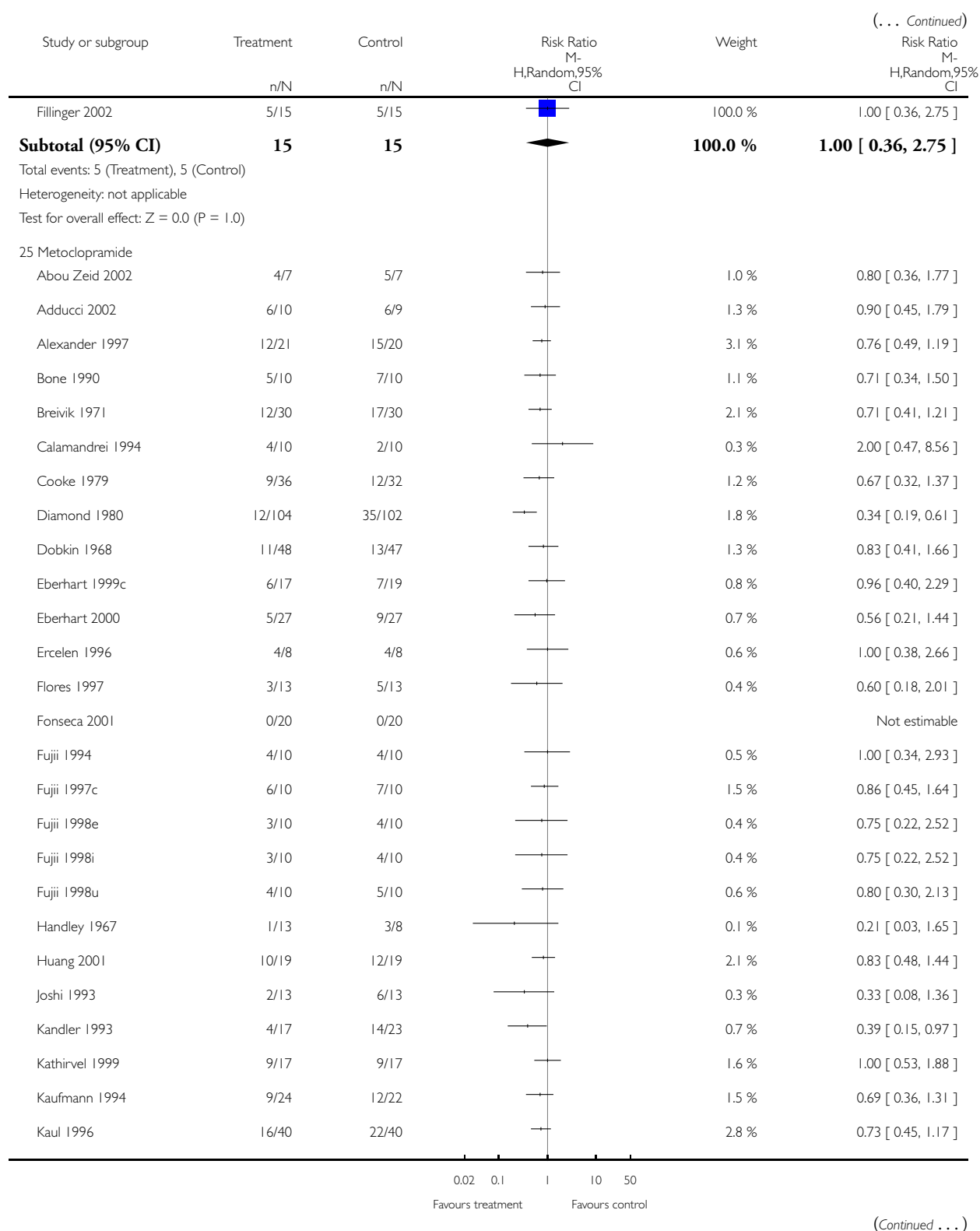


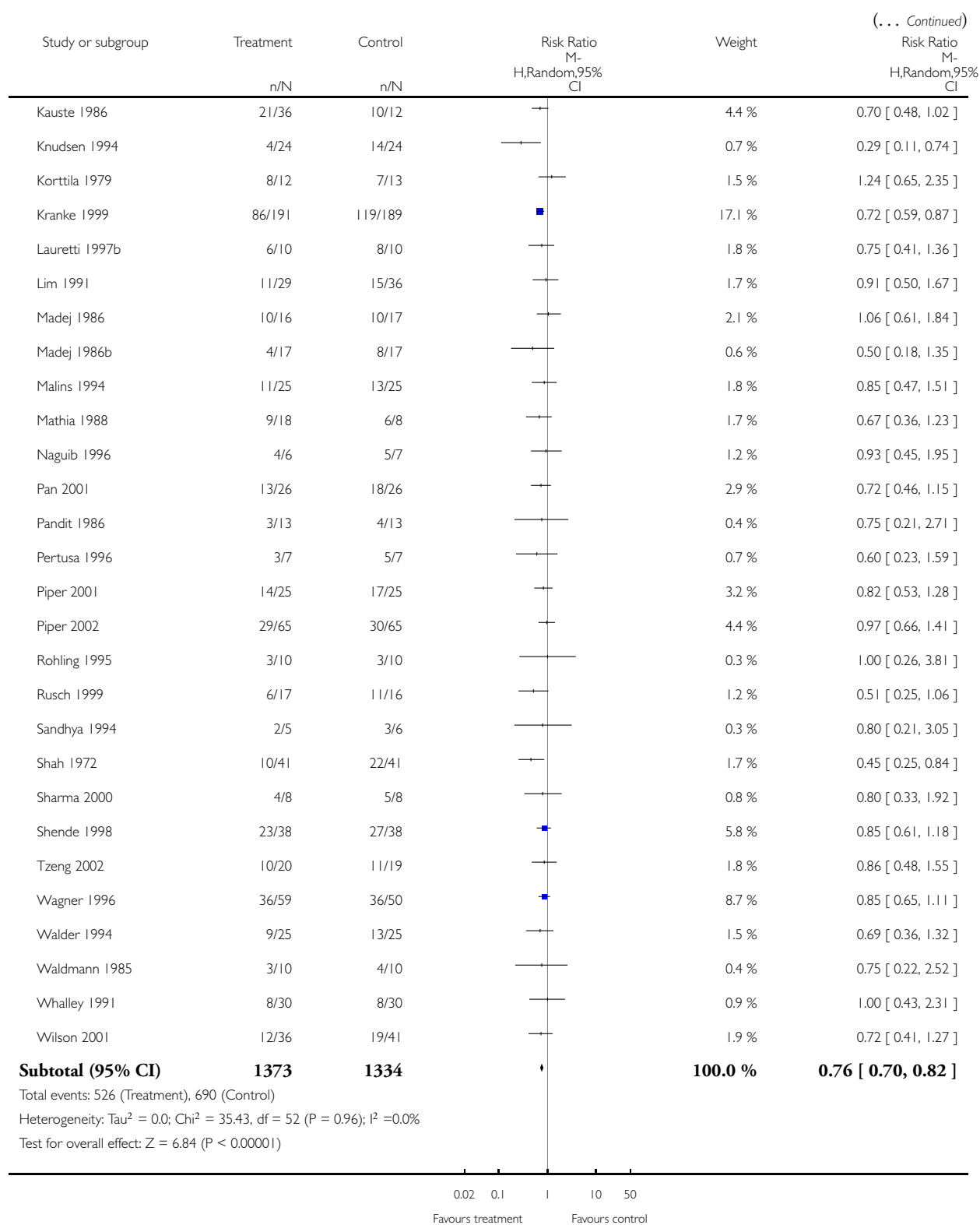


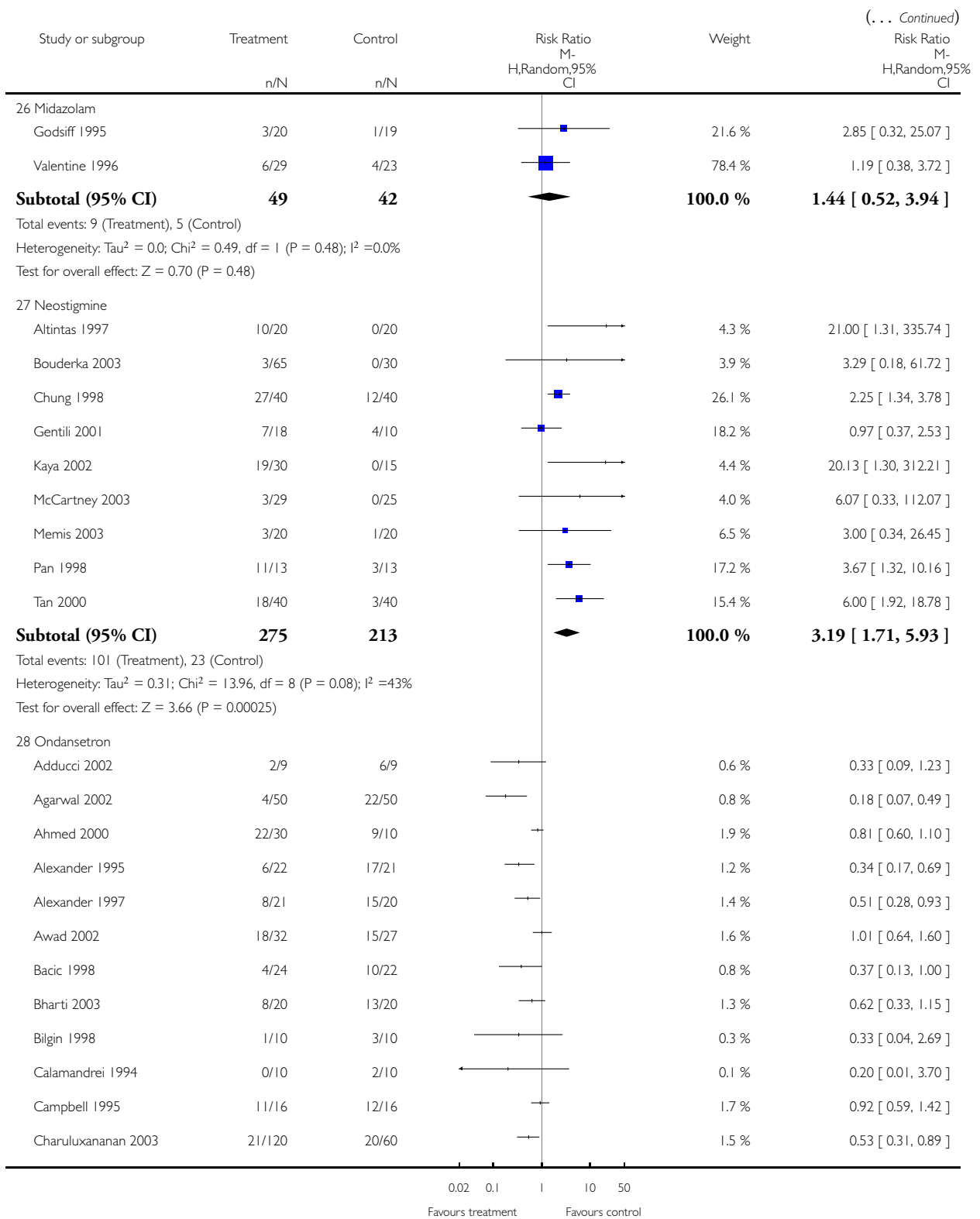


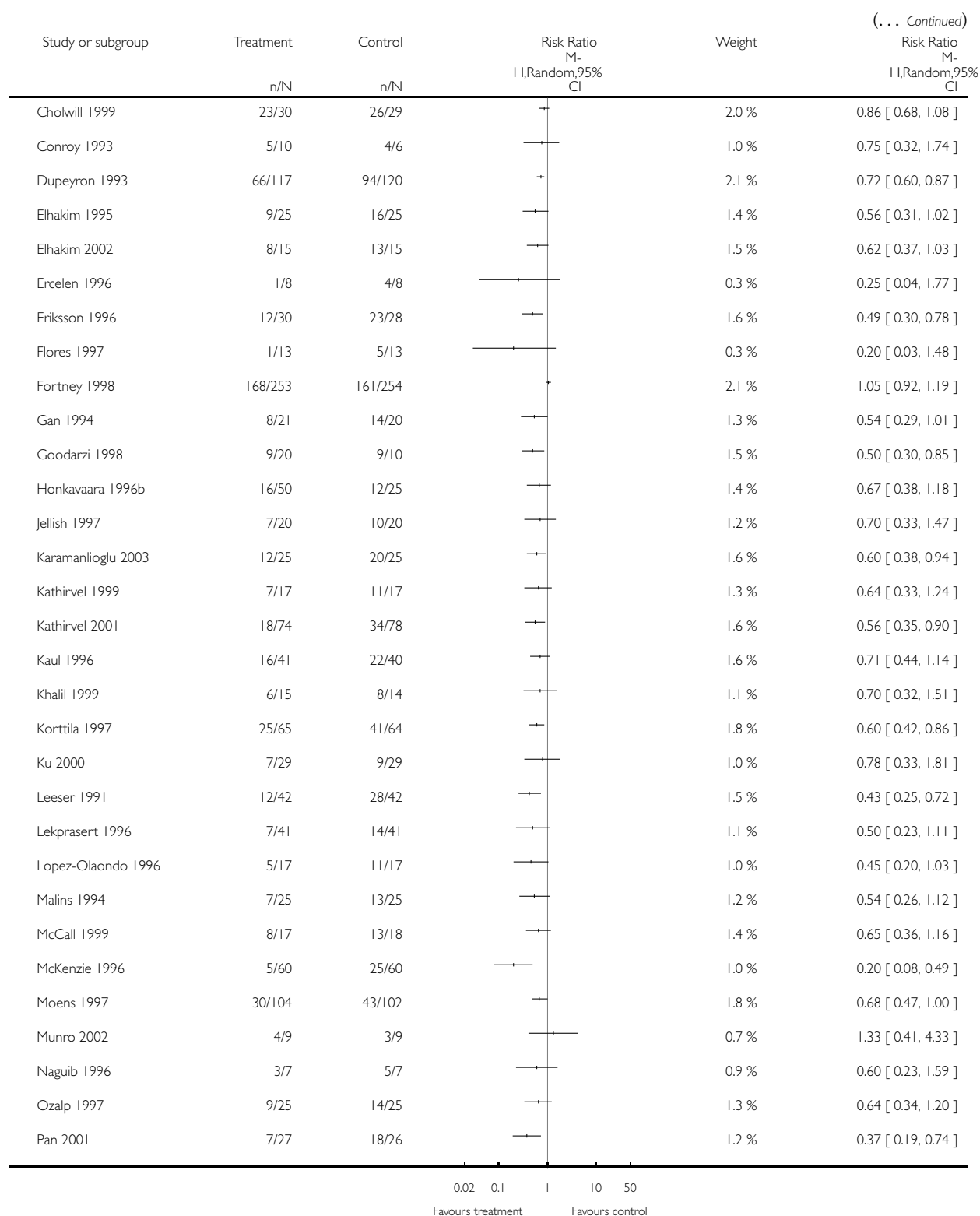


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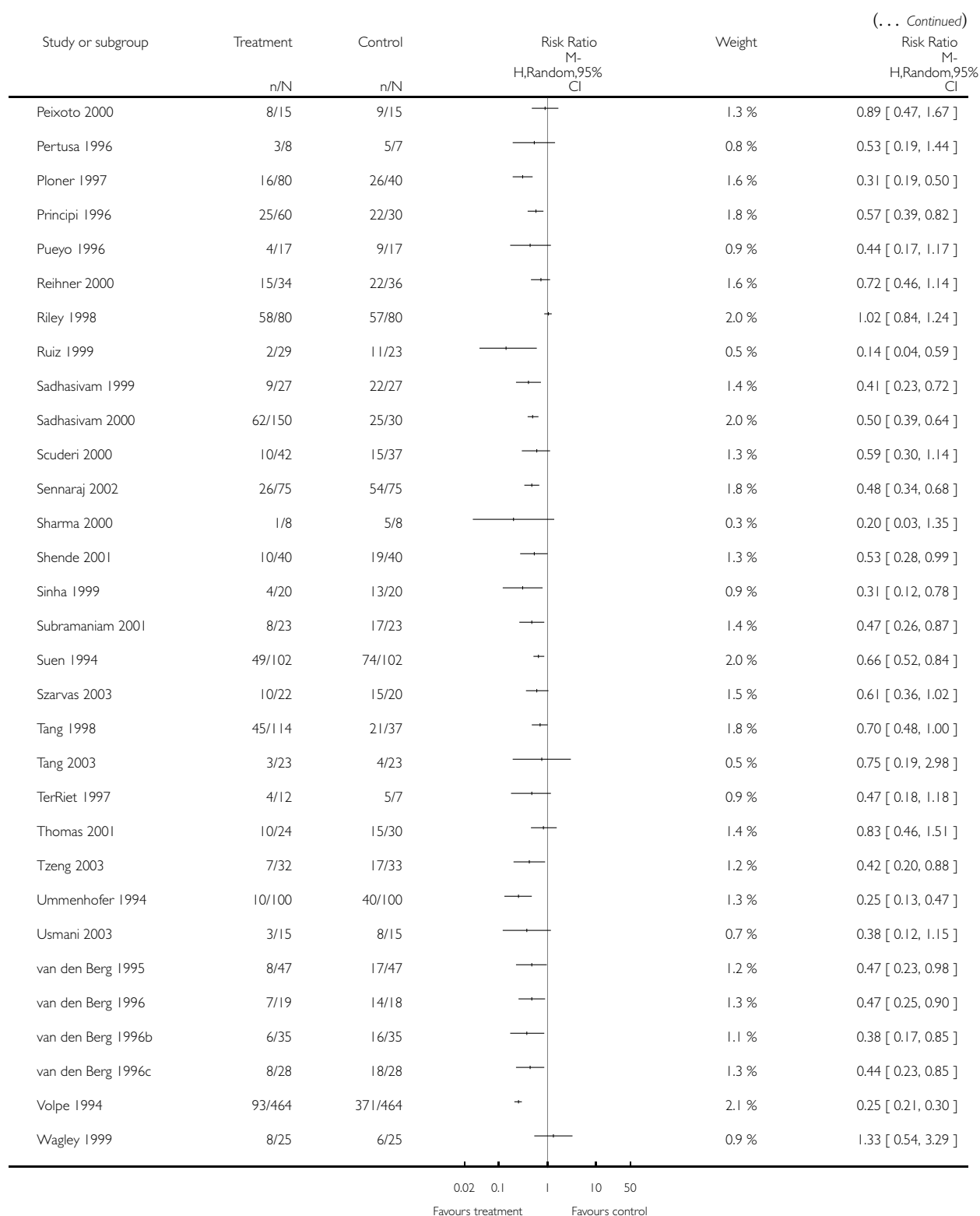




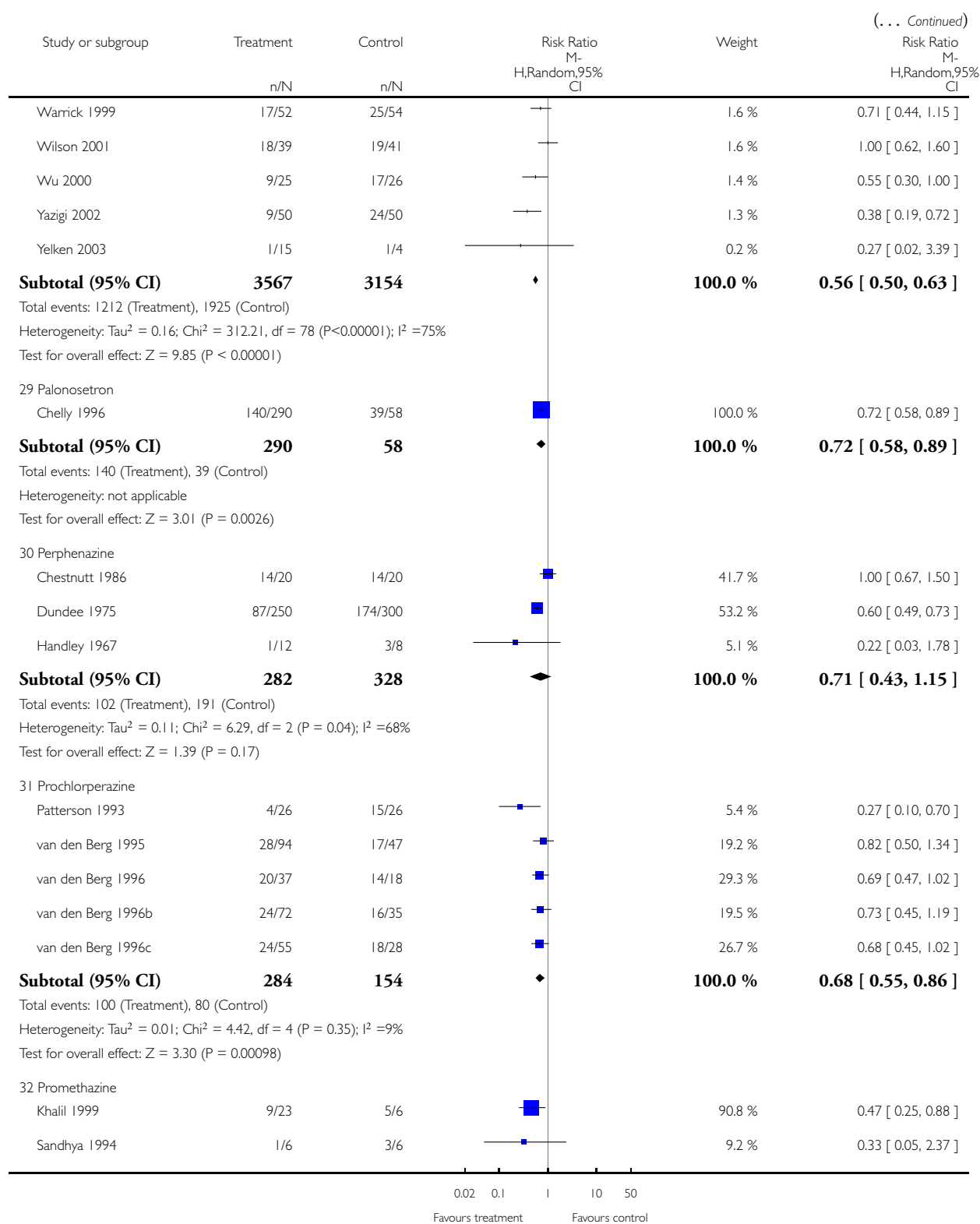


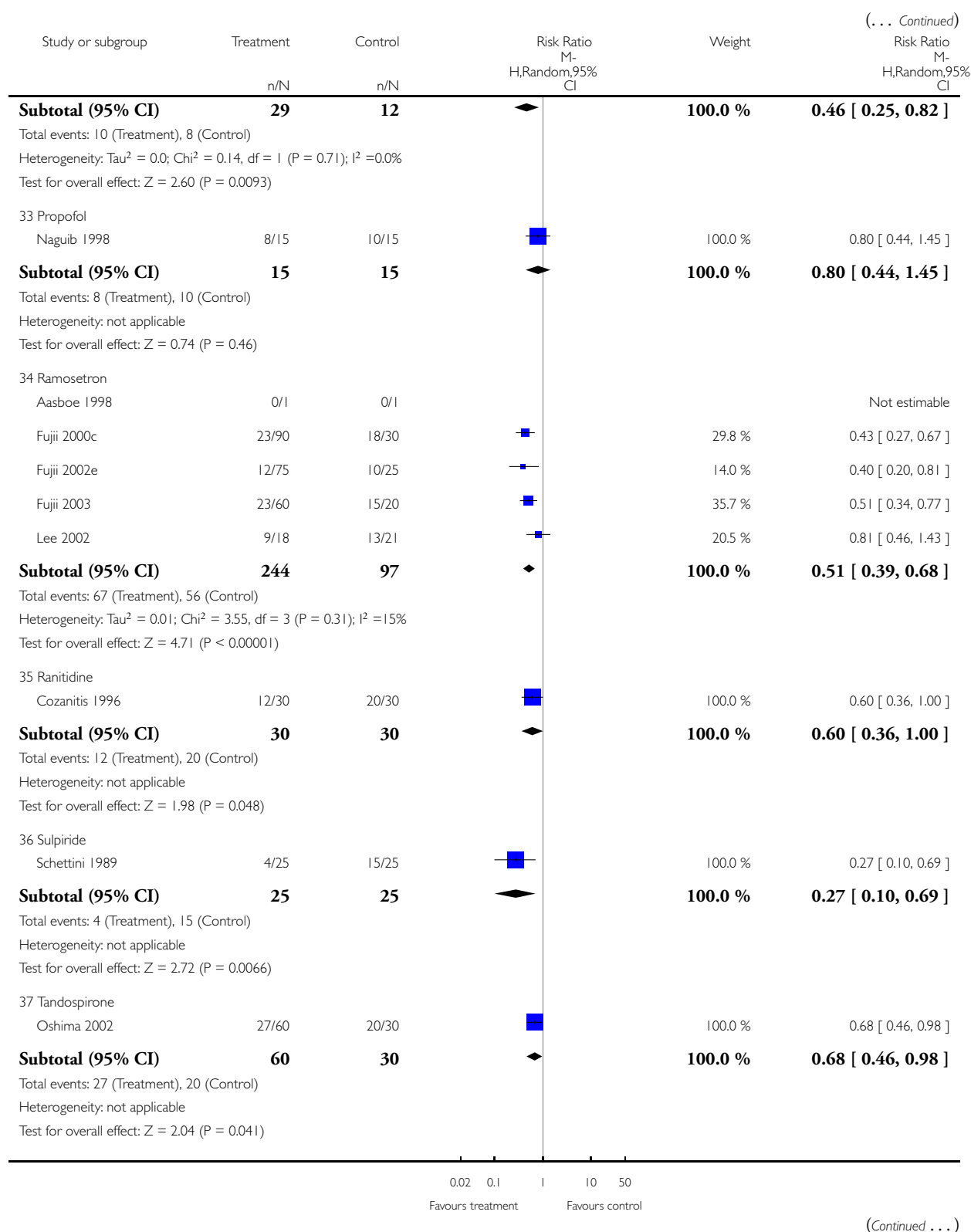




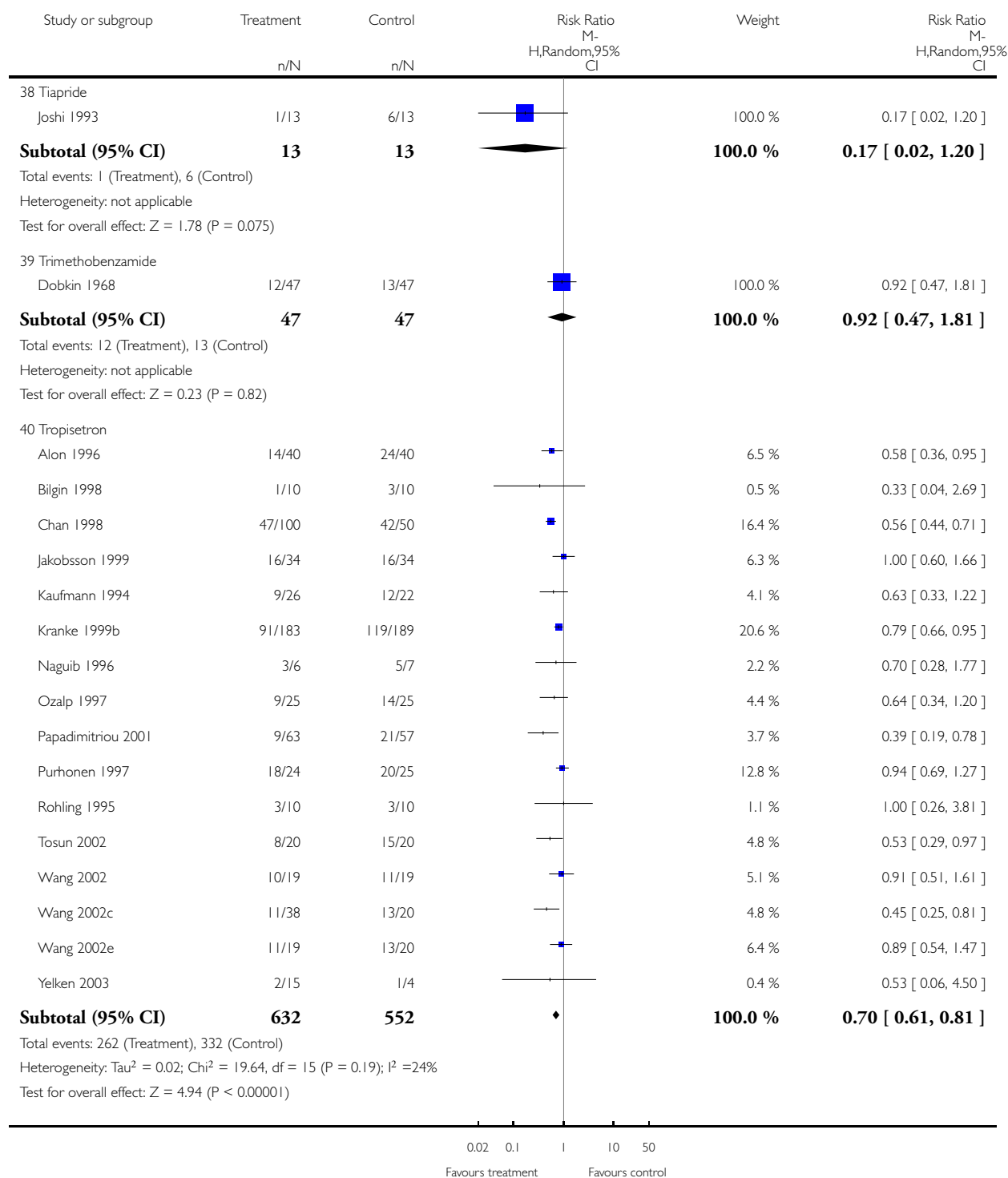


(Continued . . .)





(... Continued)

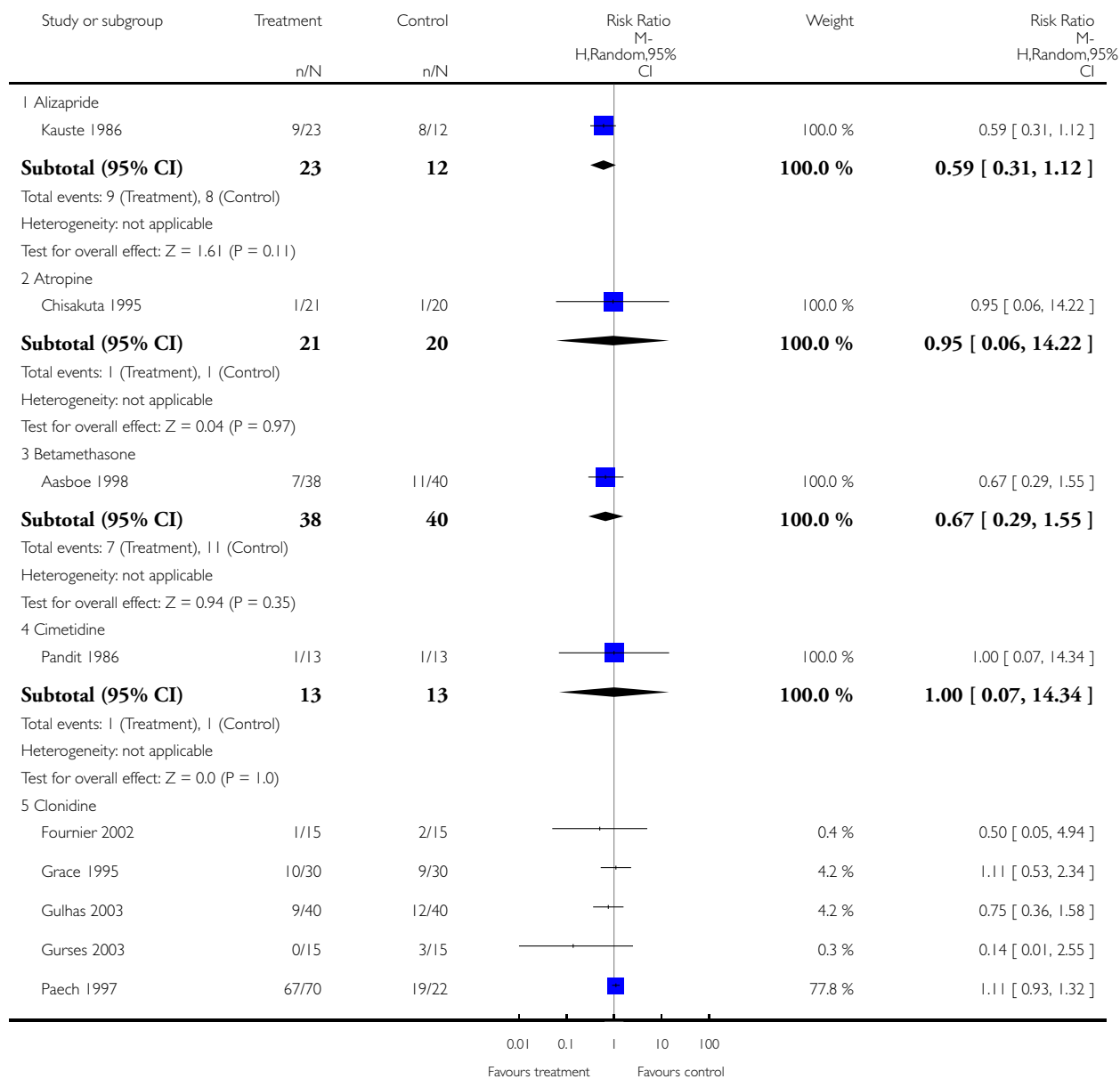


#### Analysis 1.4. Comparison 1 PRIMARY ANALYSIS: Placebo versus Drug, Outcome 4 Rescue antiemetic.

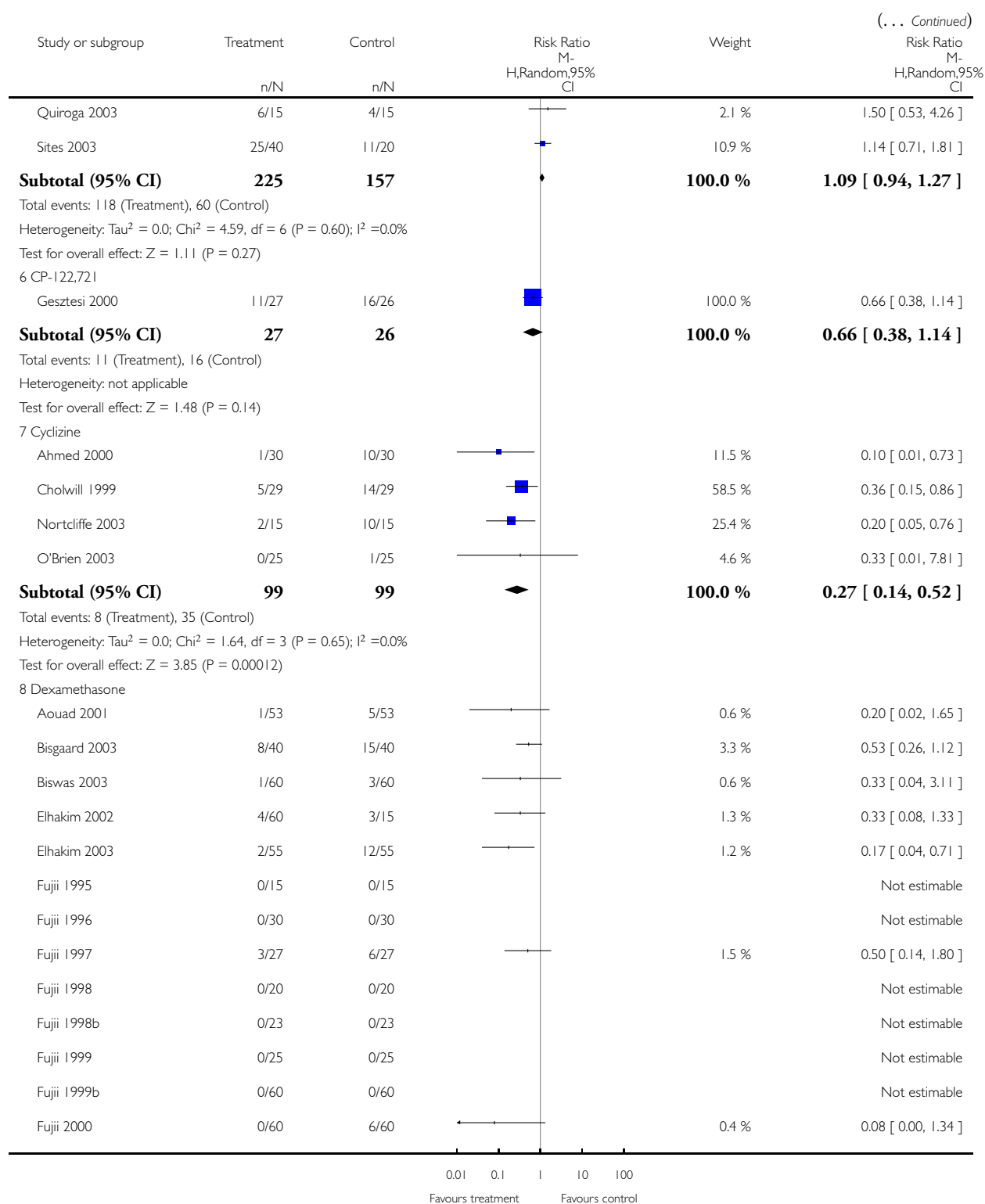
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 1 PRIMARY ANALYSIS: Placebo versus Drug

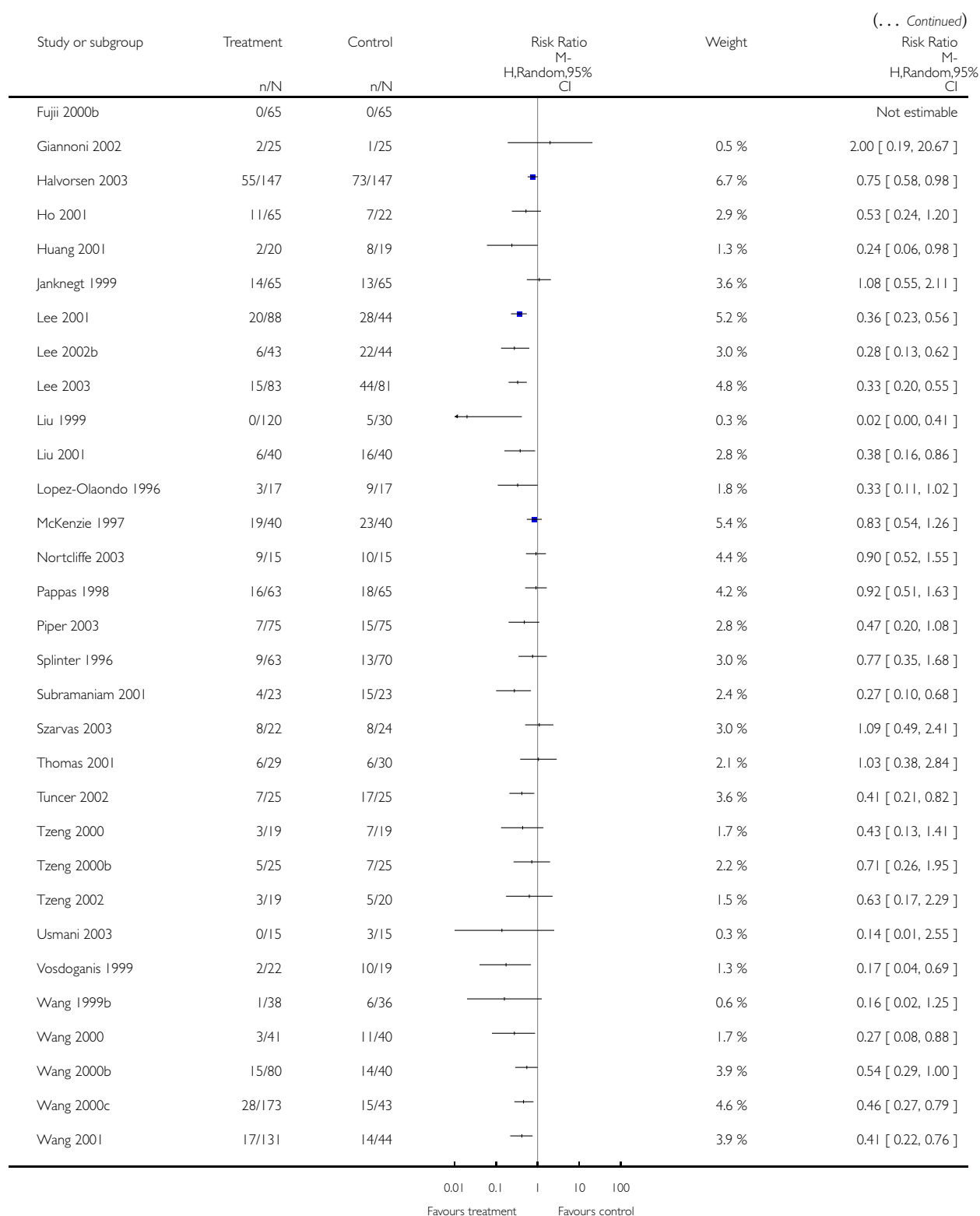
Outcome: 4 Rescue antiemetic



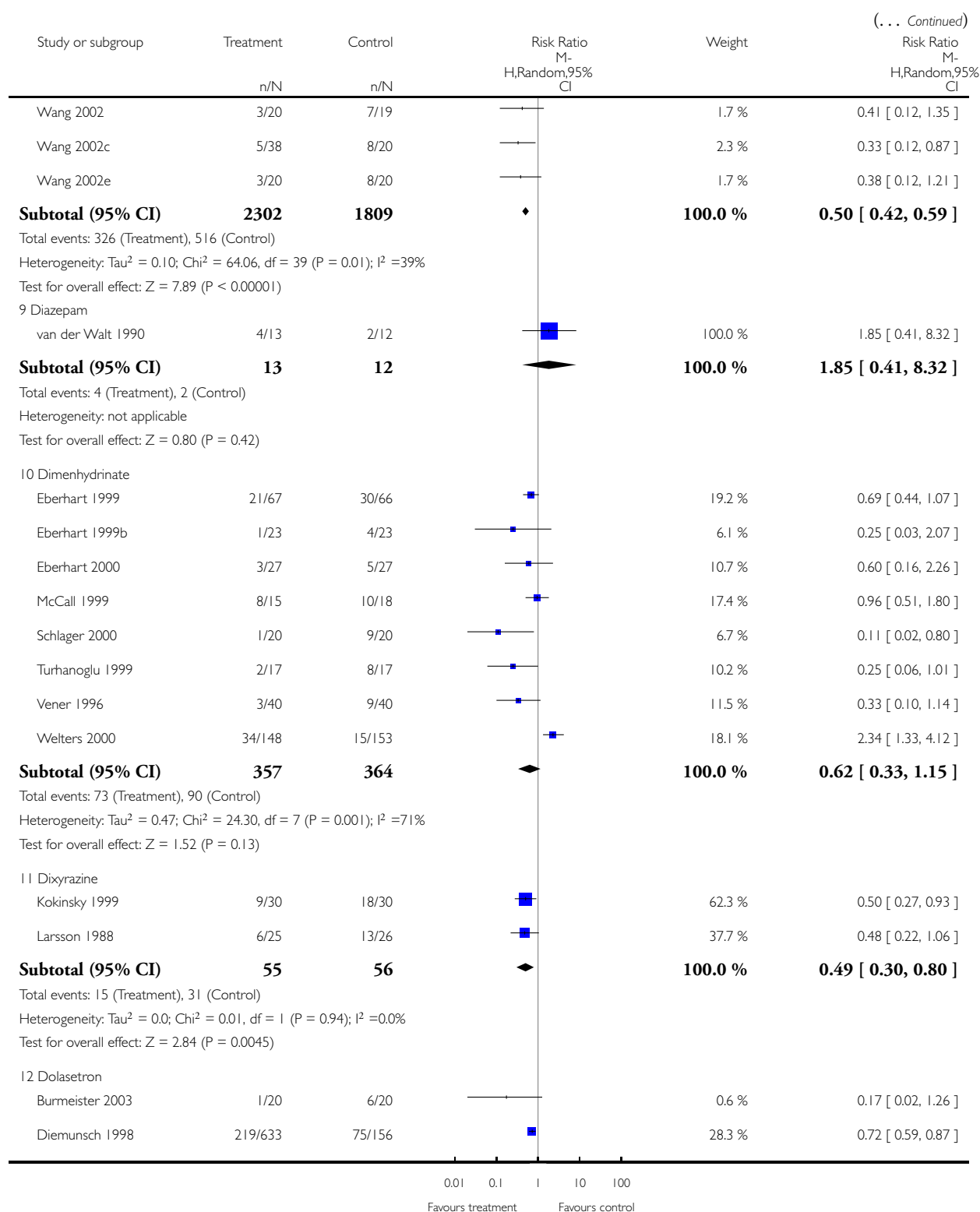
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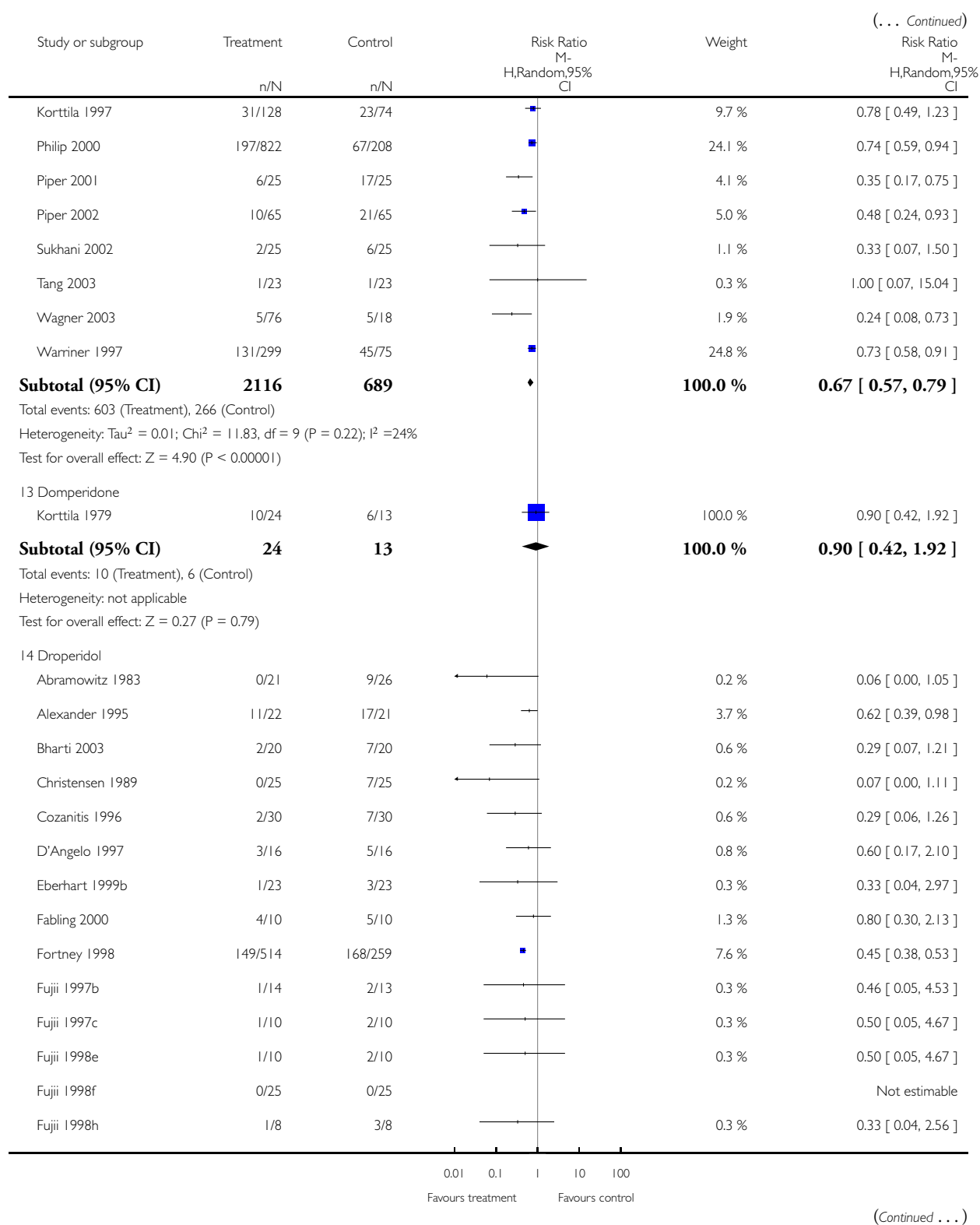
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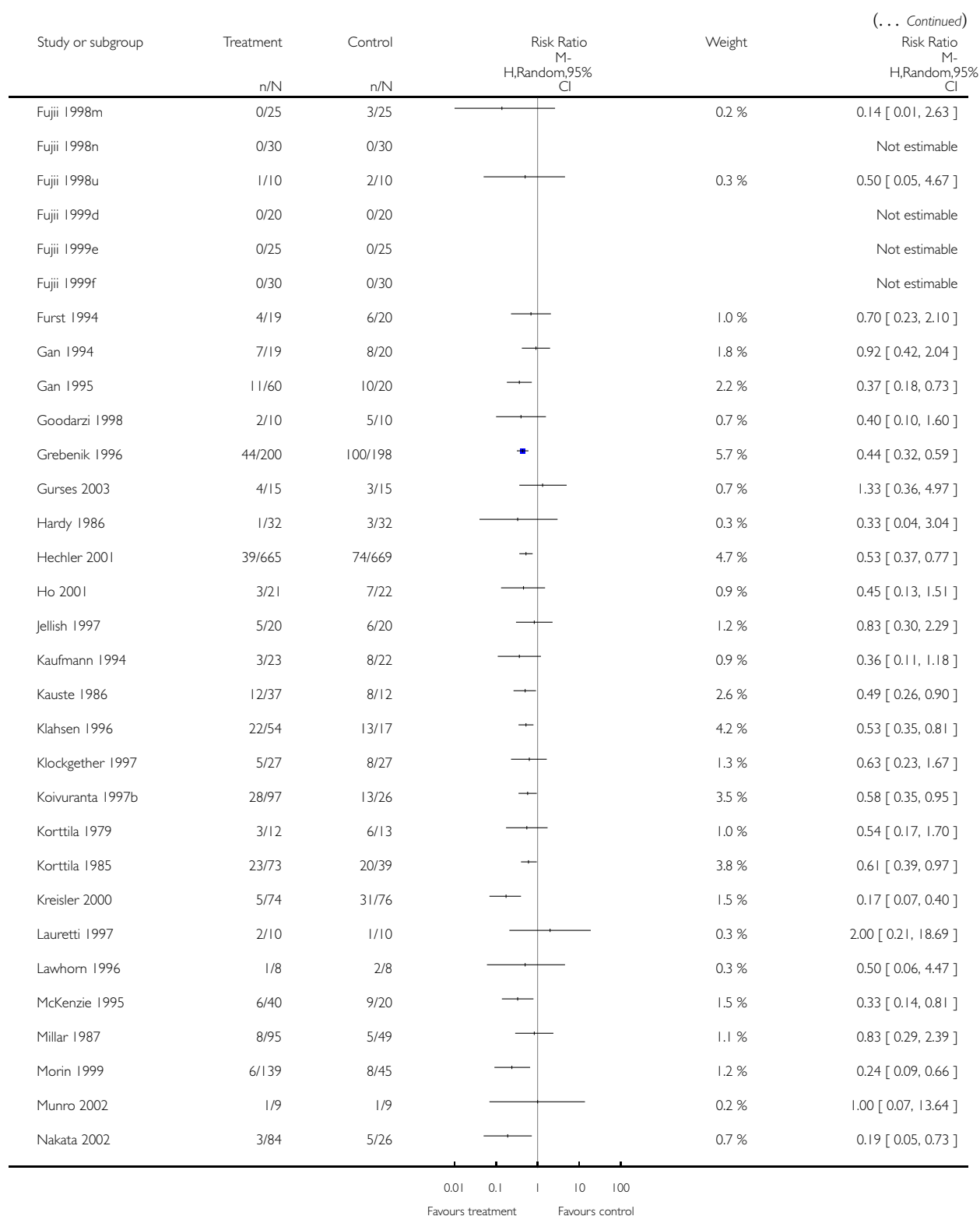


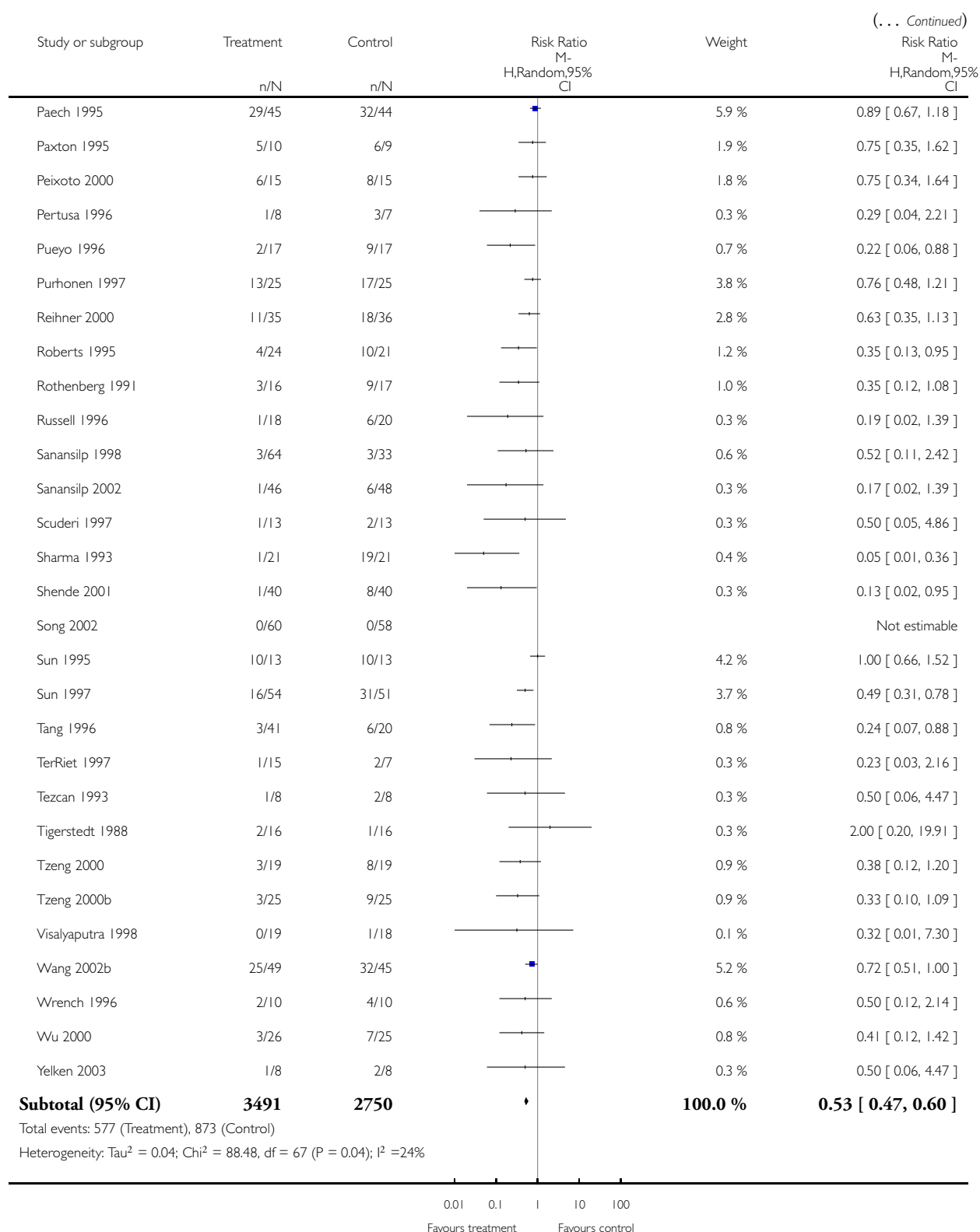
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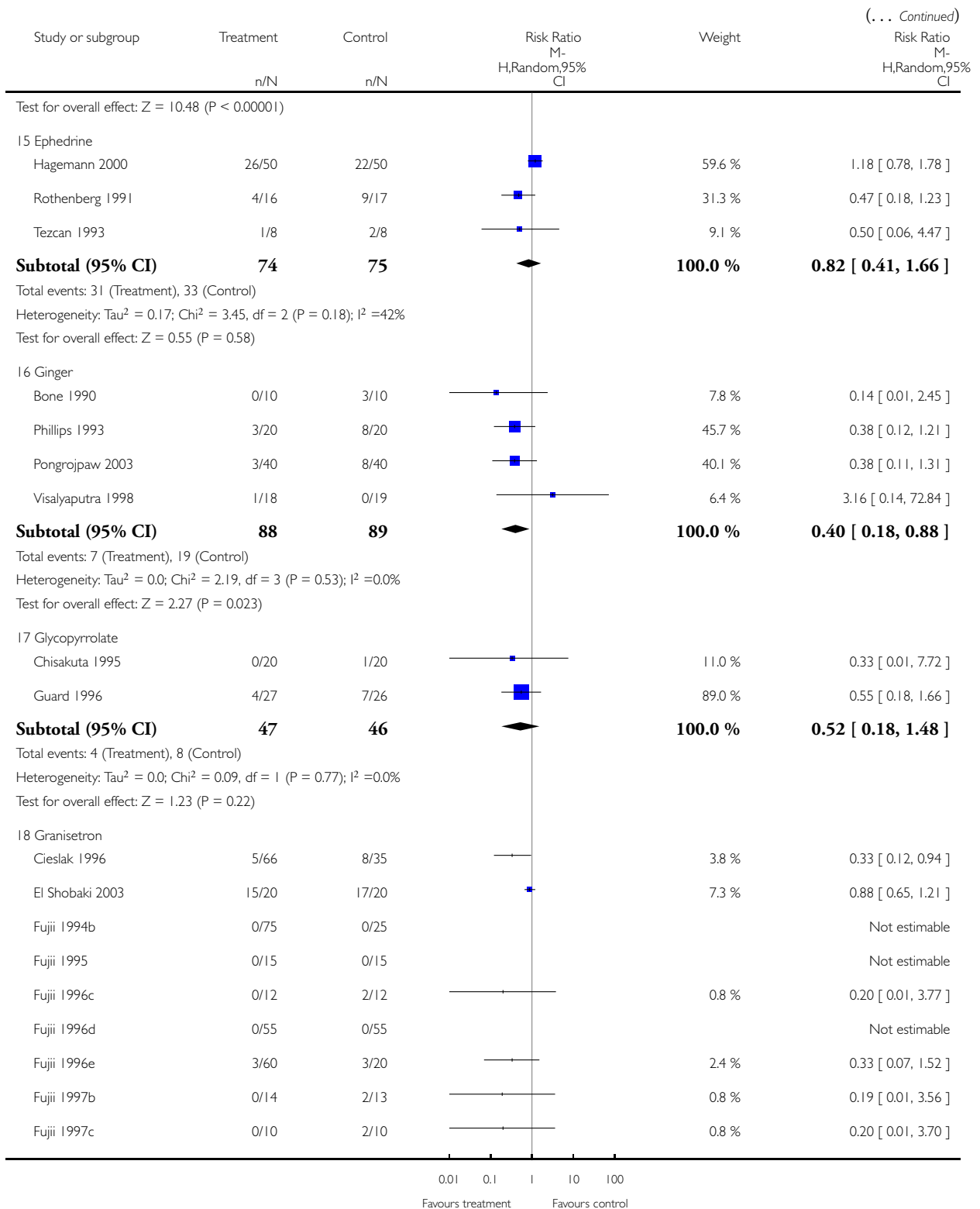


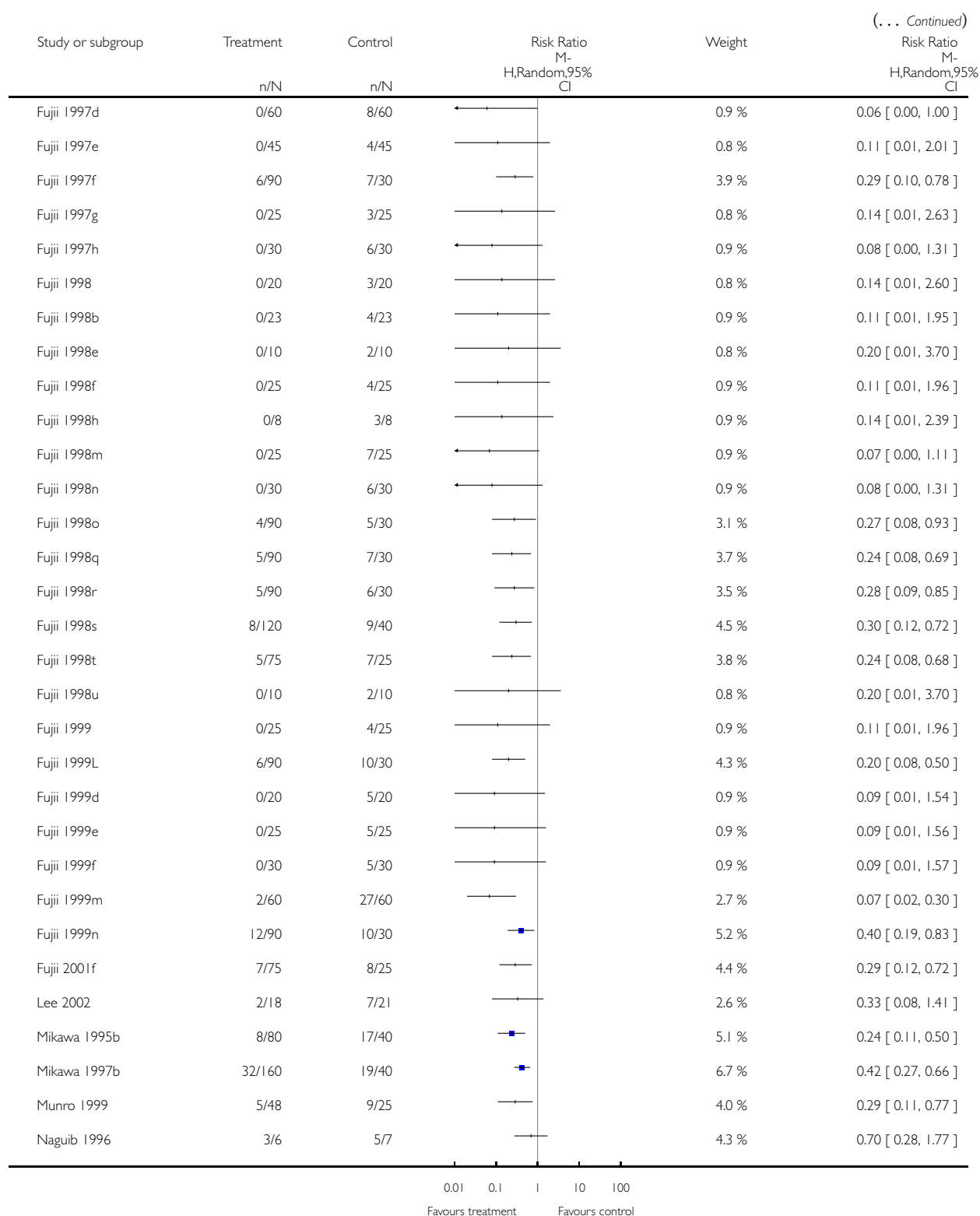




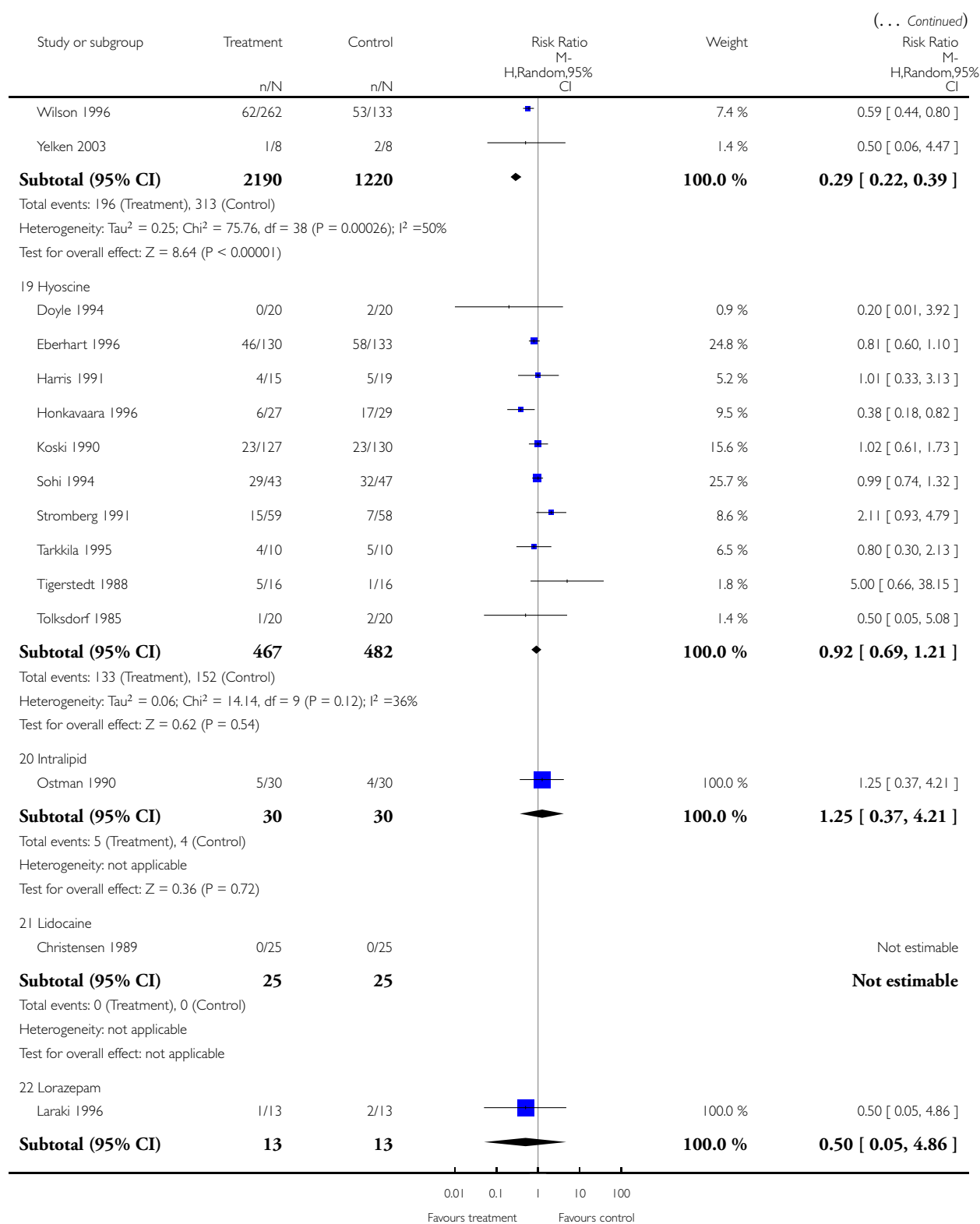


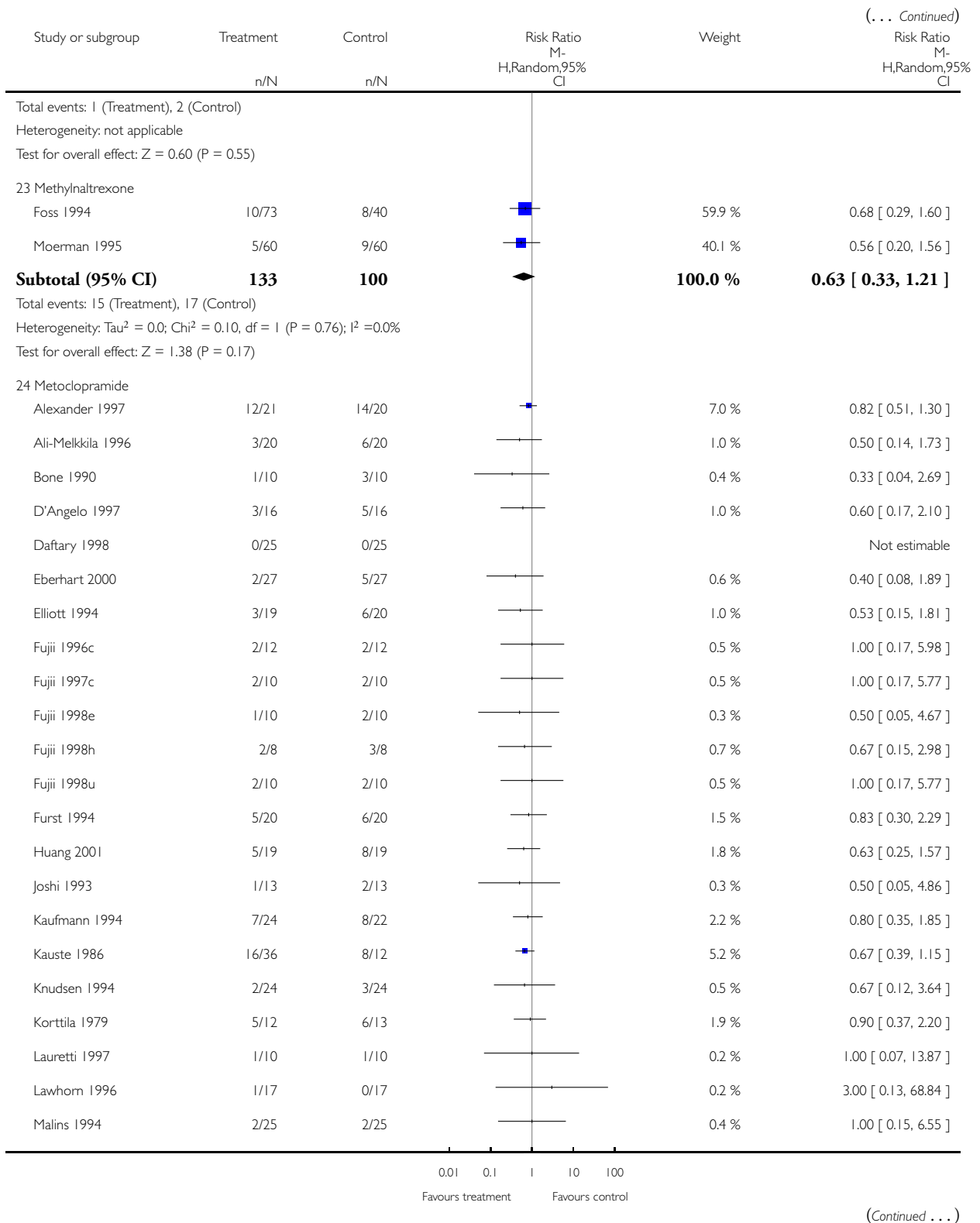
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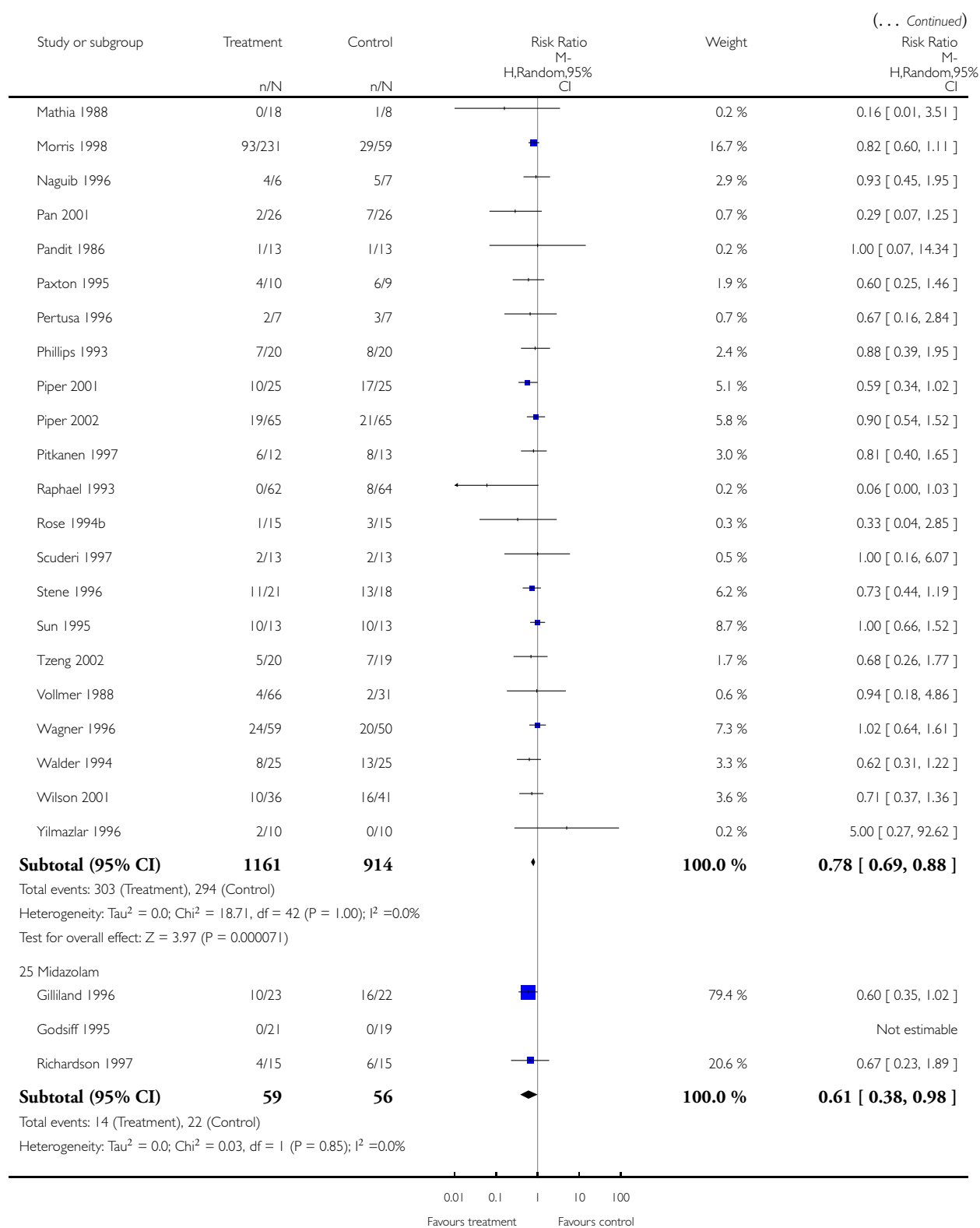




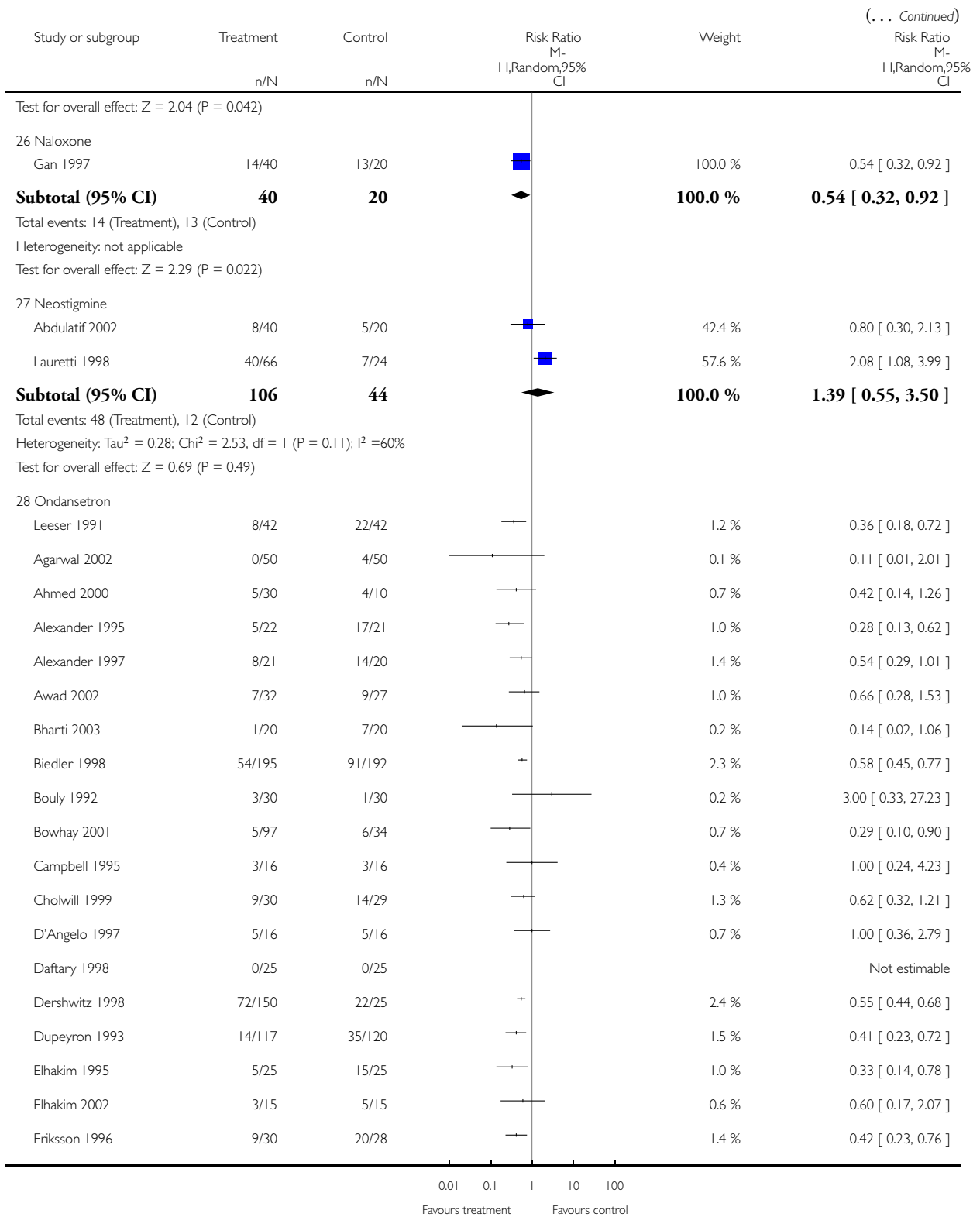
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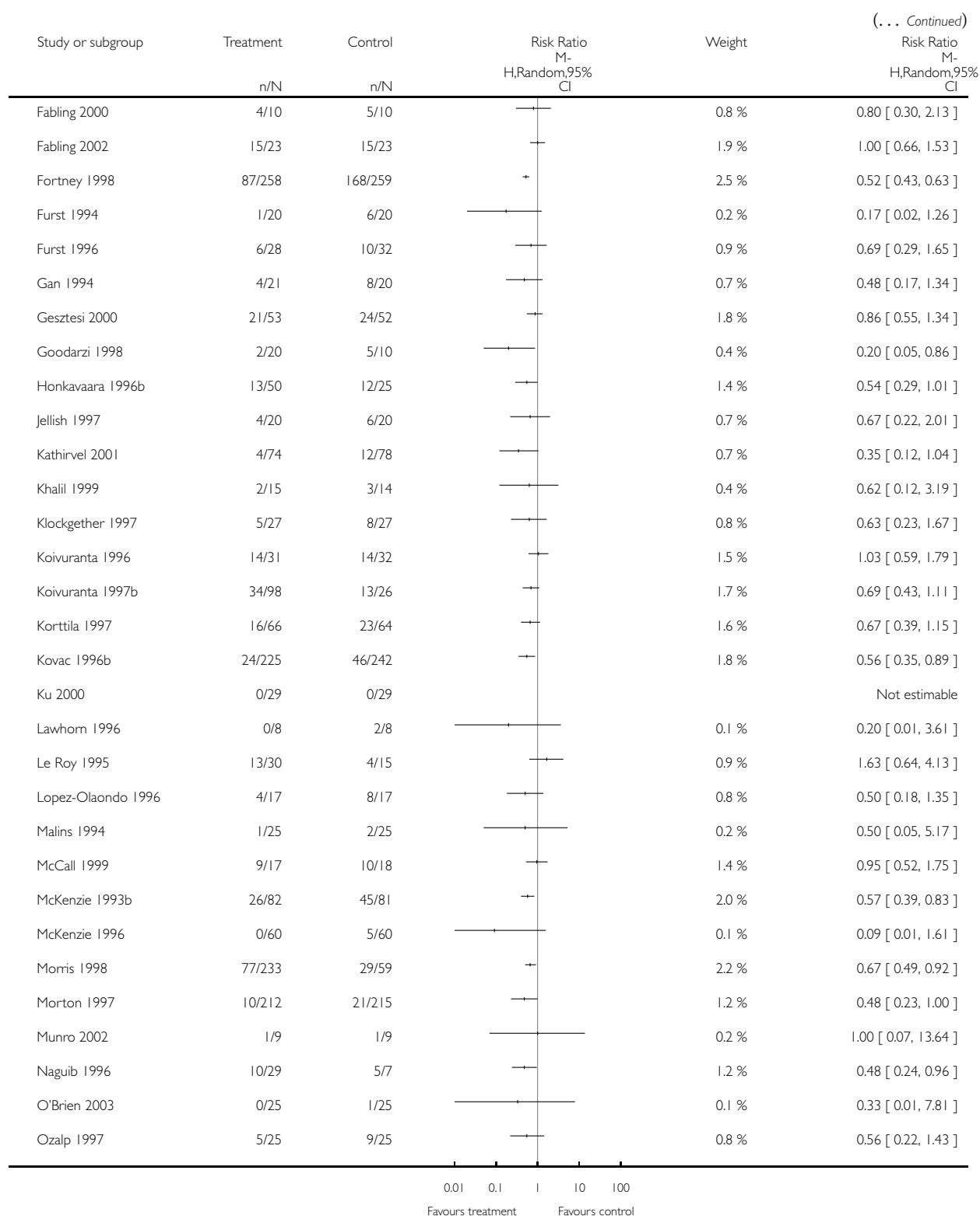


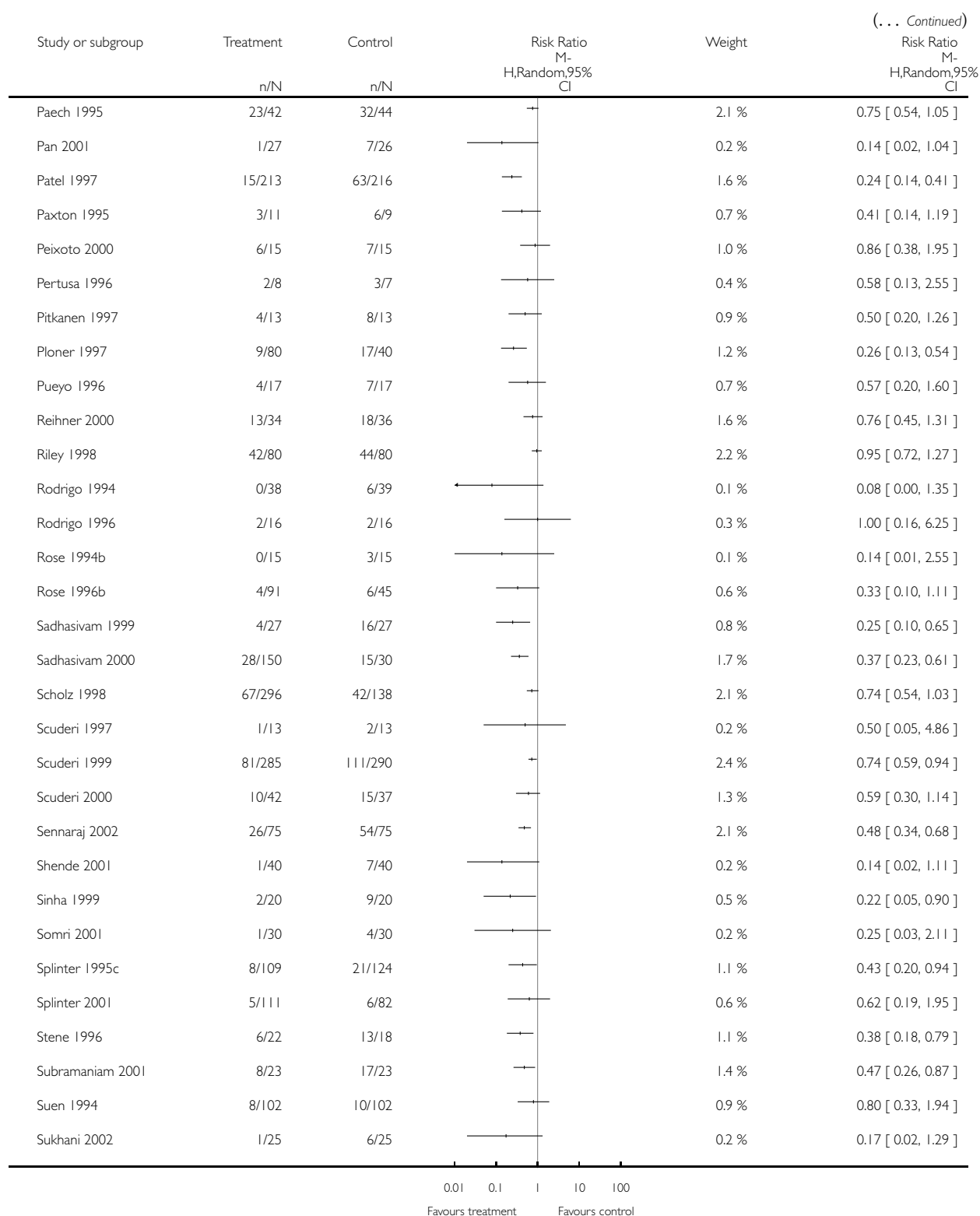




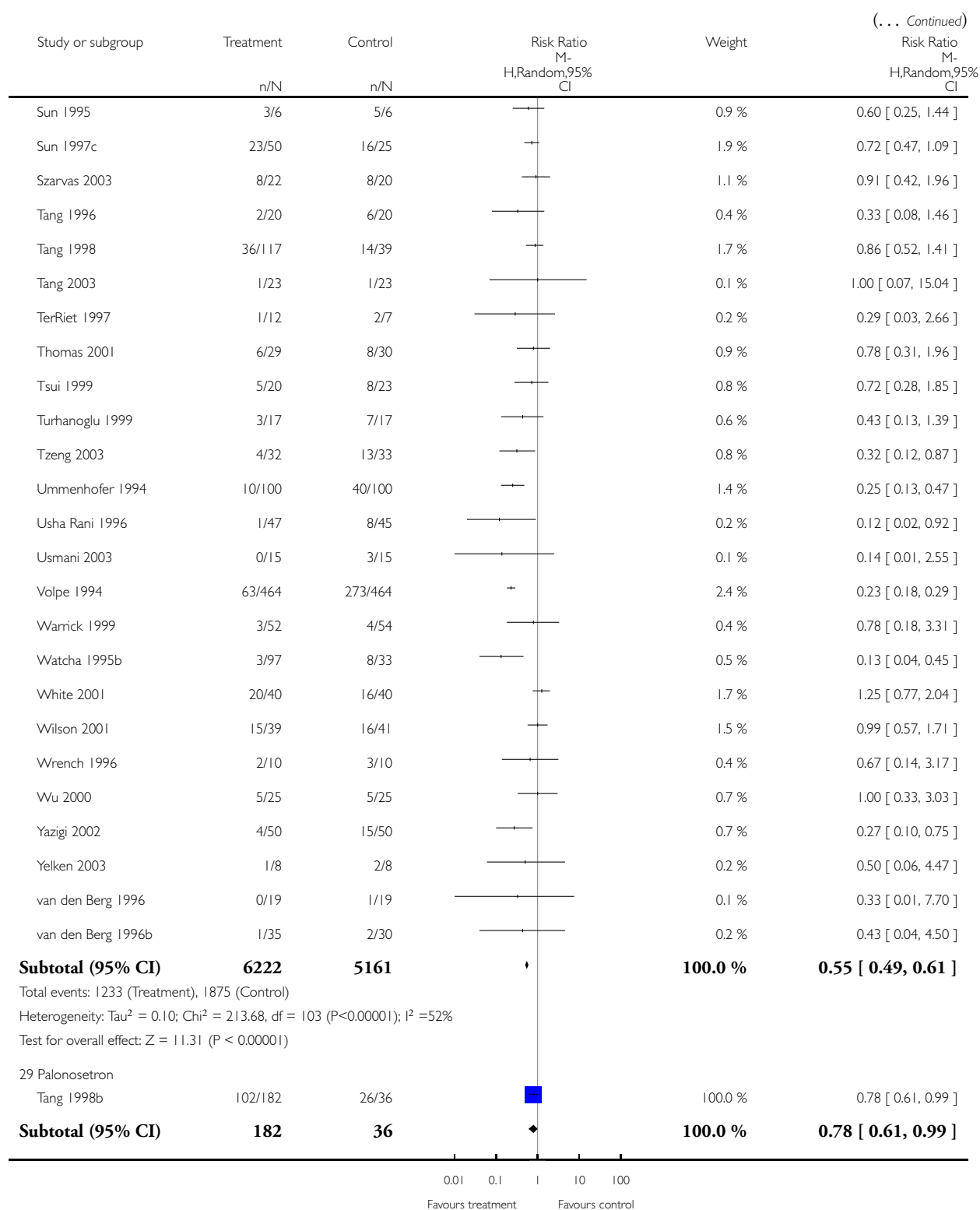


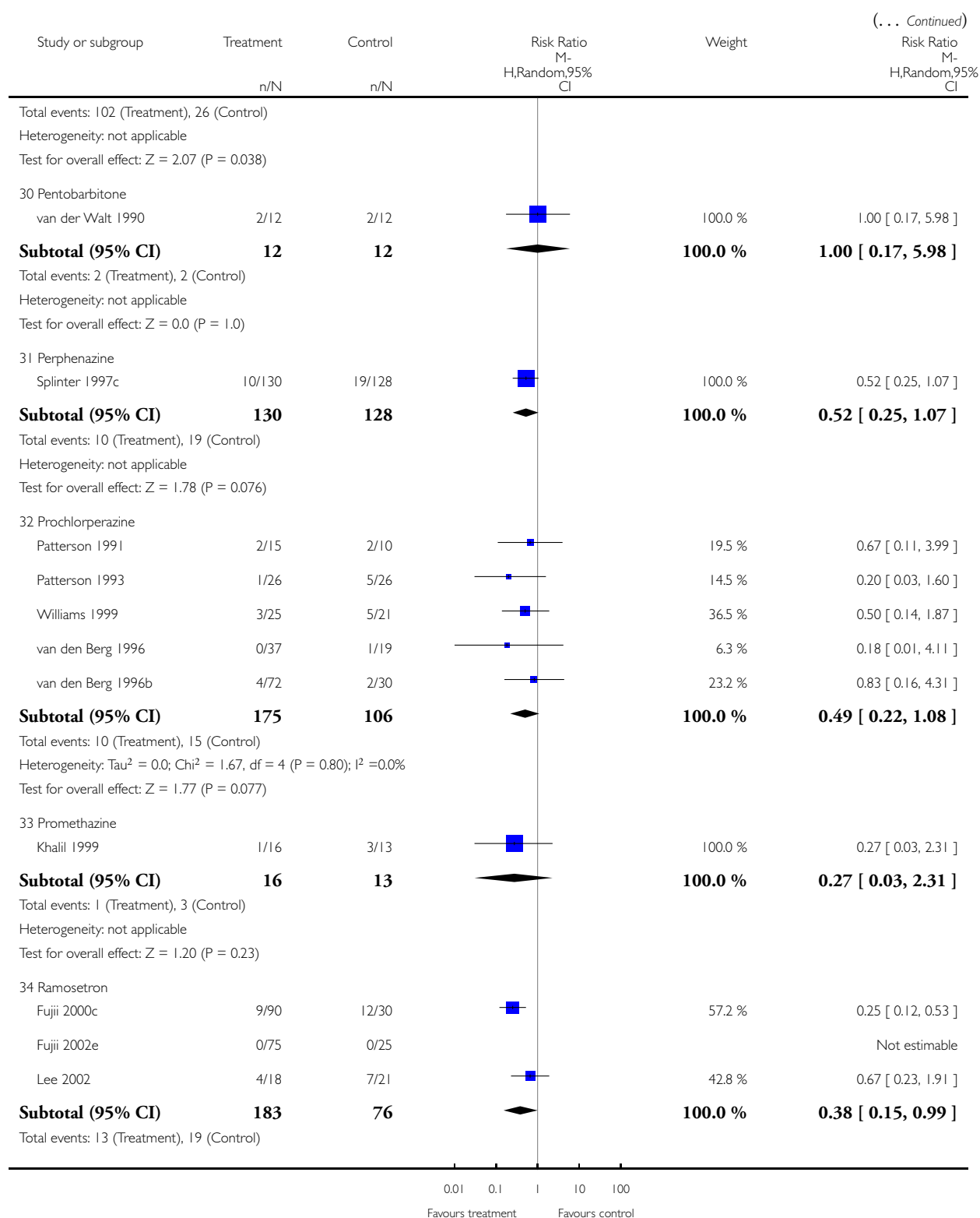
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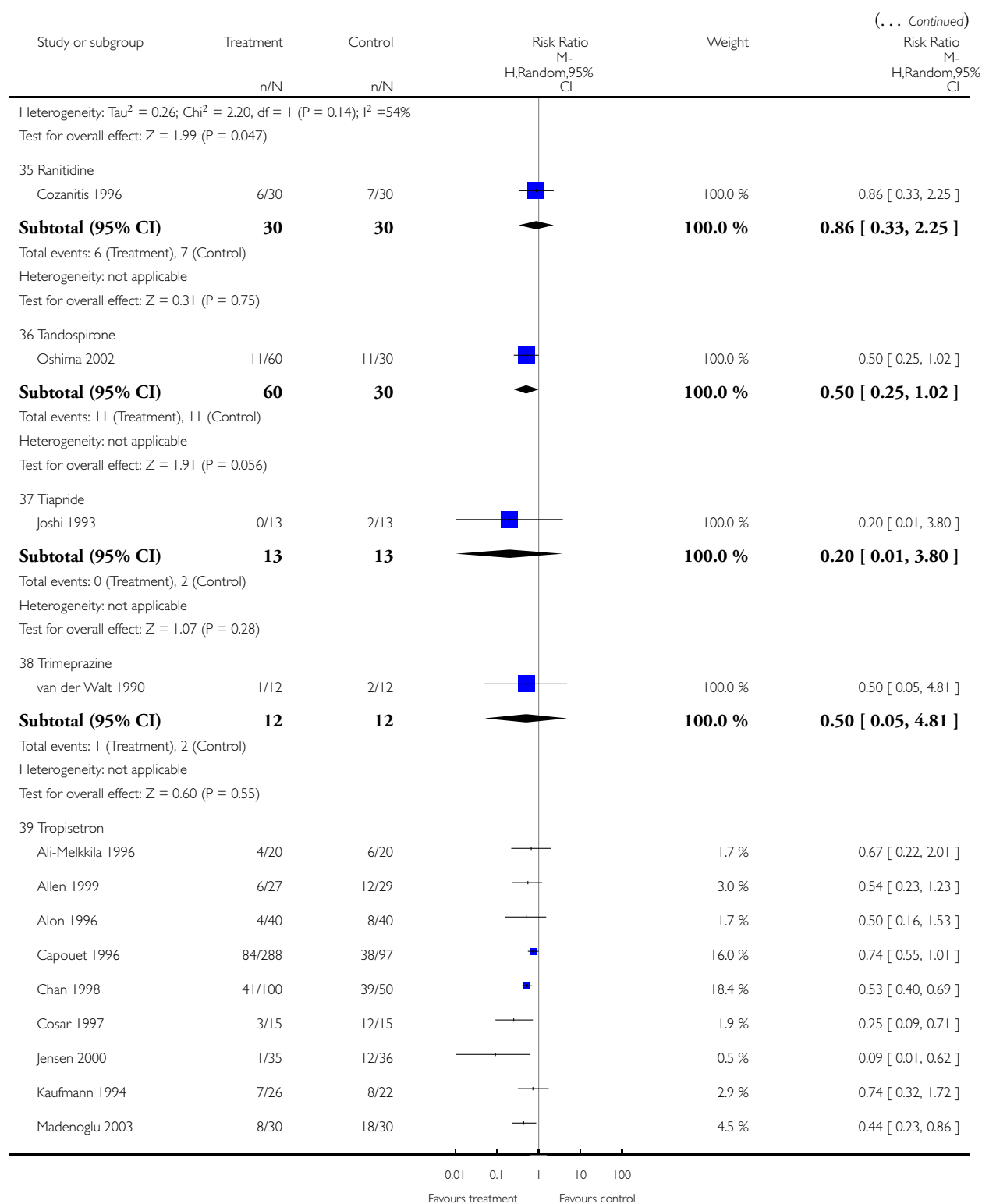




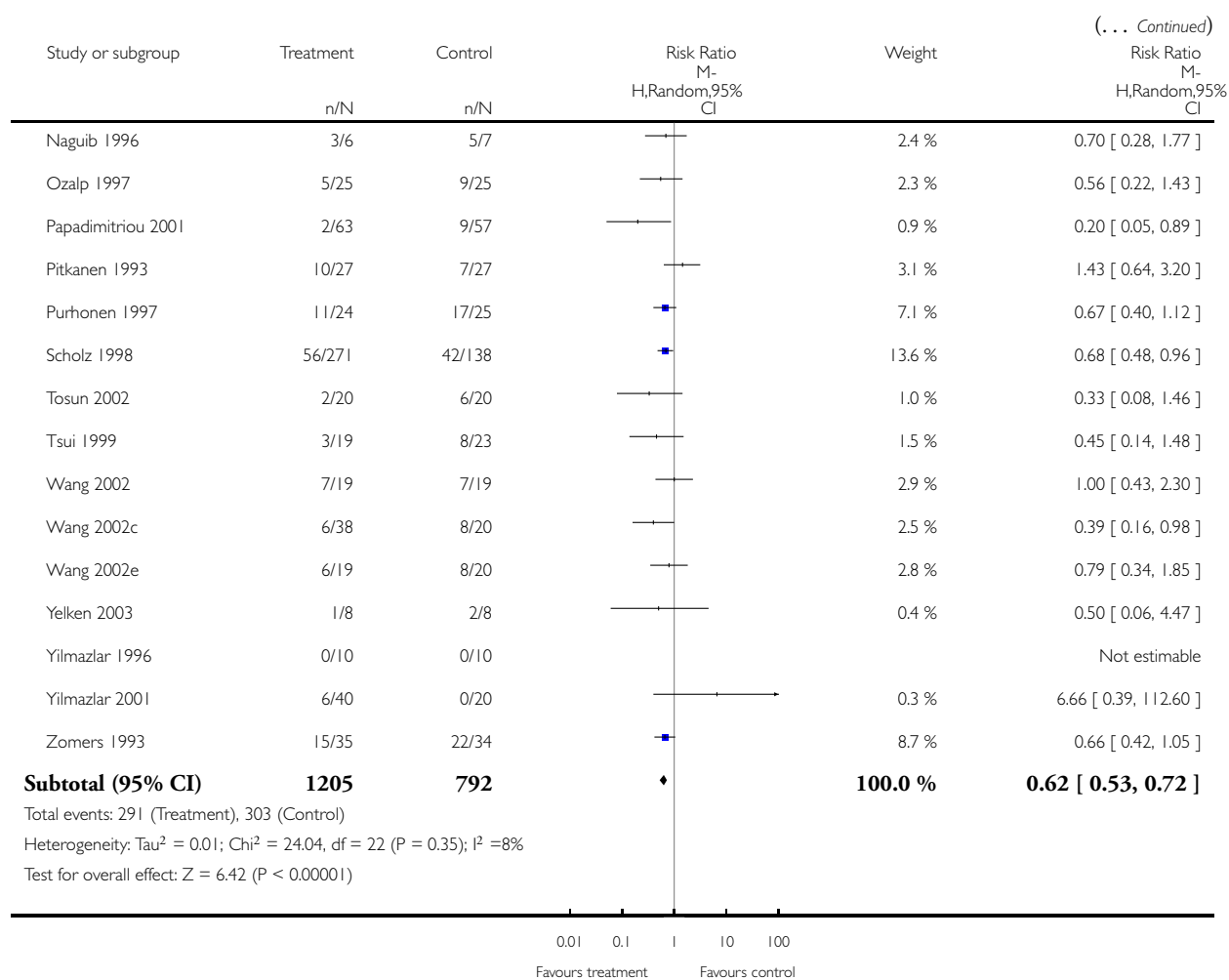
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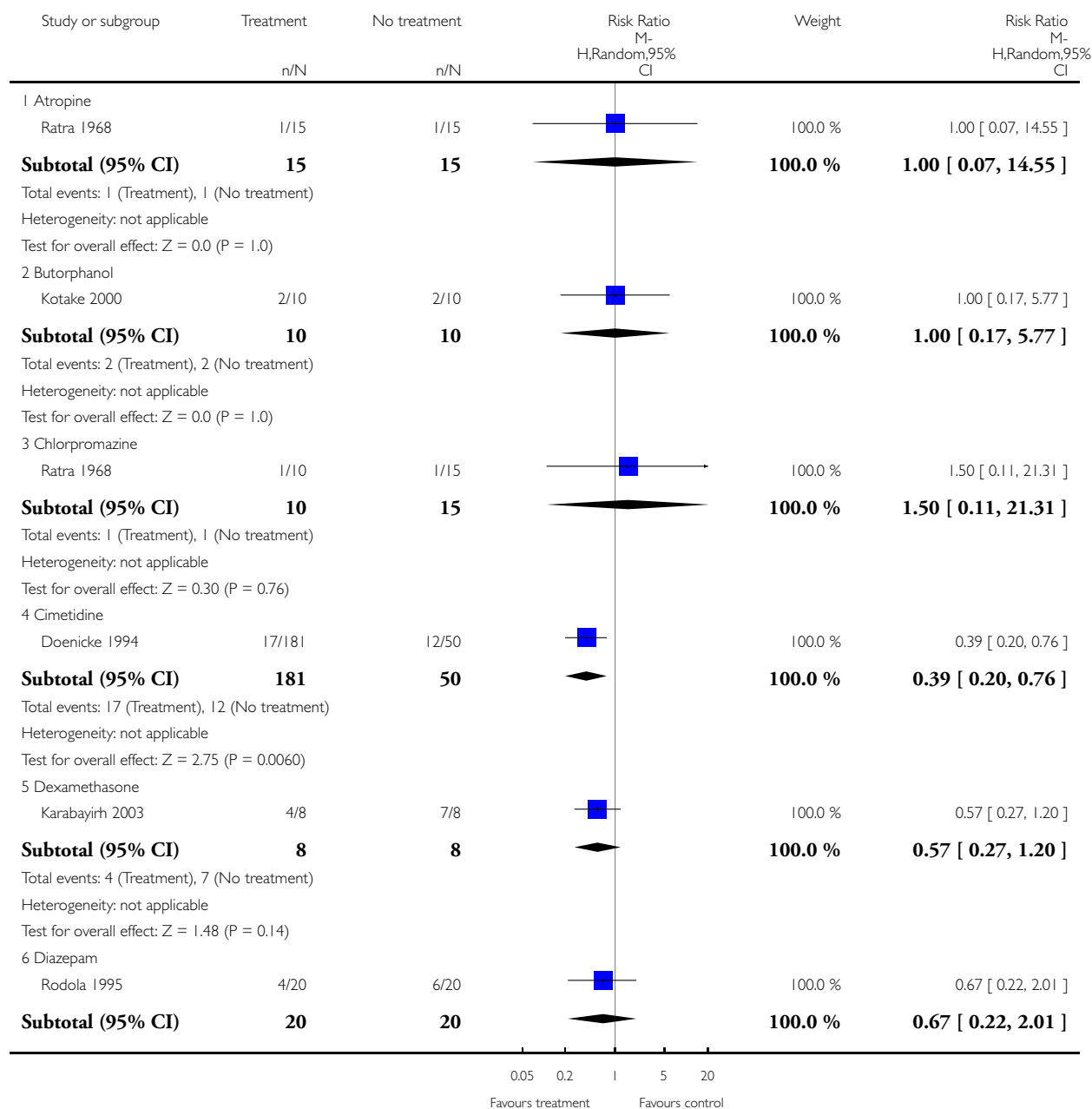


## Analysis 2.1. Comparison 2 PRIMARY ANALYSIS: No Treatment versus Drug, Outcome 1 Nausea.

Review: Drugs for preventing postoperative nausea and vomiting

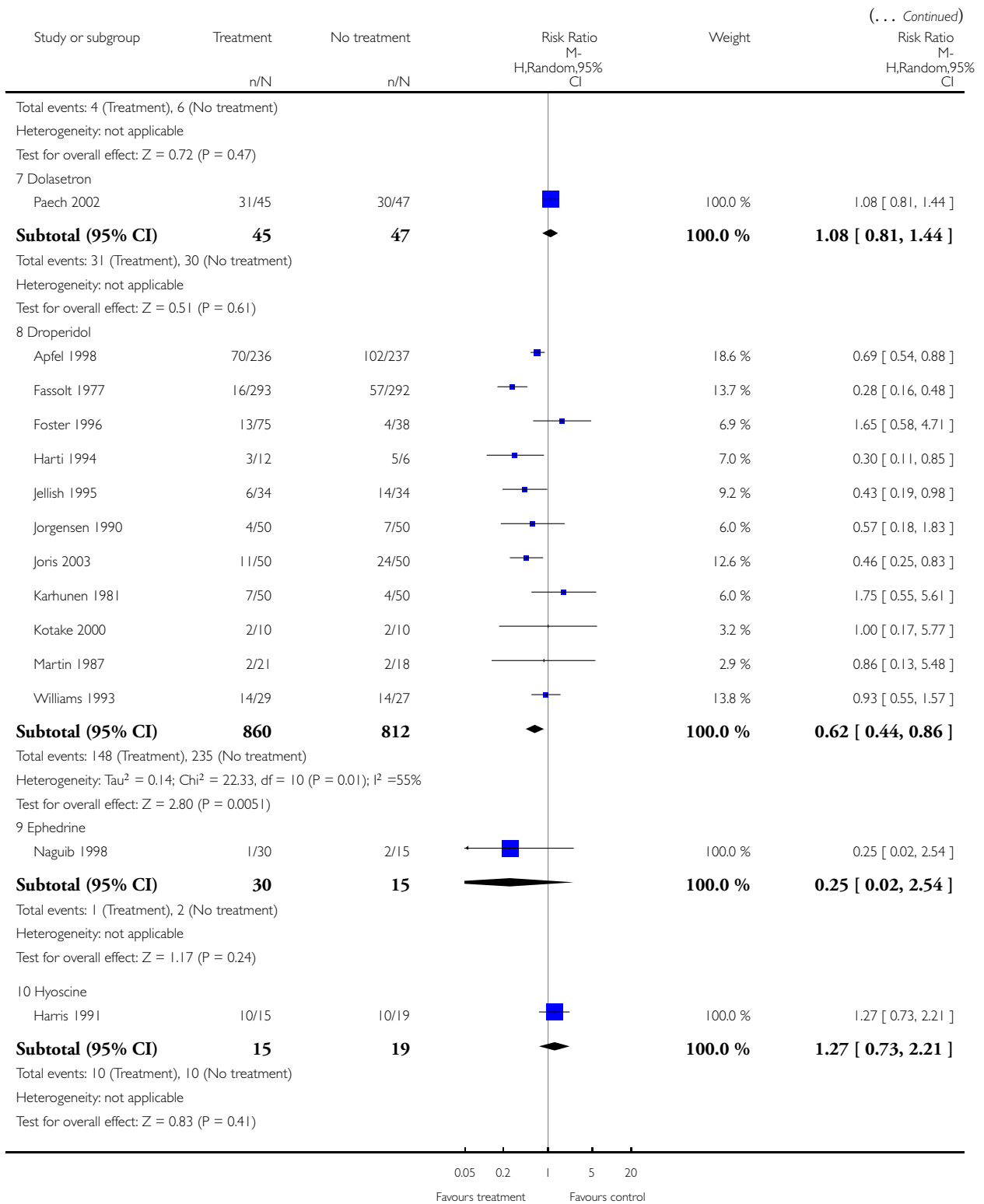
Comparison: 2 PRIMARY ANALYSIS: No Treatment versus Drug

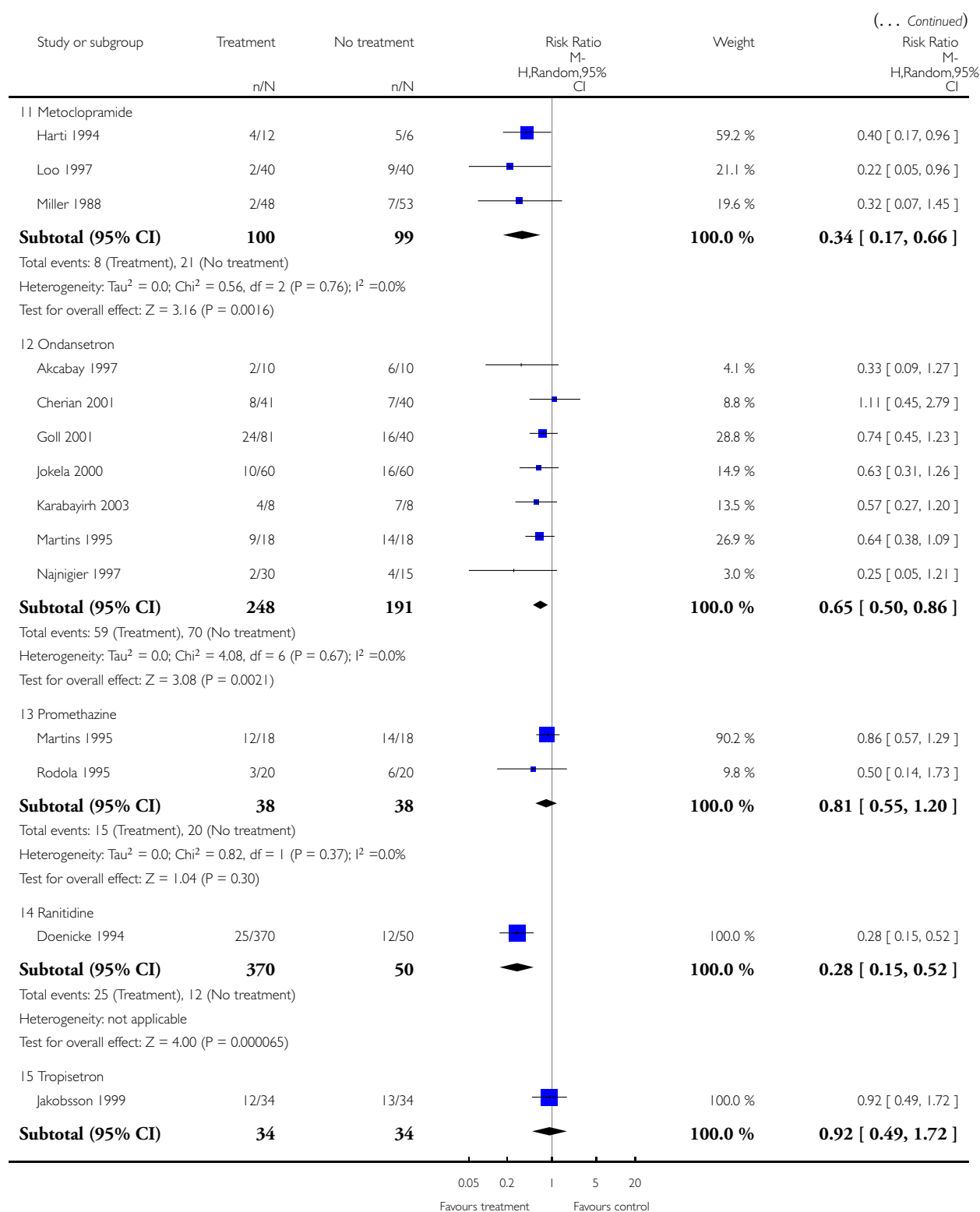
Outcome: 1 Nausea

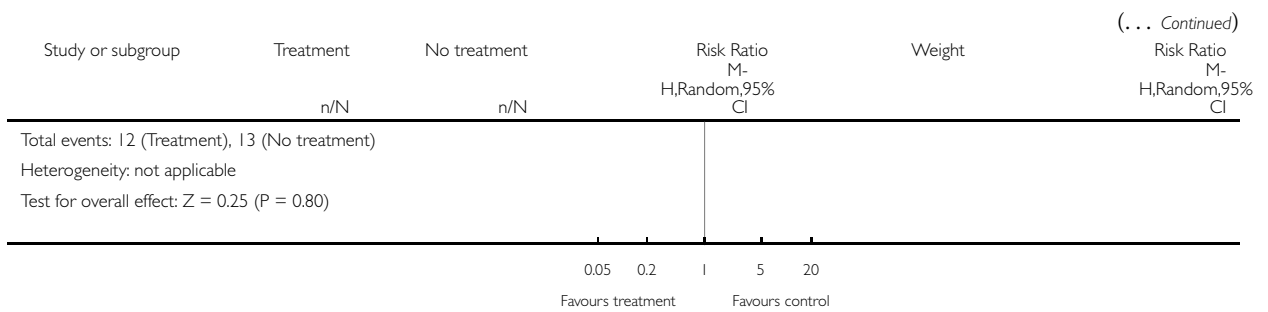


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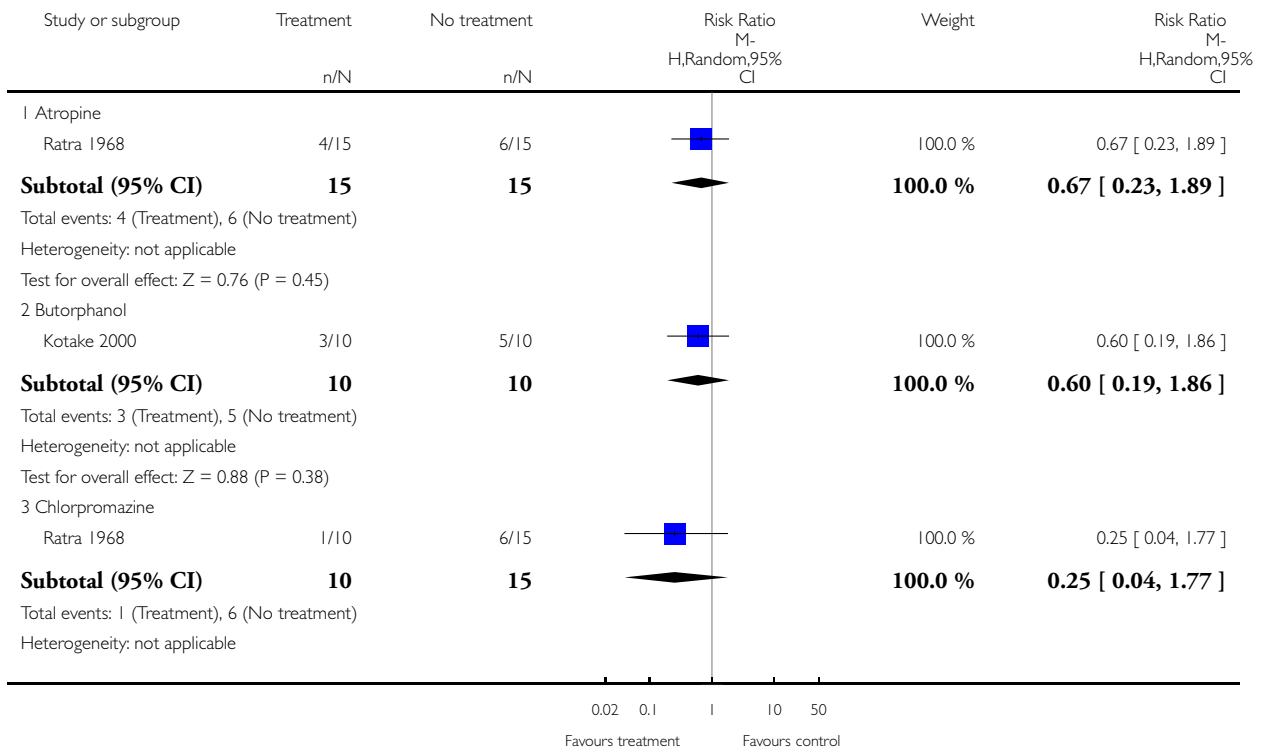


## Analysis 2.2. Comparison 2 PRIMARY ANALYSIS: No Treatment versus Drug, Outcome 2 Vomiting.

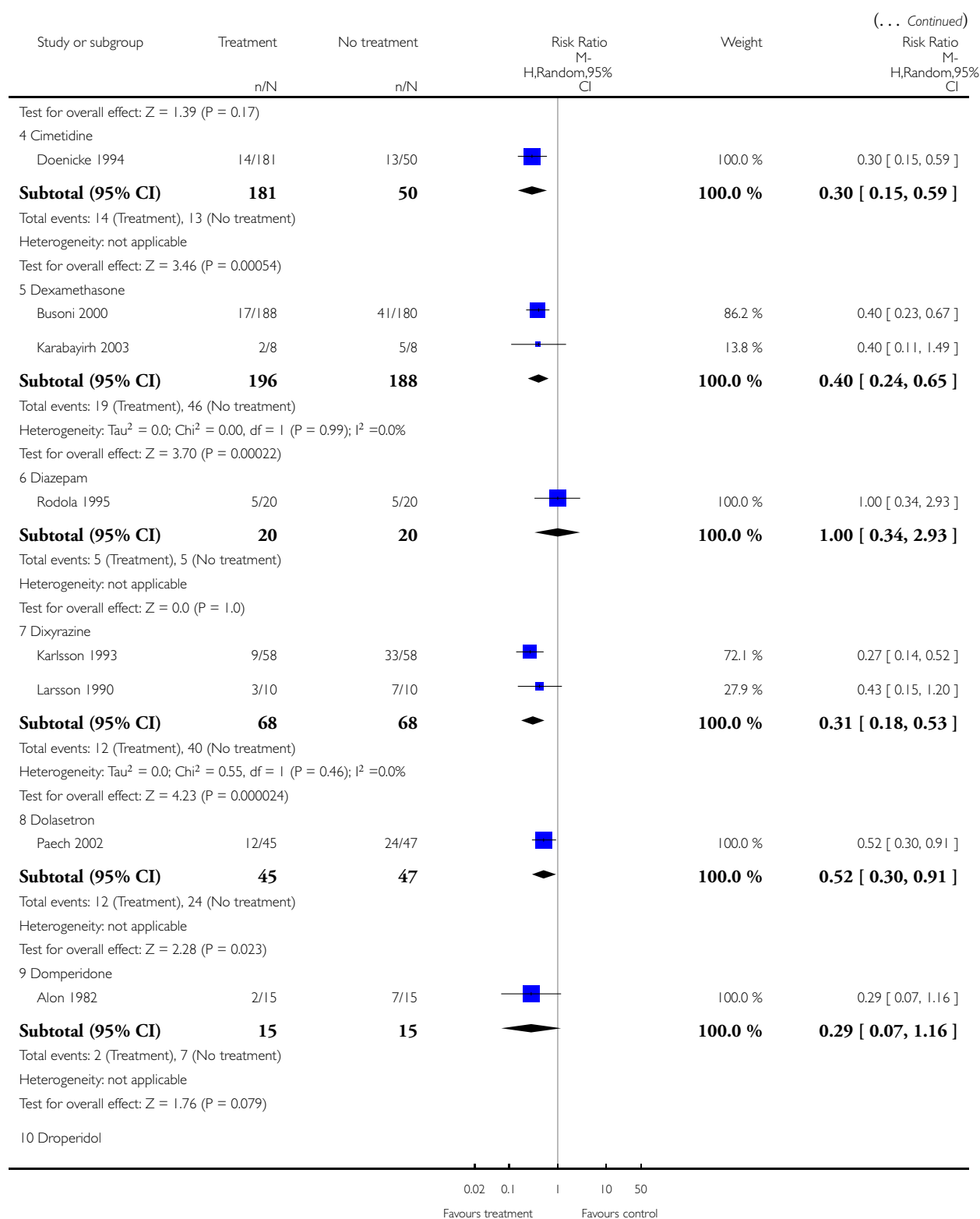
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 2 PRIMARY ANALYSIS: No Treatment versus Drug

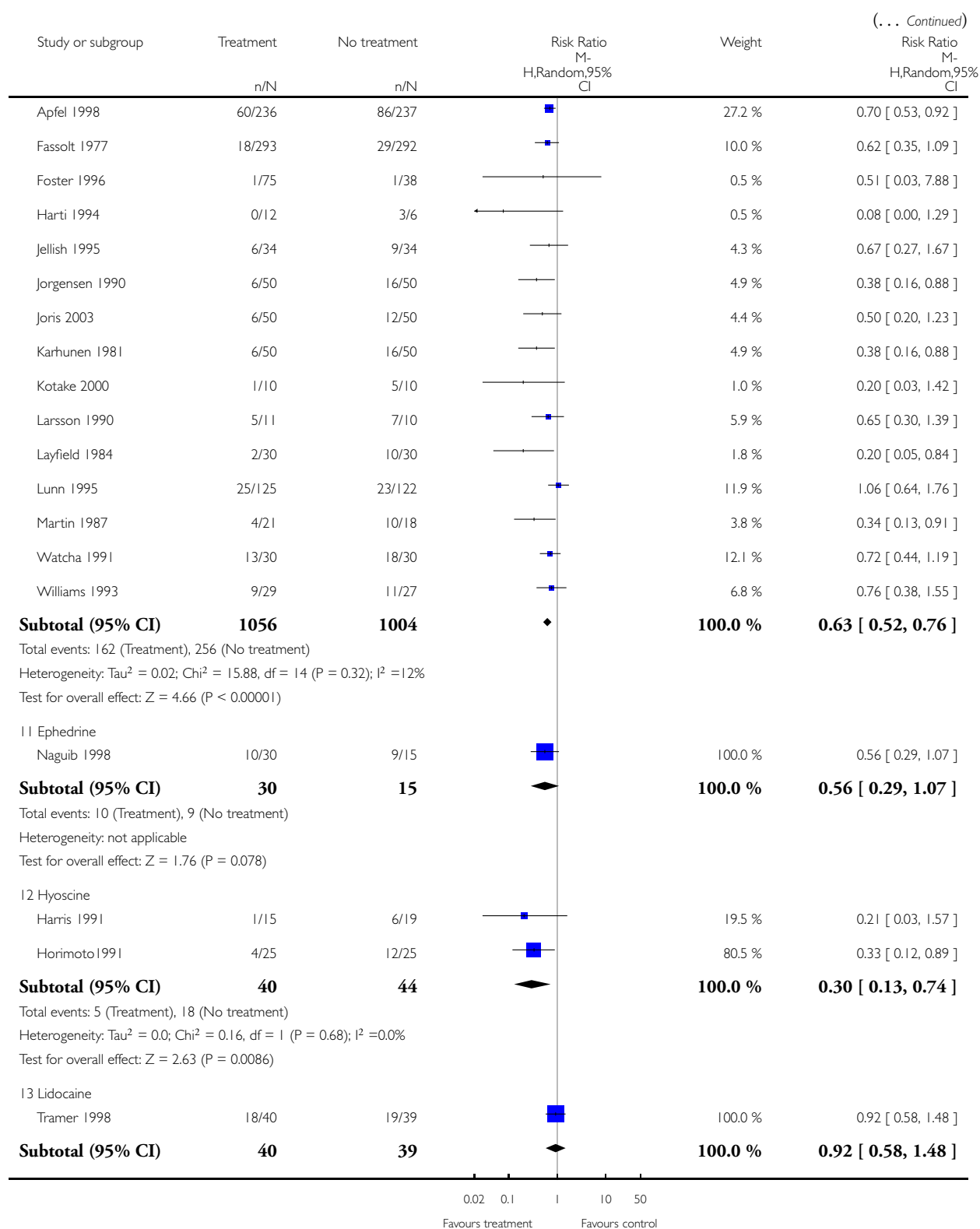
Outcome: 2 Vomiting



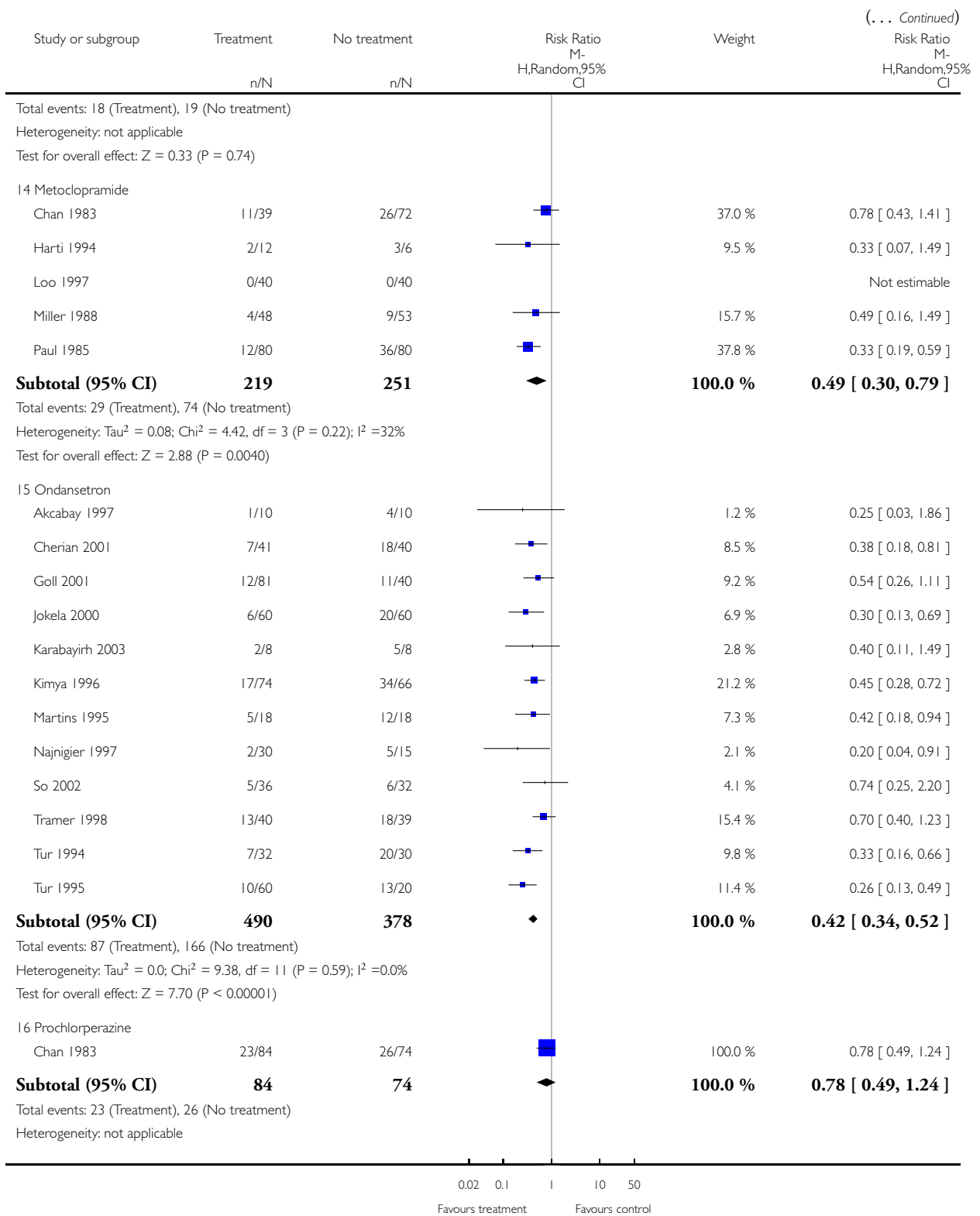
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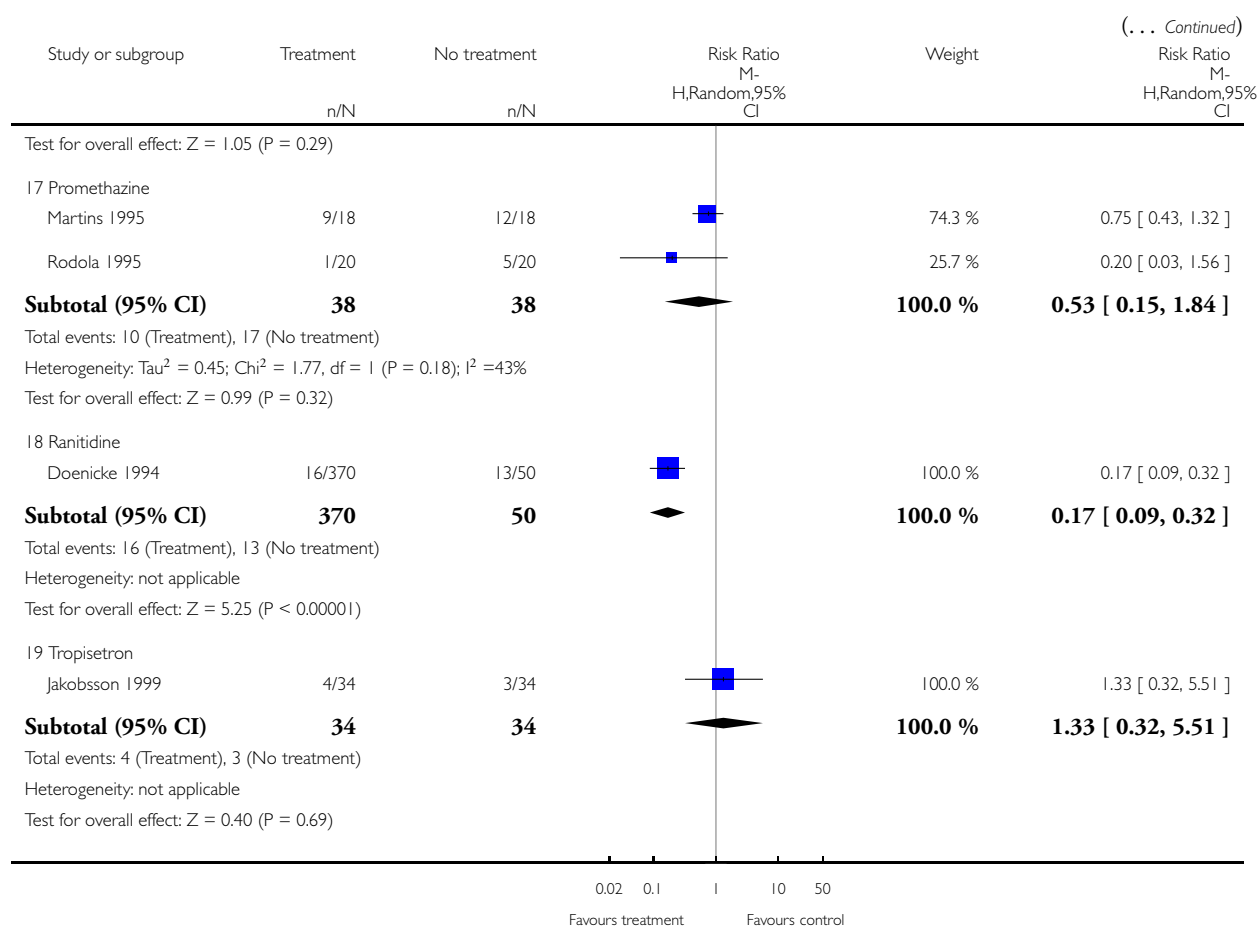


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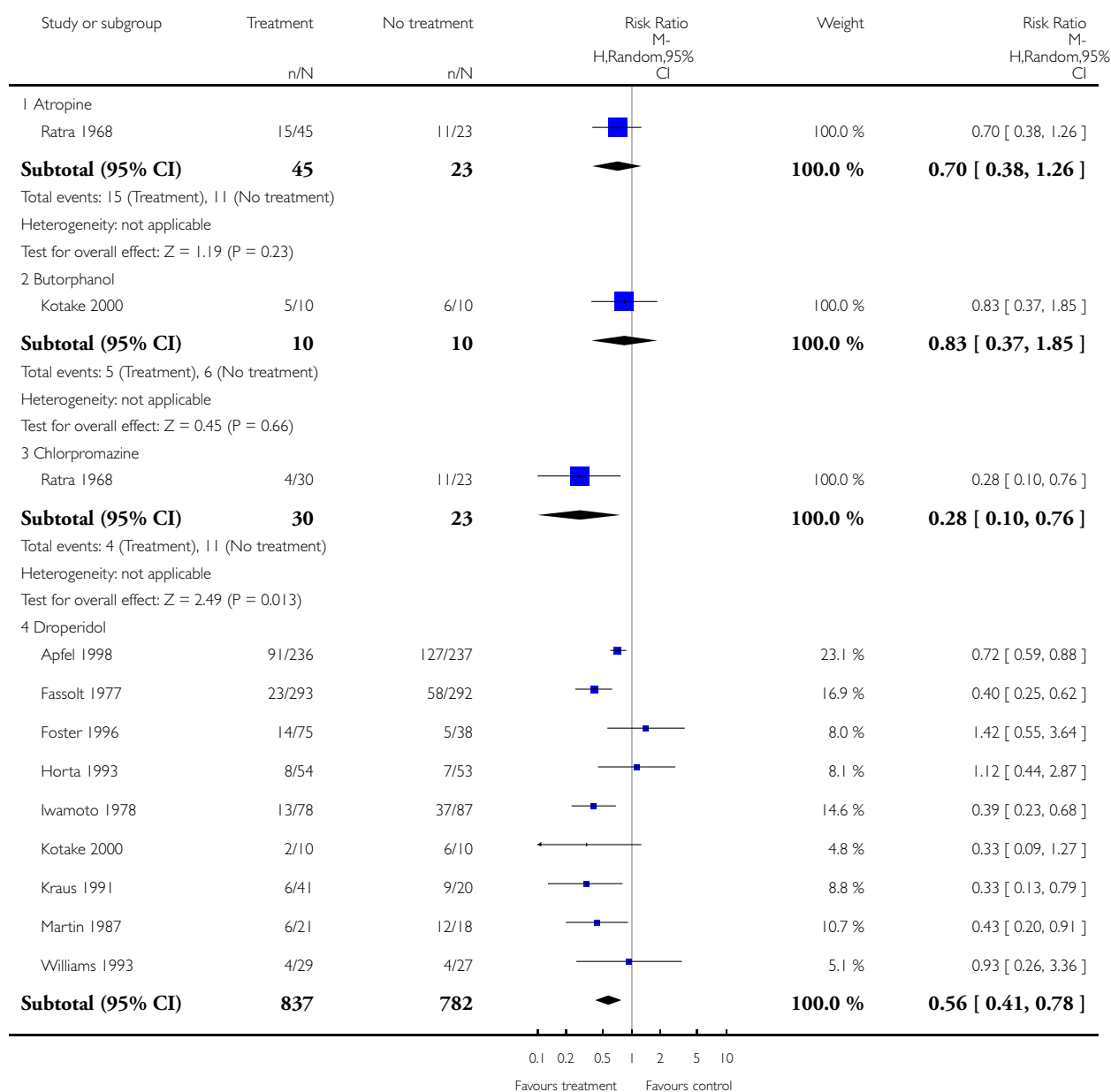


### Analysis 2.3. Comparison 2 PRIMARY ANALYSIS: No Treatment versus Drug, Outcome 3 Nausea or Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

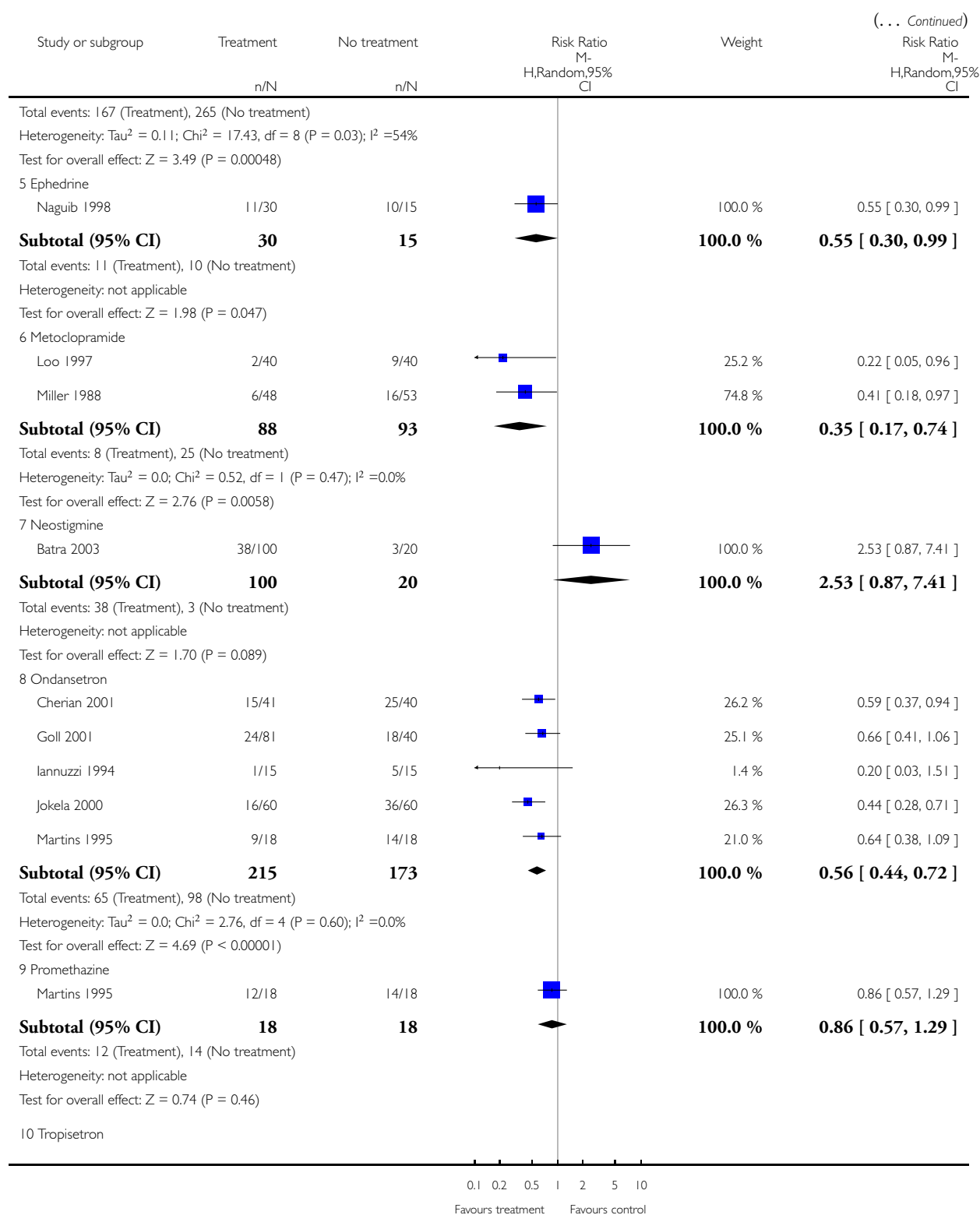
Comparison: 2 PRIMARY ANALYSIS: No Treatment versus Drug

Outcome: 3 Nausea or Vomiting

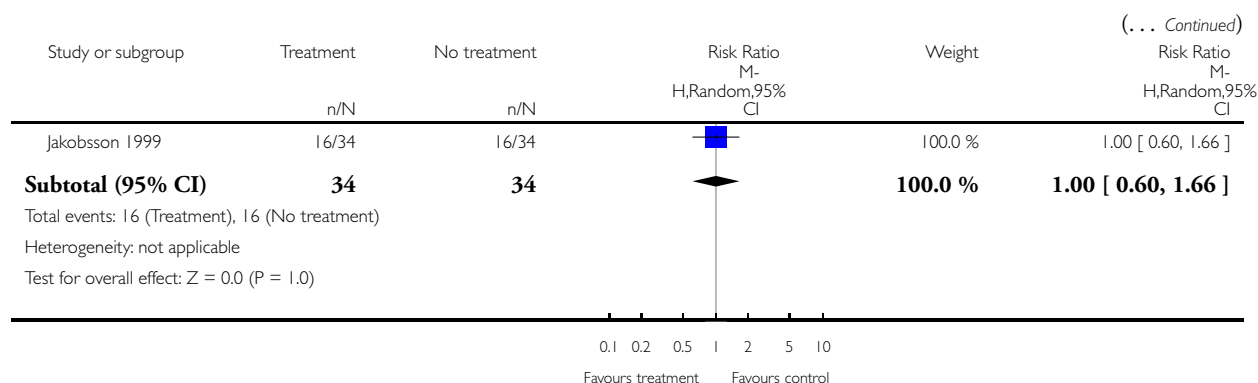


(Continued ...)





(Continued ...)

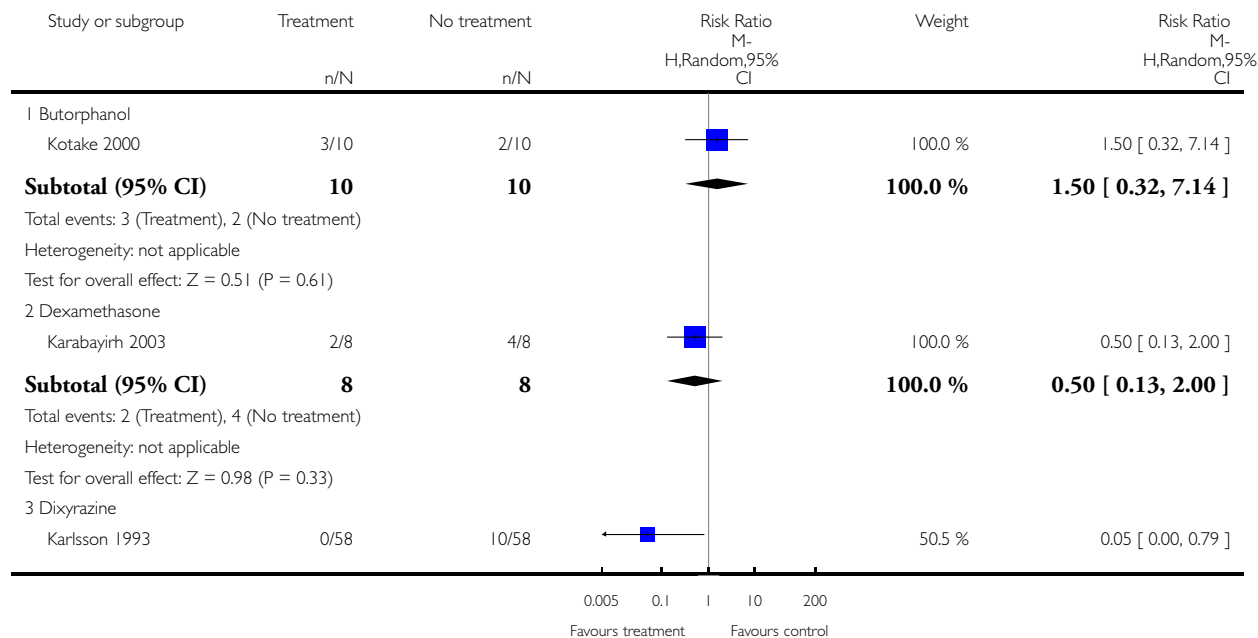


#### Analysis 2.4. Comparison 2 PRIMARY ANALYSIS: No Treatment versus Drug, Outcome 4 Rescue antiemetic.

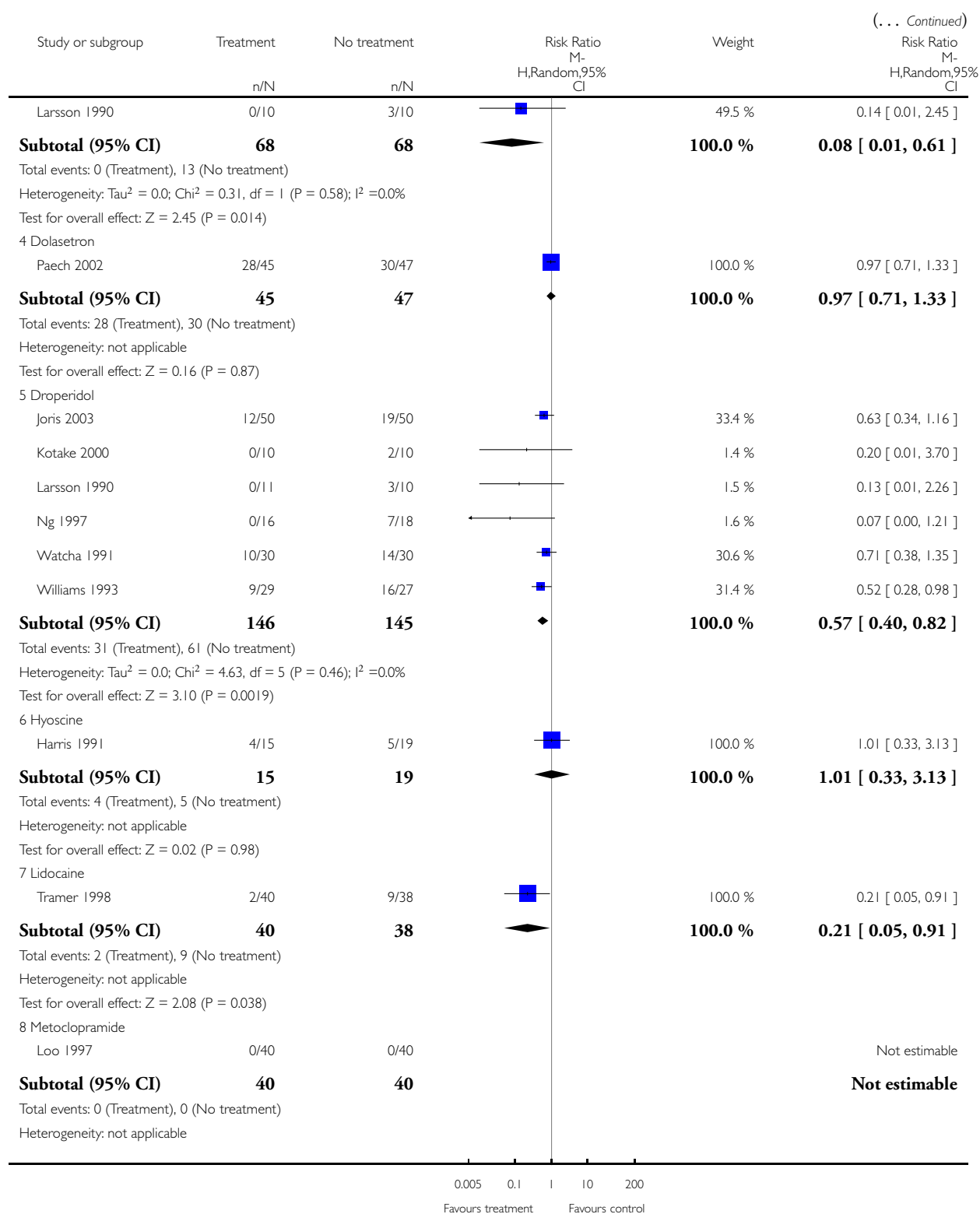
Review: Drugs for preventing postoperative nausea and vomiting

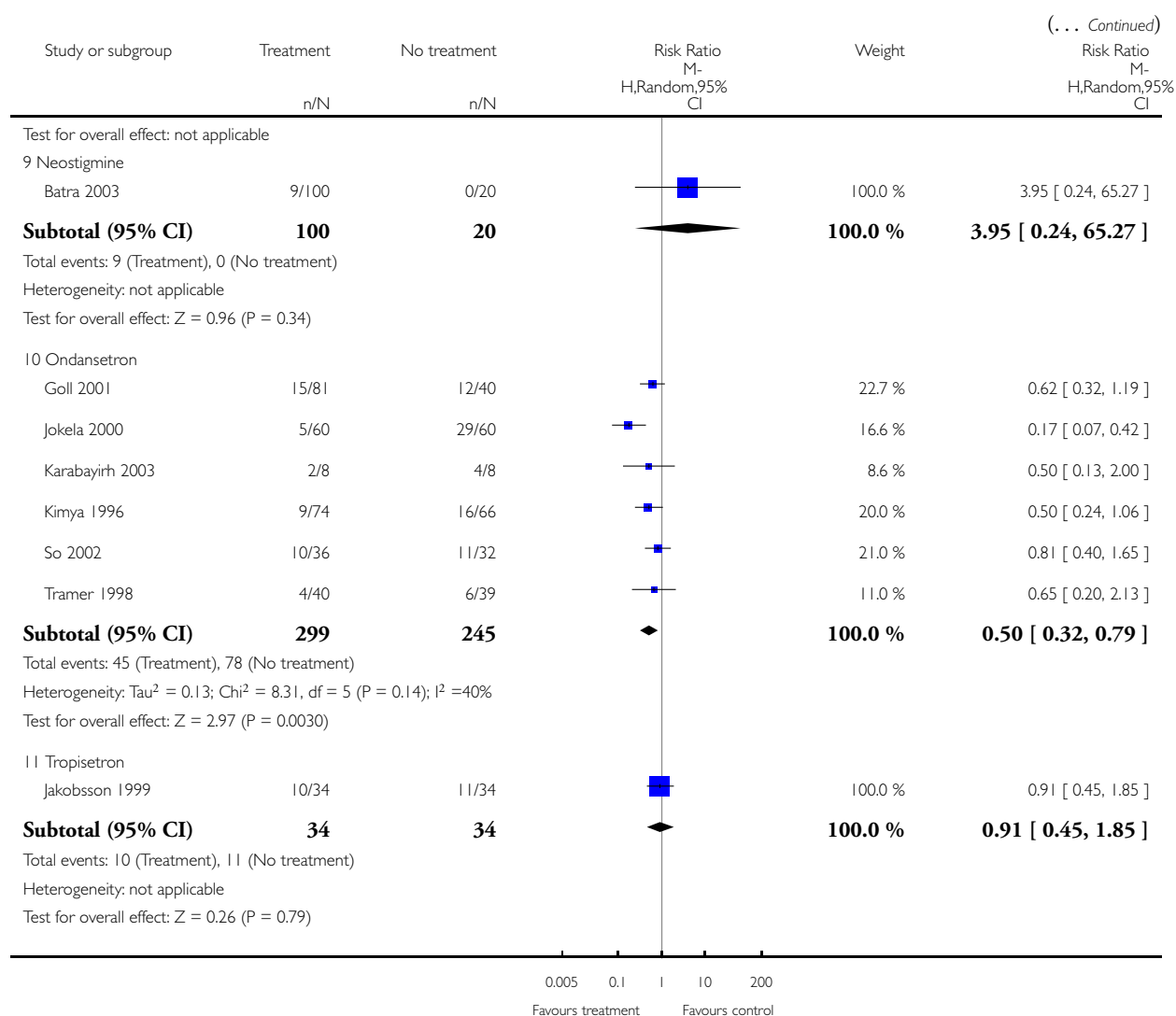
Comparison: 2 PRIMARY ANALYSIS: No Treatment versus Drug

Outcome: 4 Rescue antiemetic



(Continued ...)



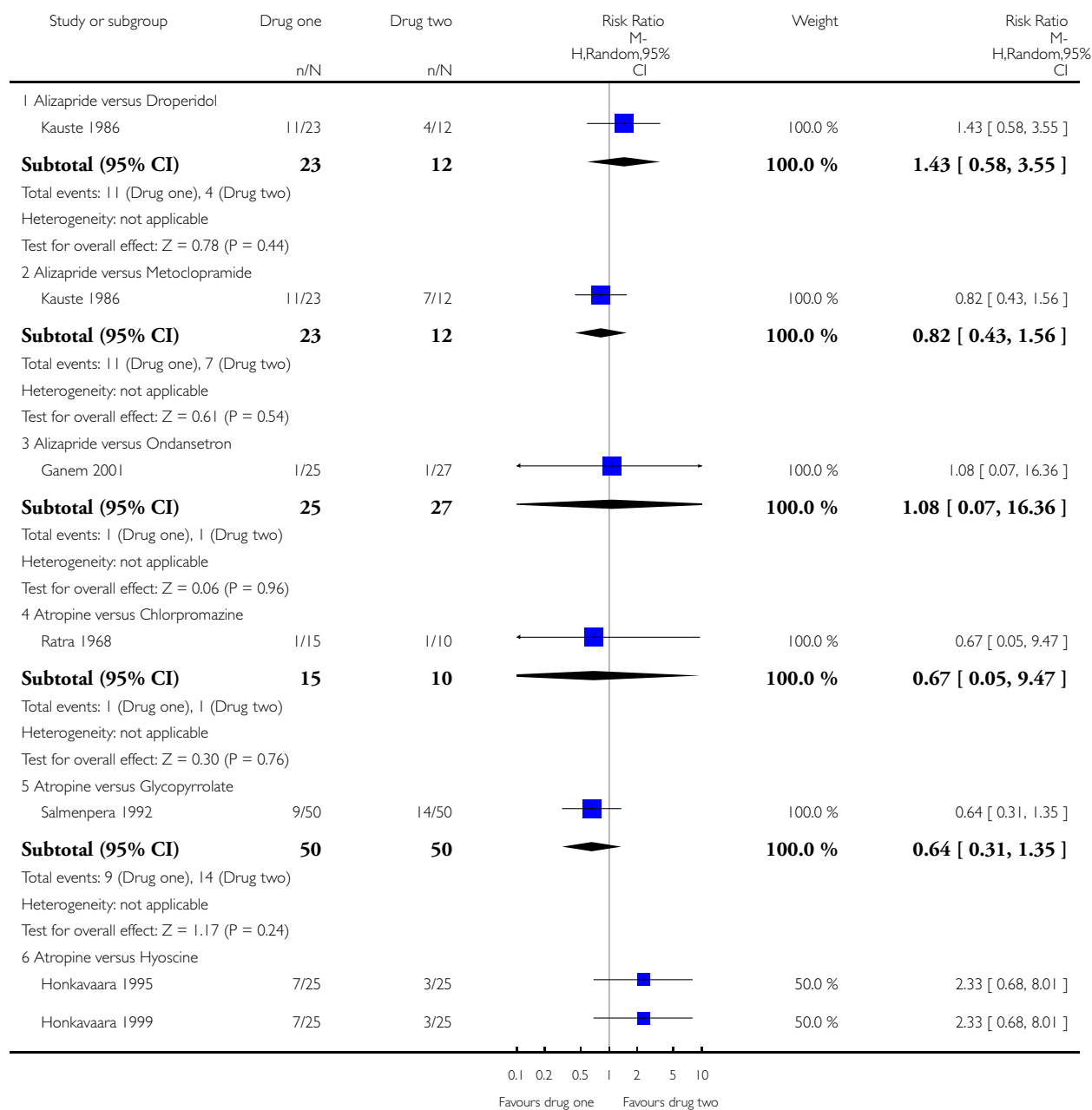


### Analysis 3.1. Comparison 3 PRIMARY ANALYSIS: Drug versus Drug, Outcome 1 Nausea.

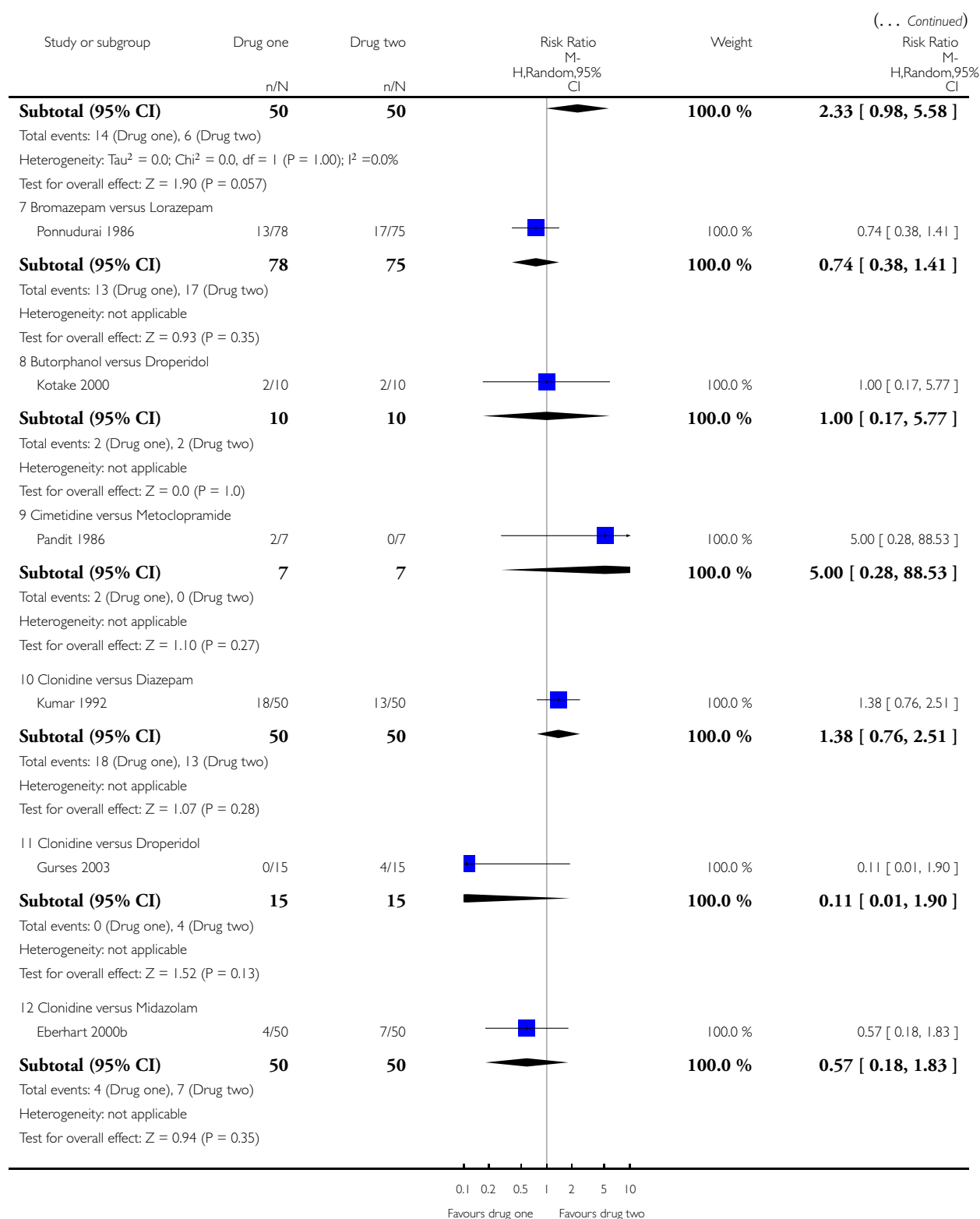
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 3 PRIMARY ANALYSIS: Drug versus Drug

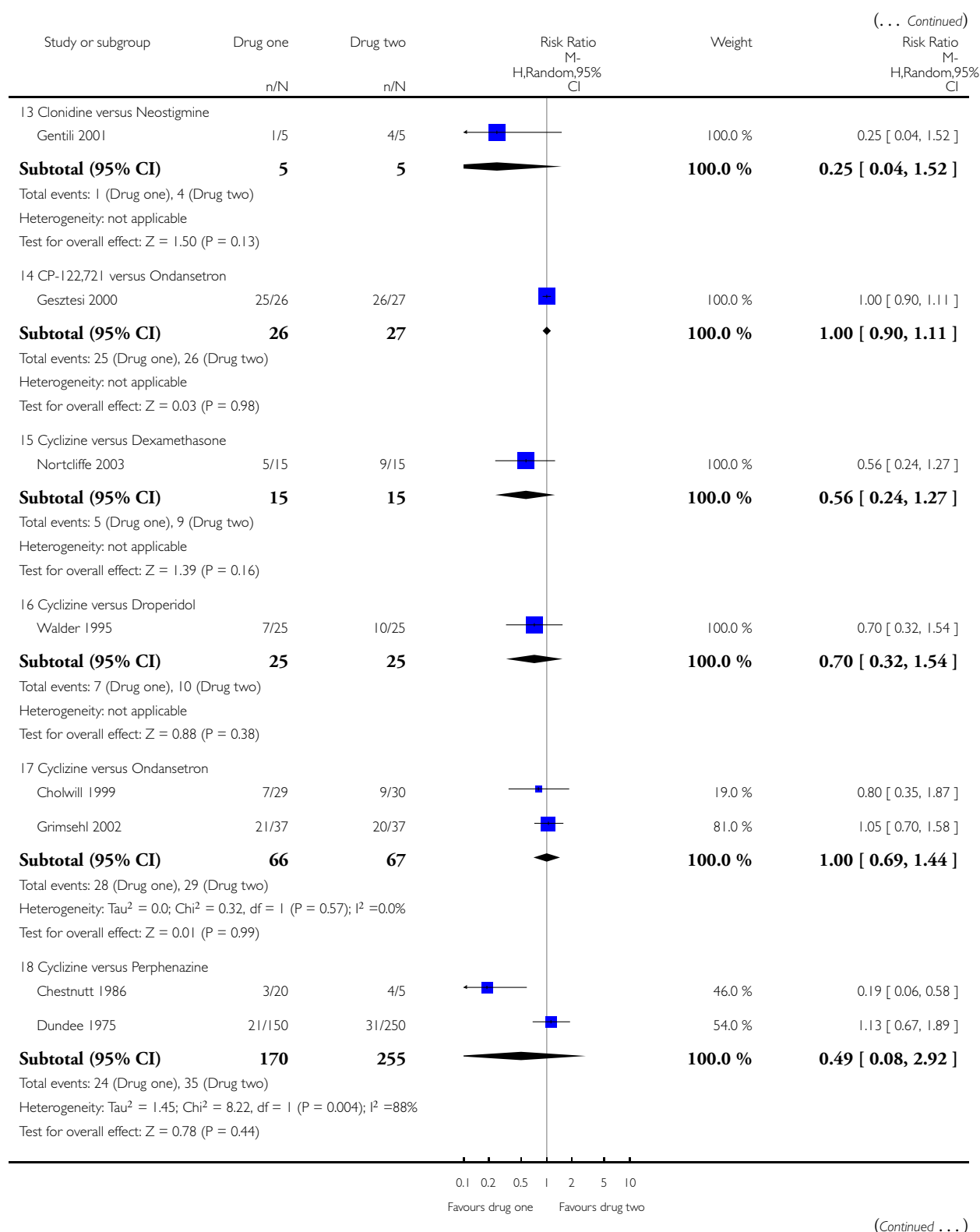
Outcome: 1 Nausea

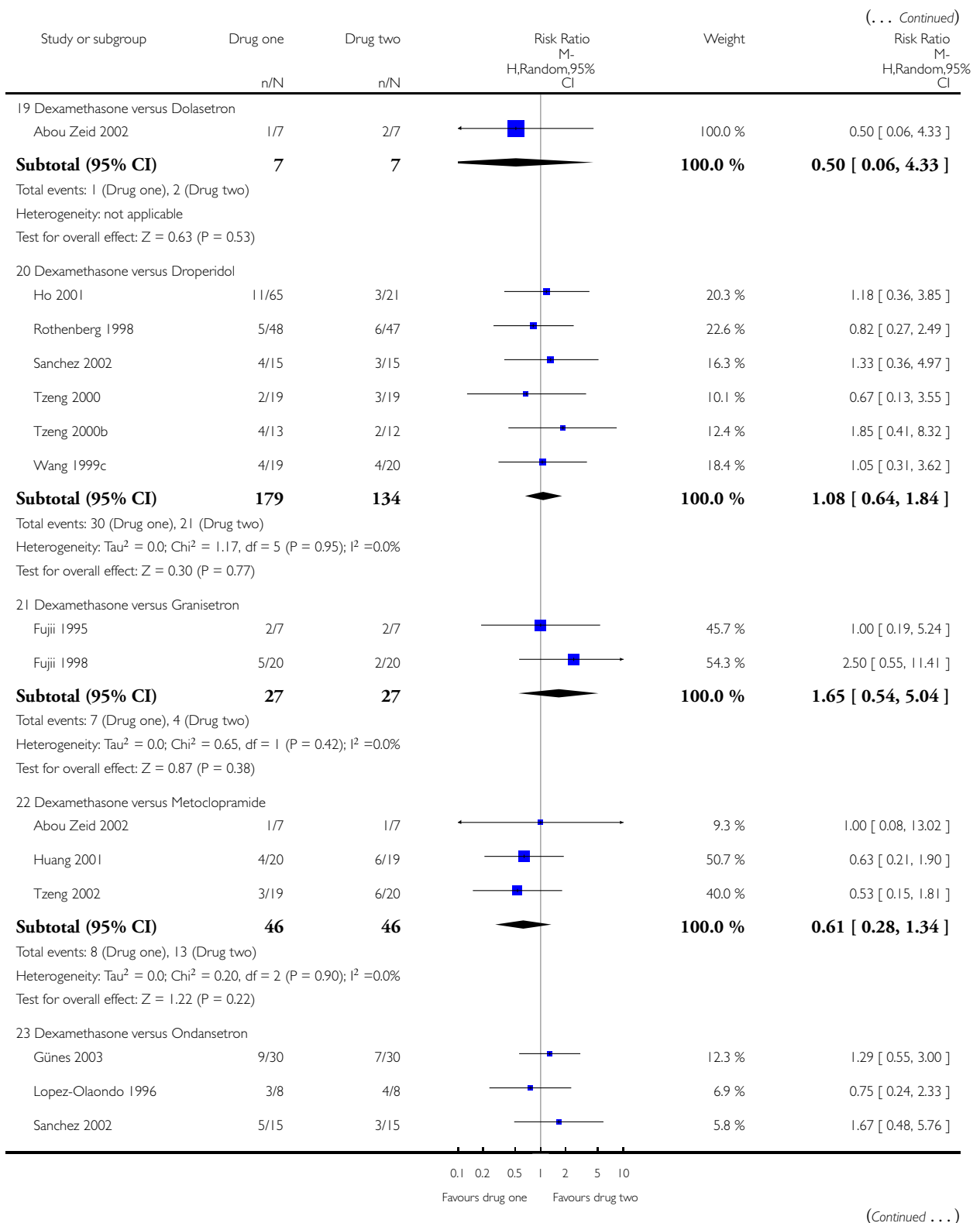


(Continued ...)

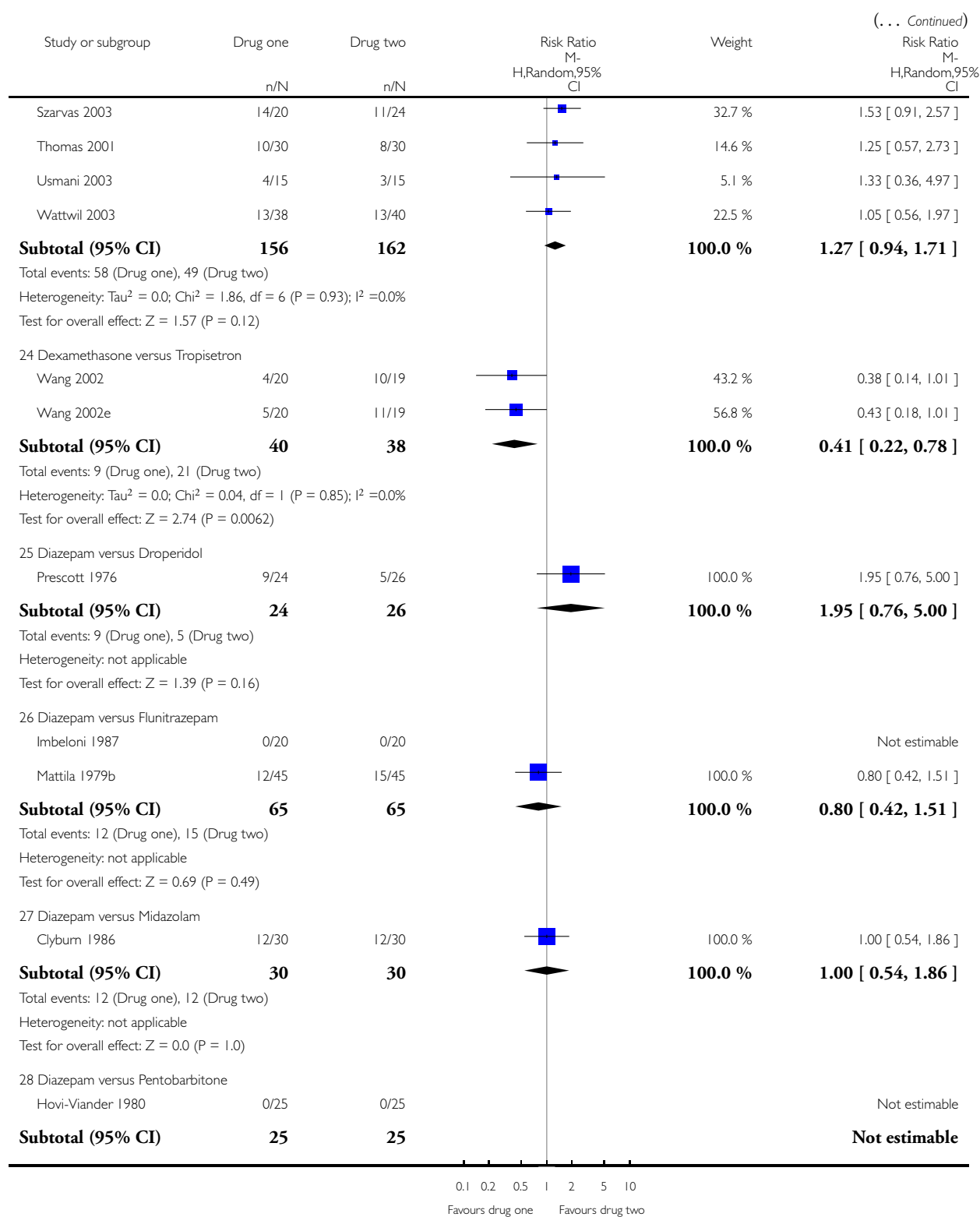


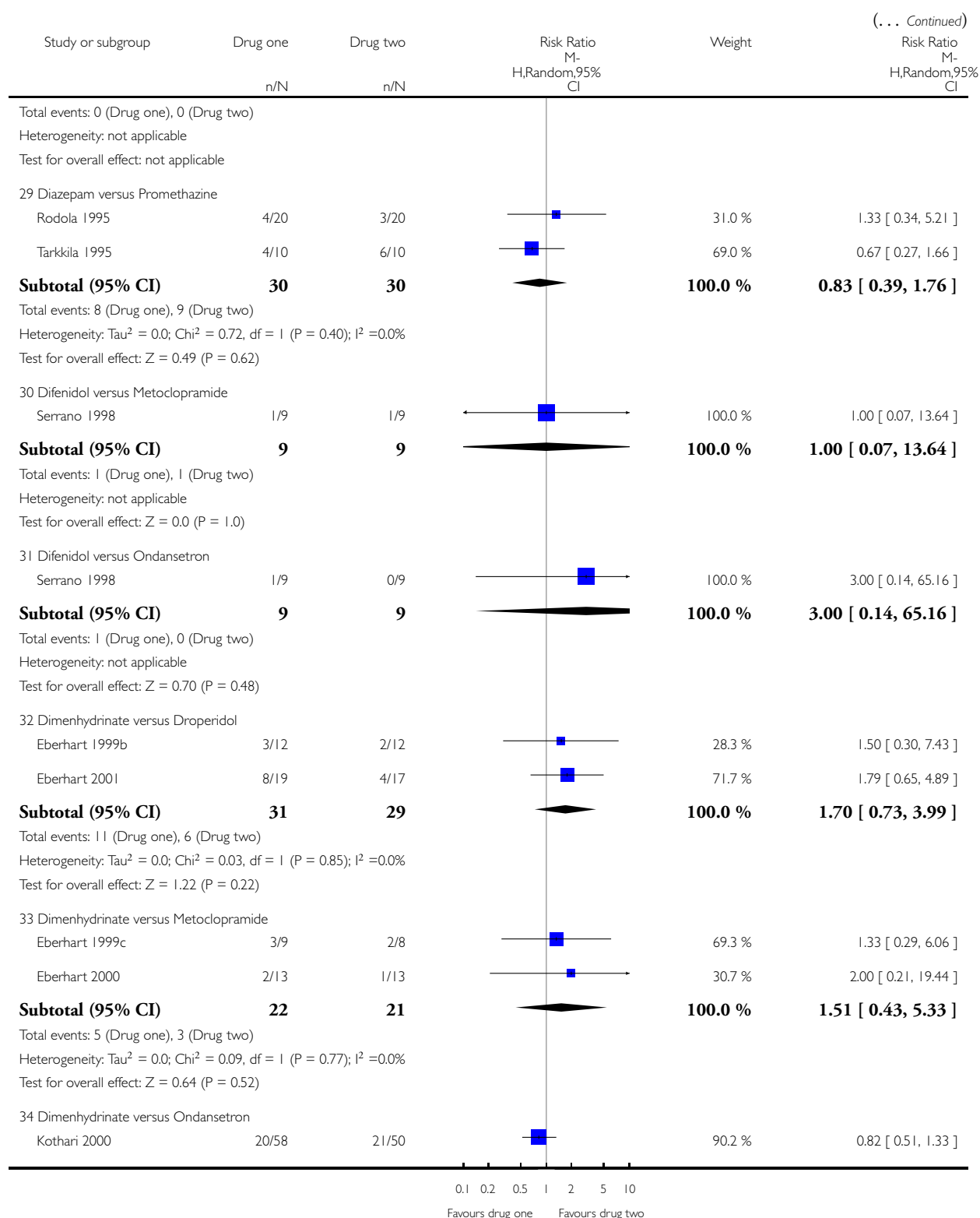
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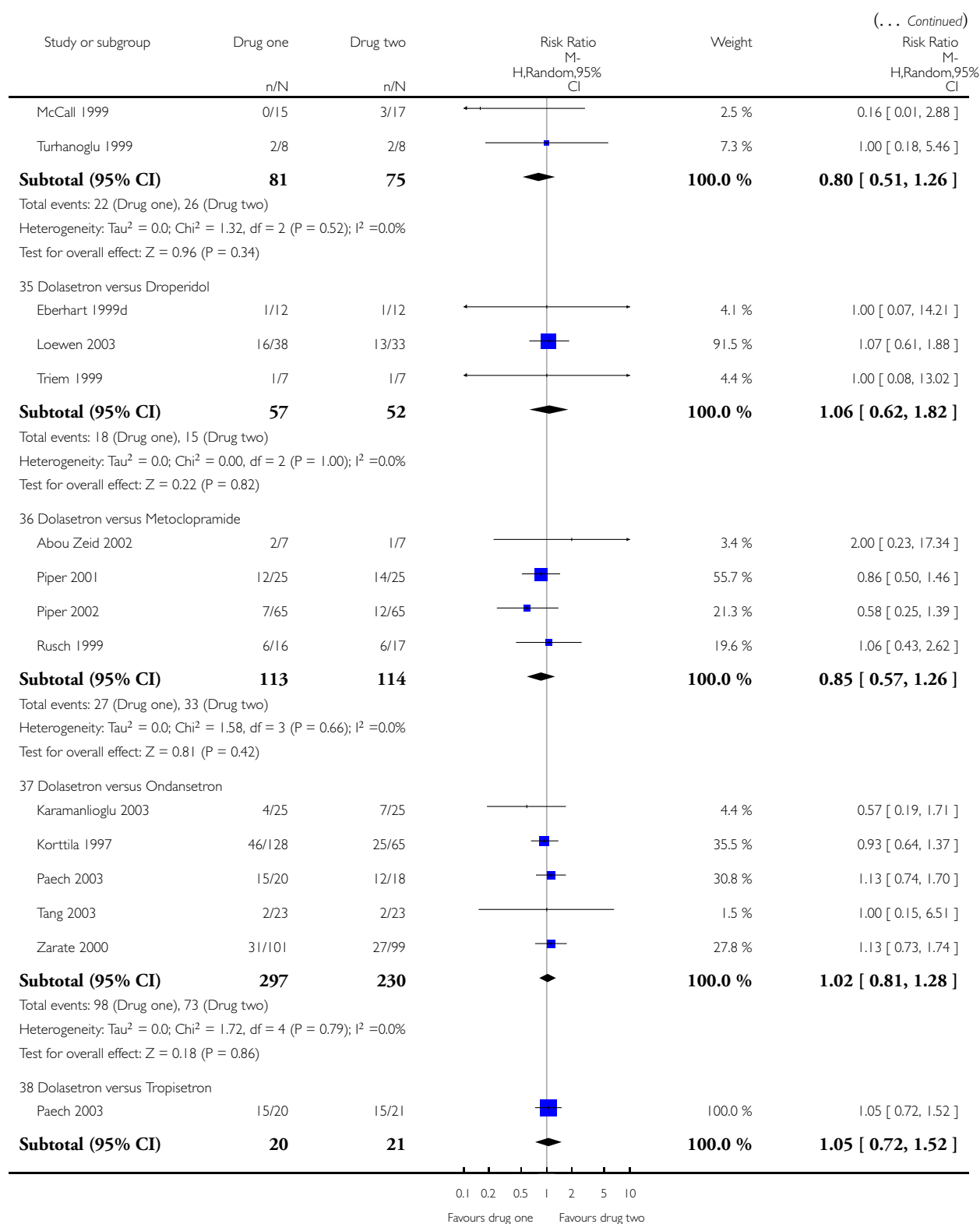


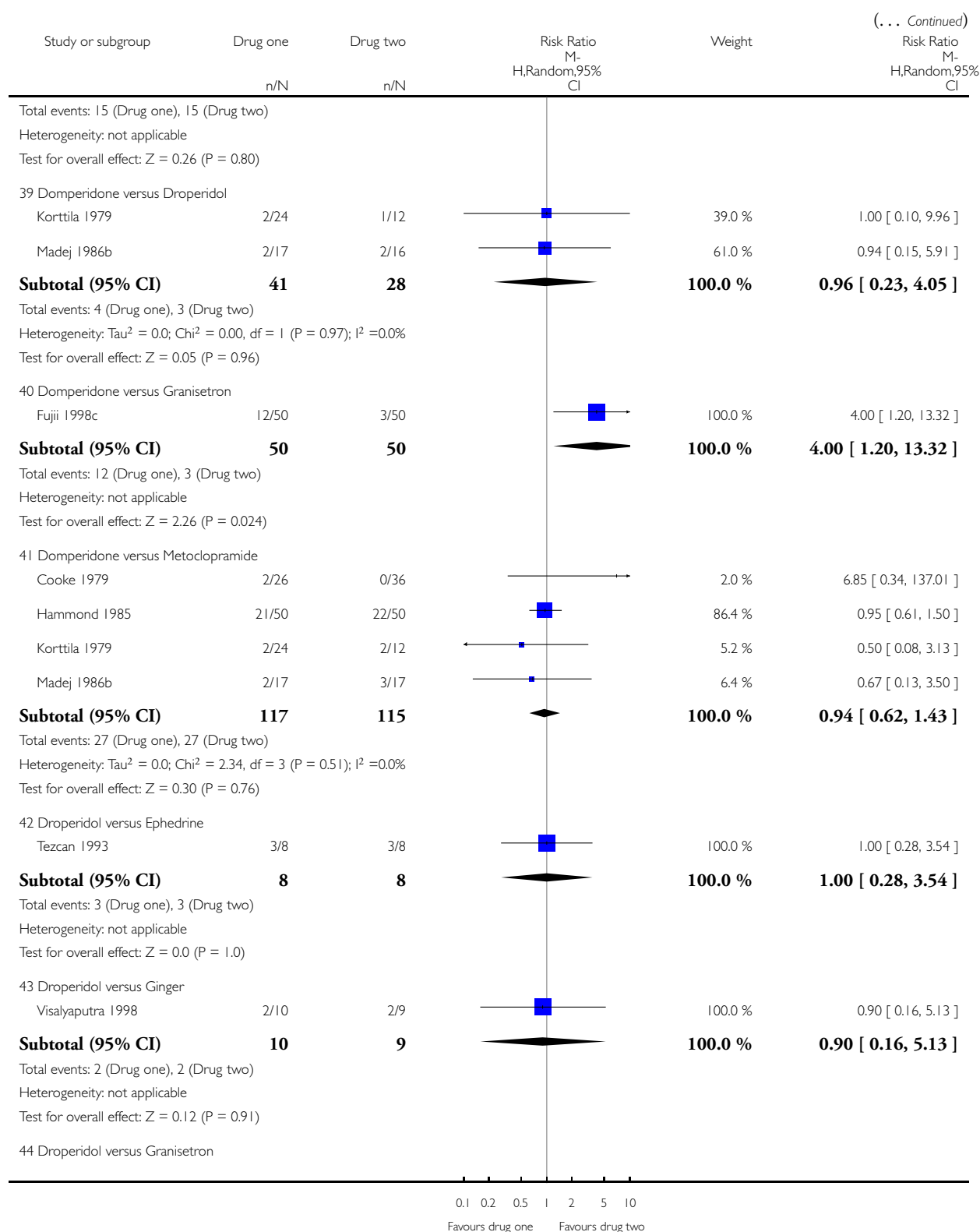




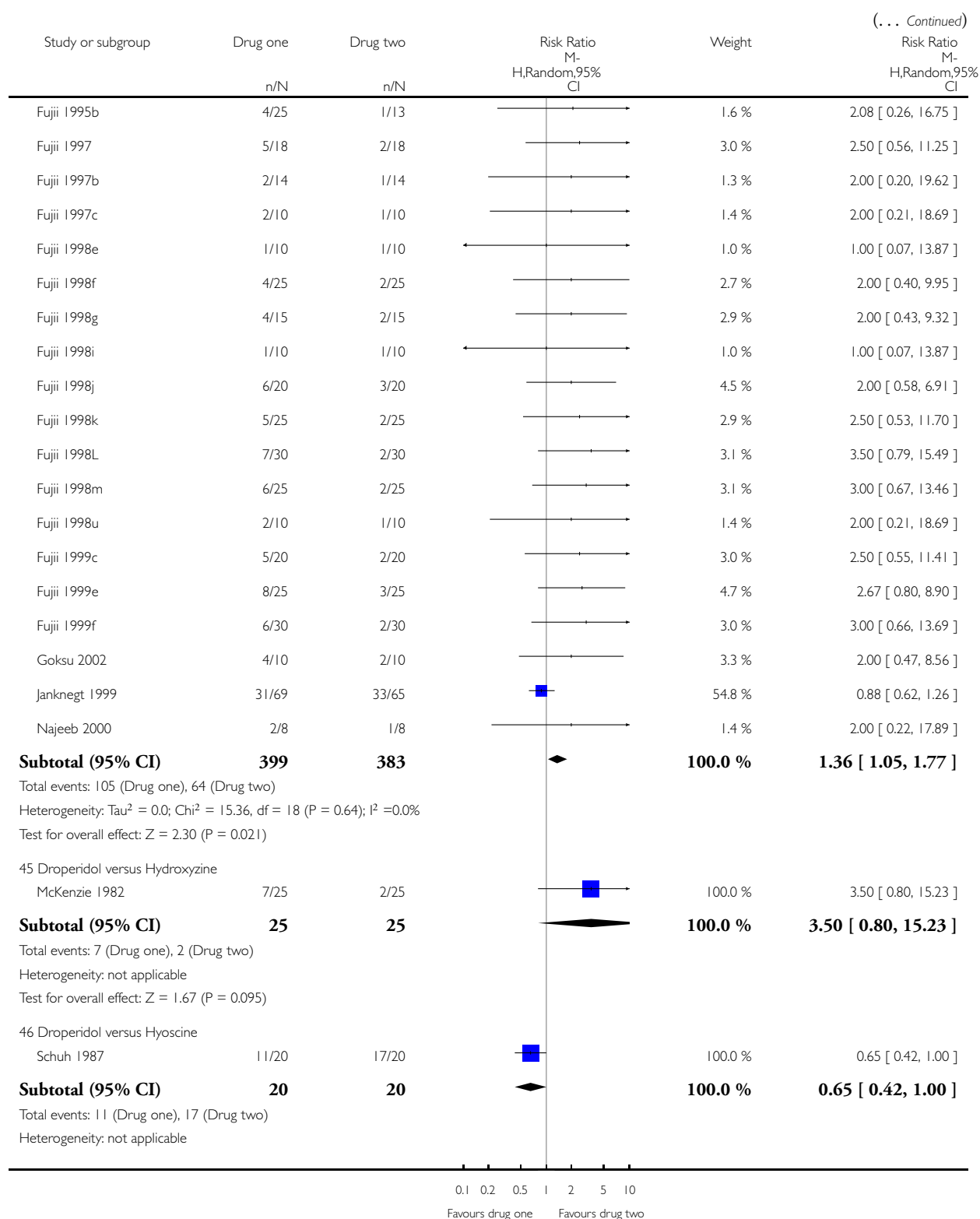


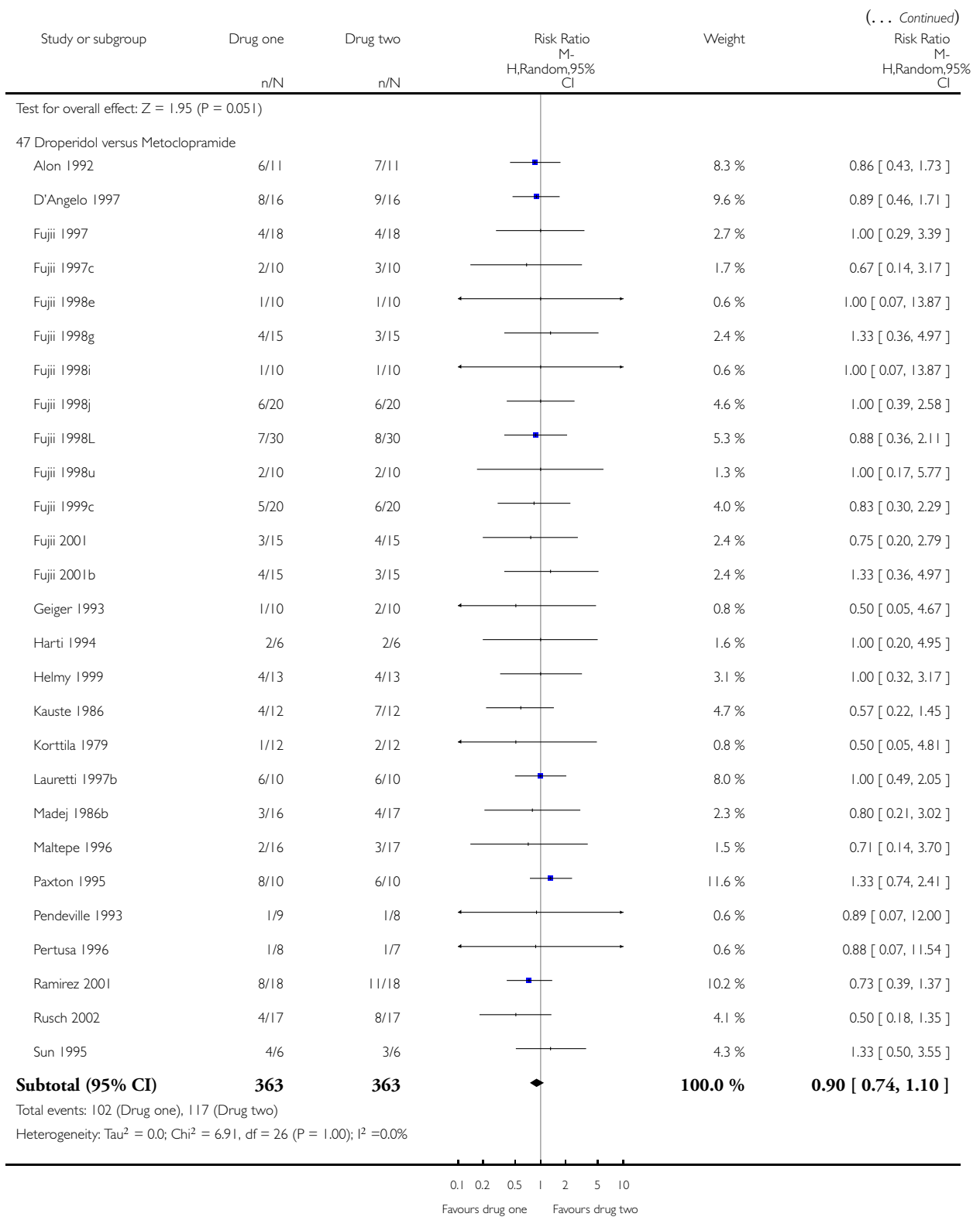


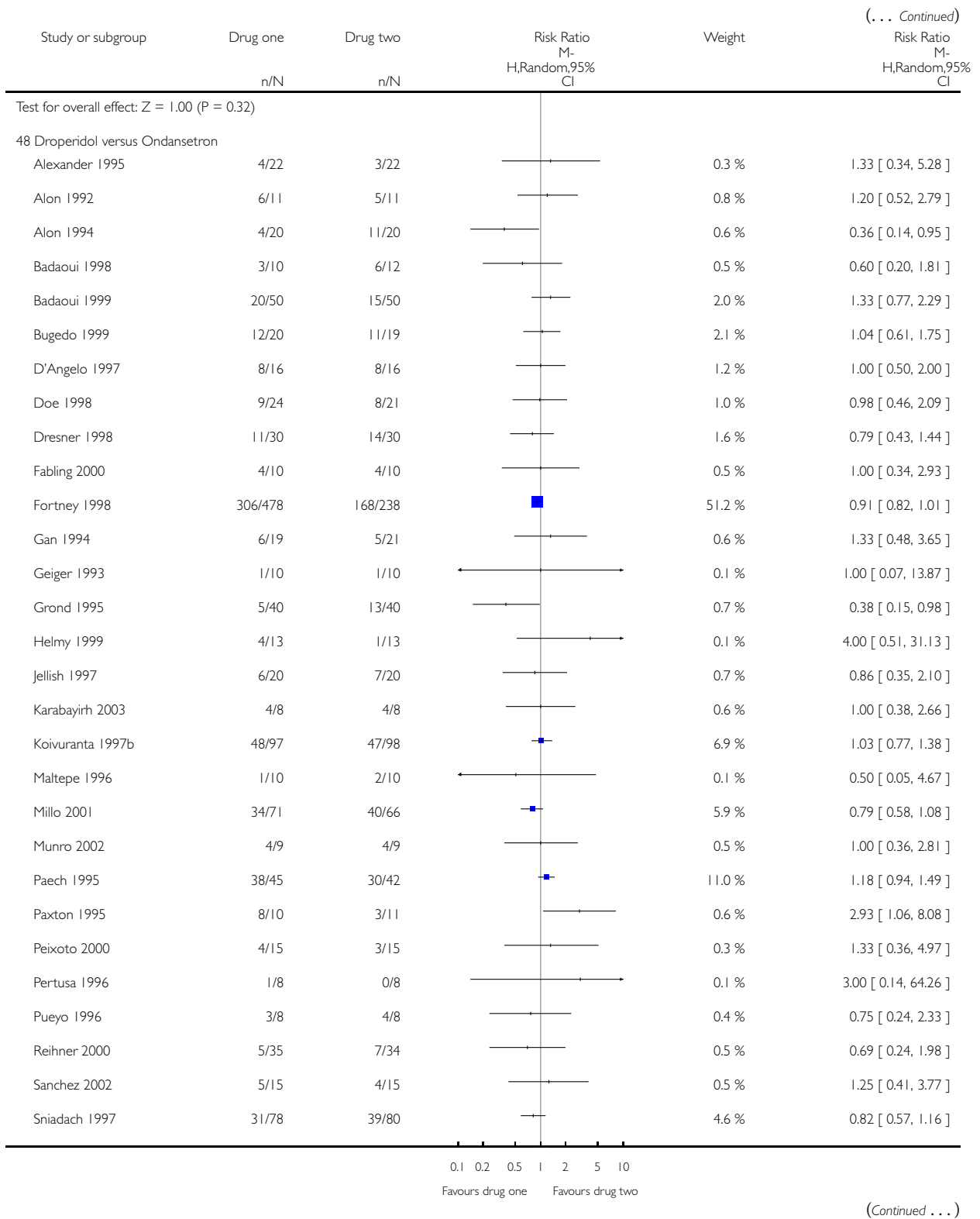


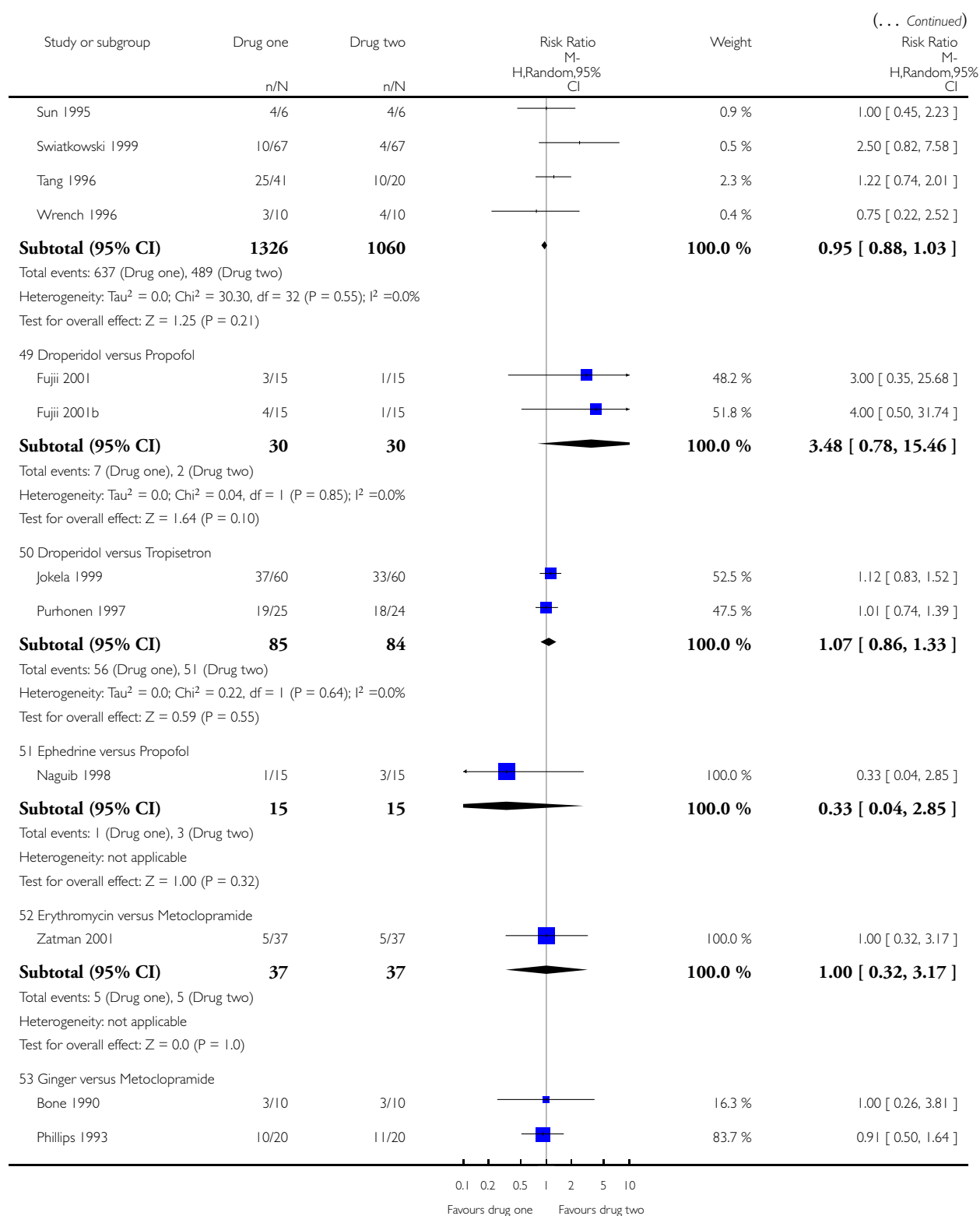


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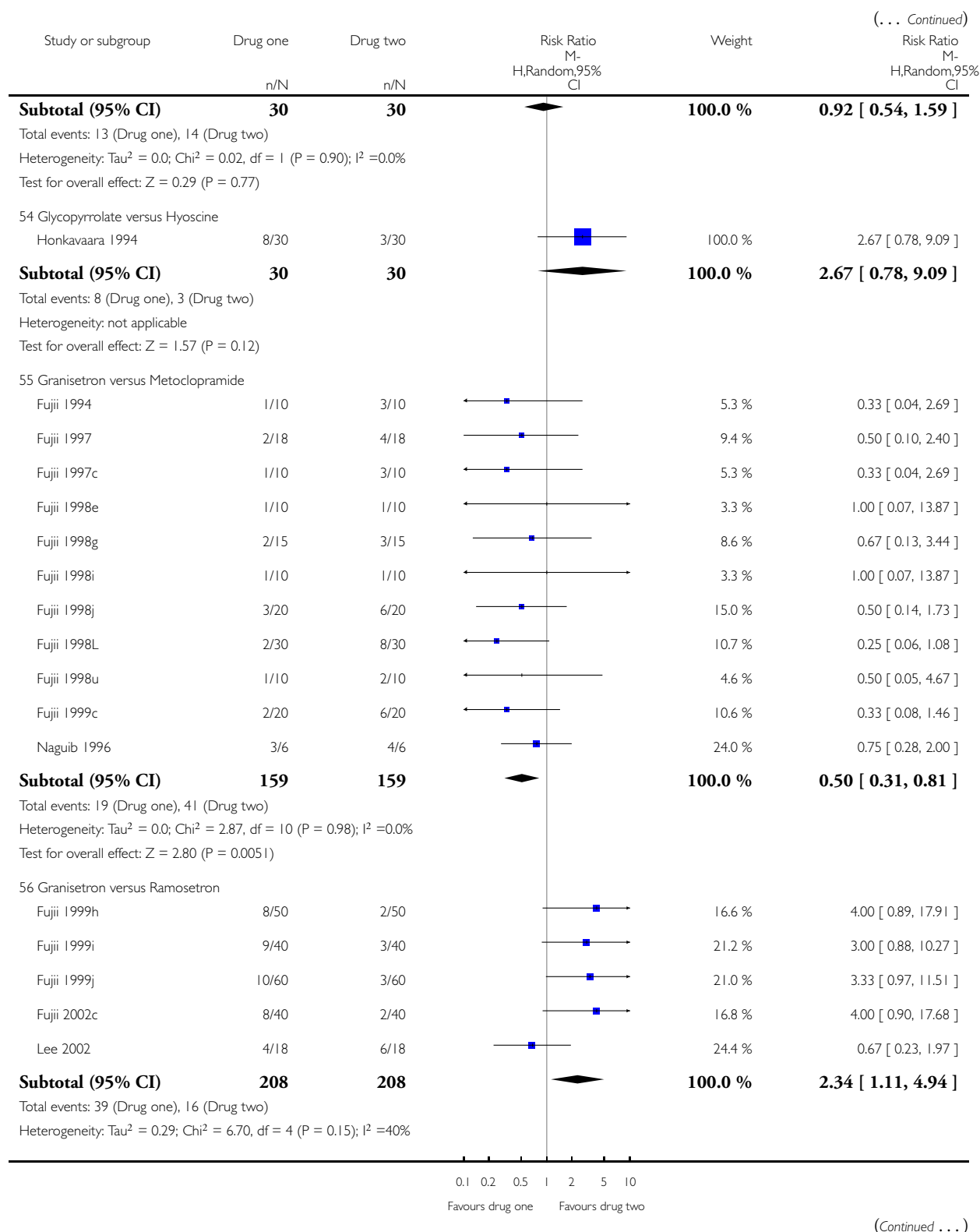


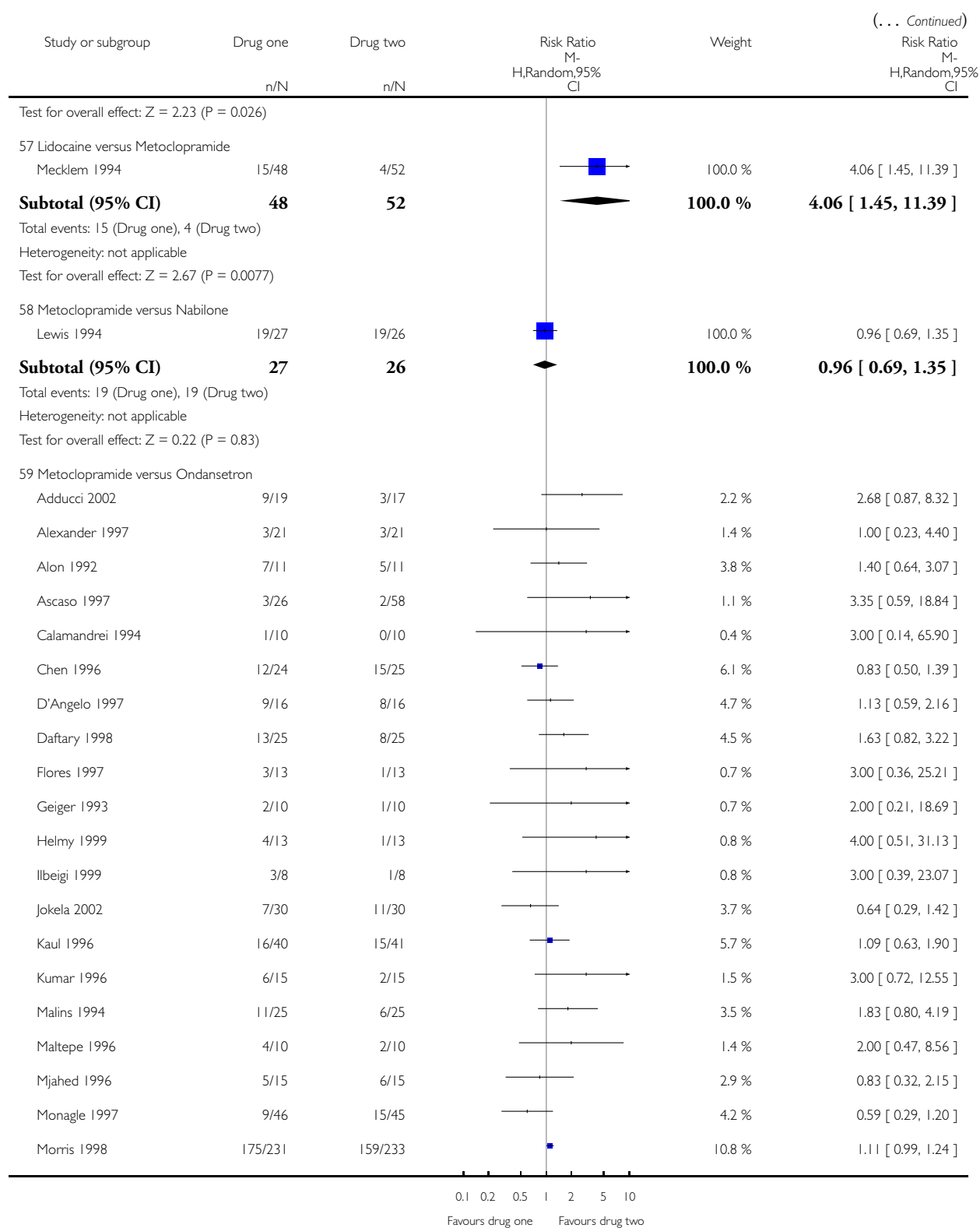


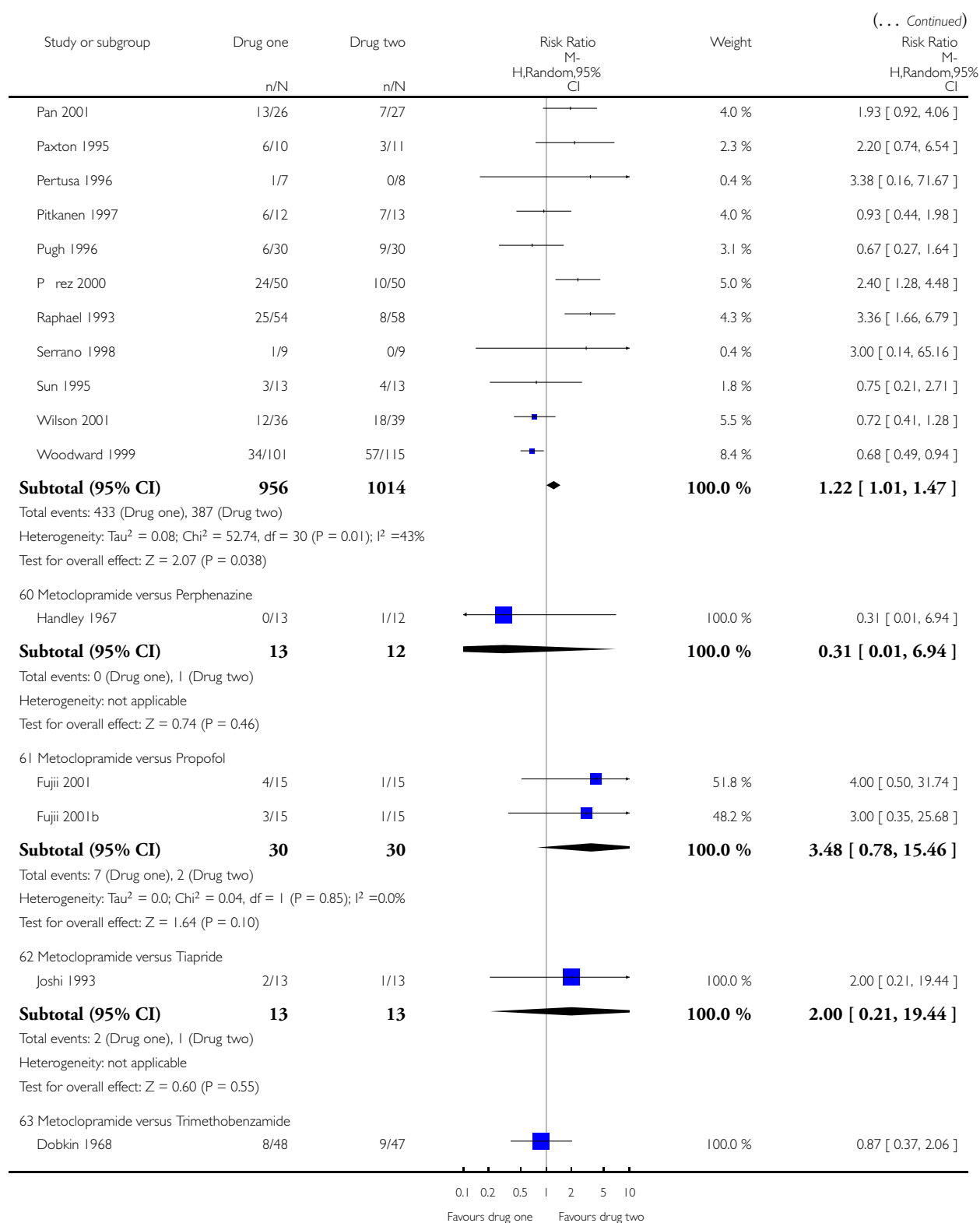


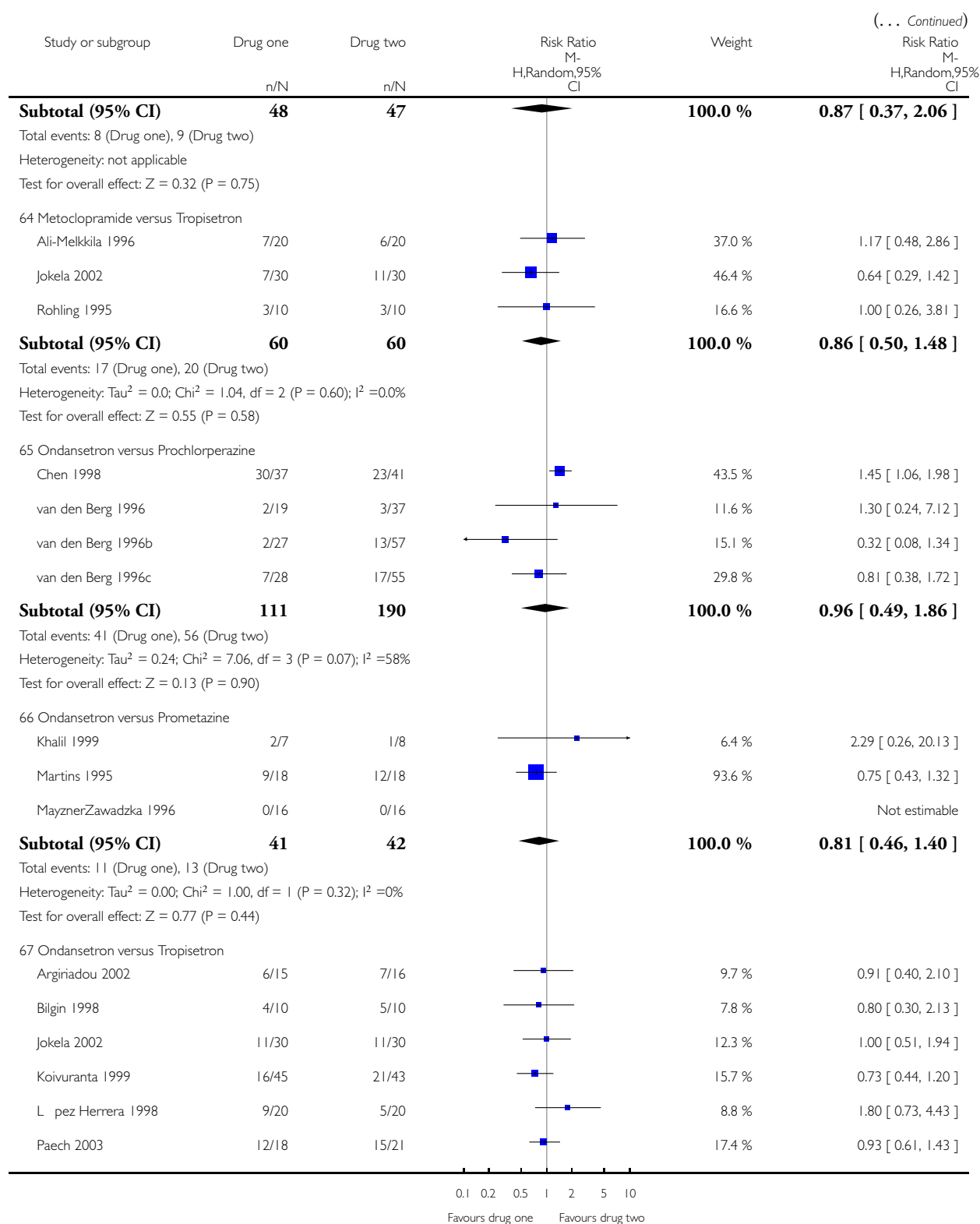


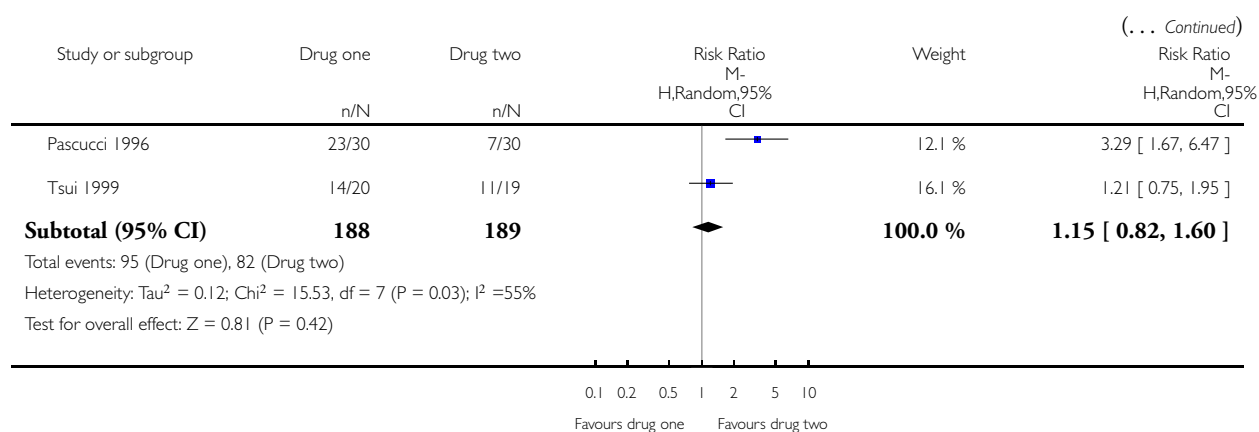










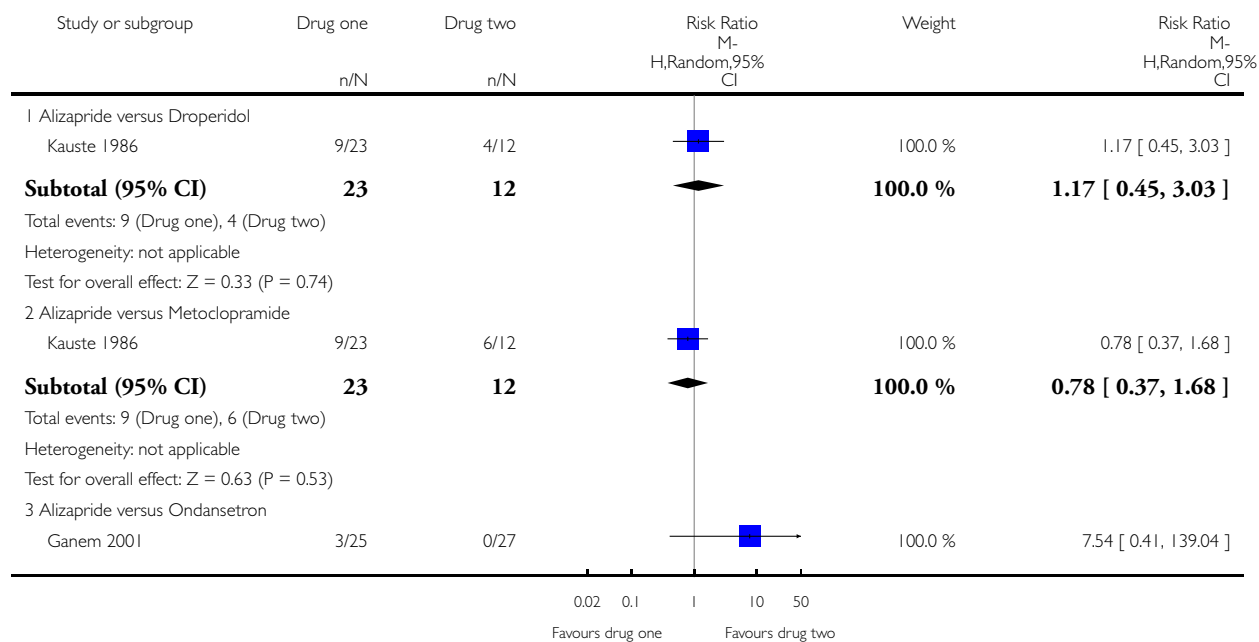


### Analysis 3.2. Comparison 3 PRIMARY ANALYSIS: Drug versus Drug, Outcome 2 Vomiting.

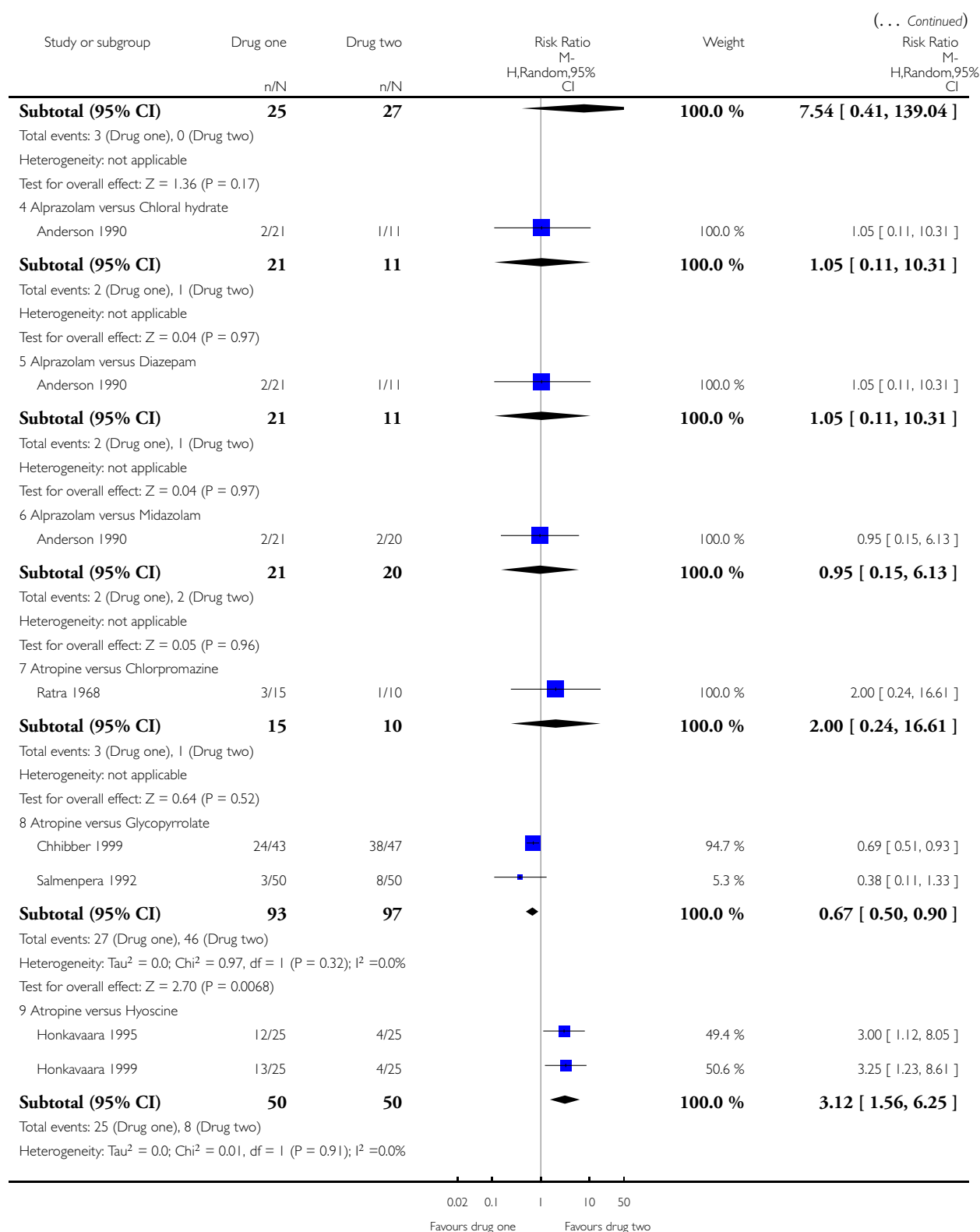
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 3 PRIMARY ANALYSIS: Drug versus Drug

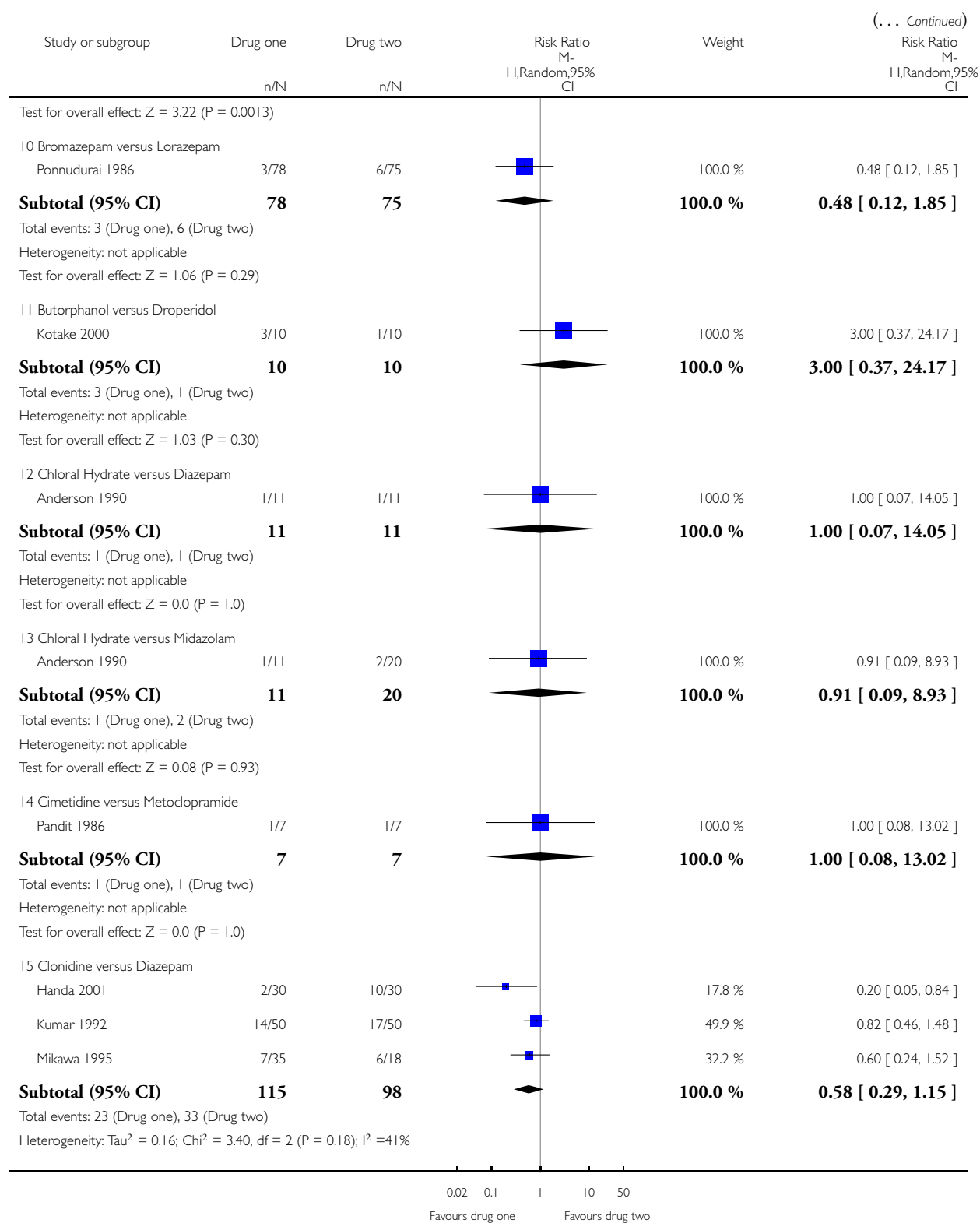
Outcome: 2 Vomiting

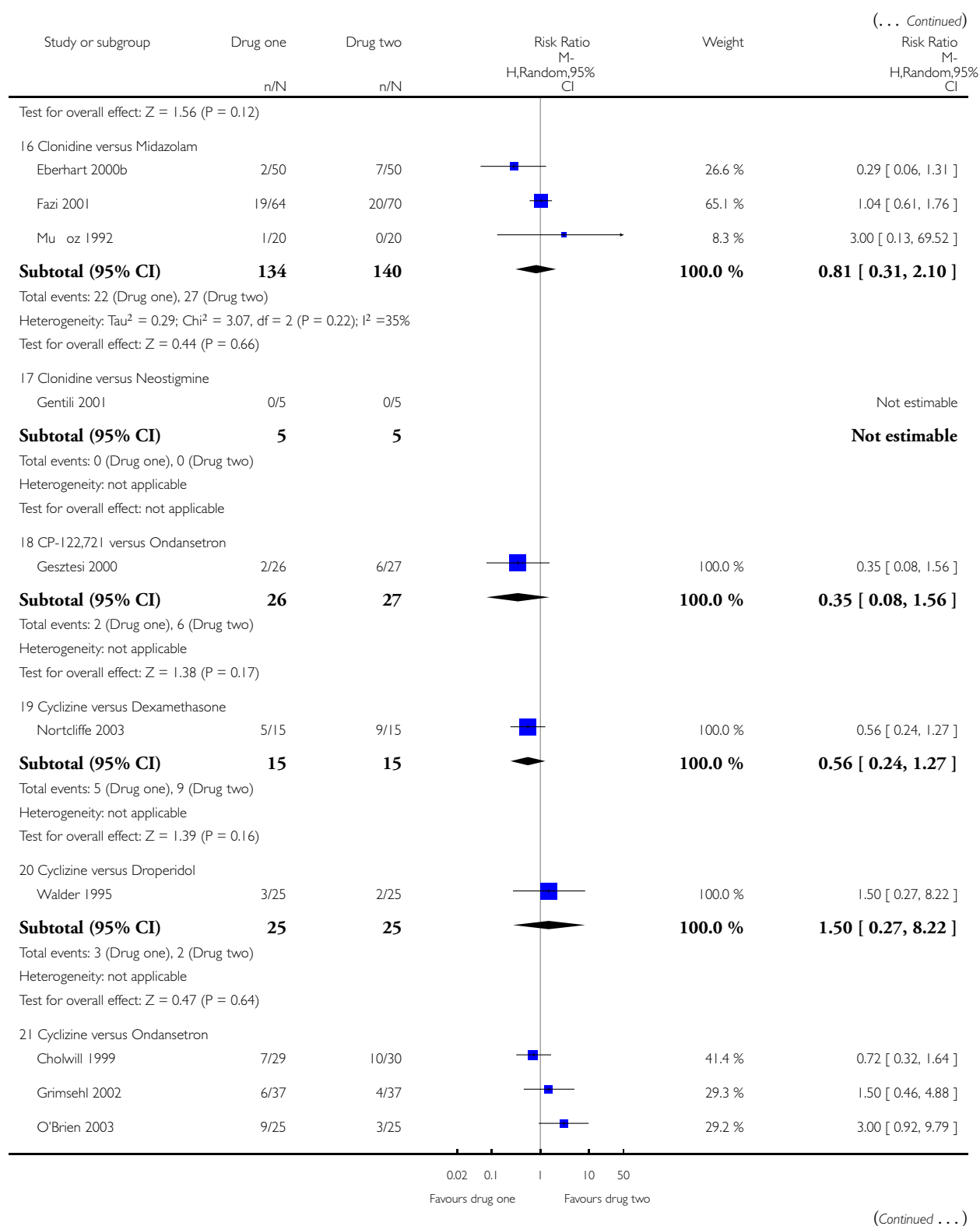


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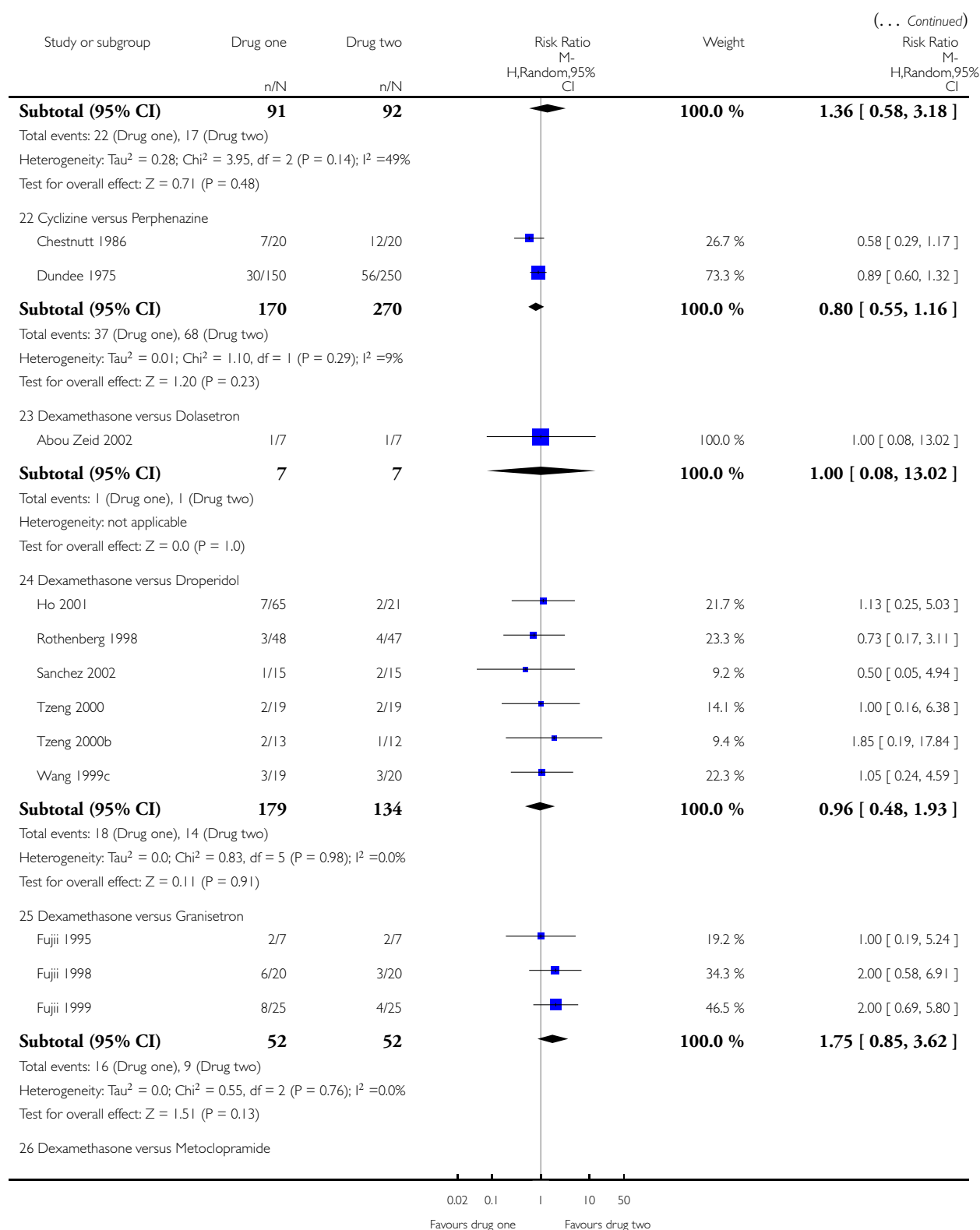


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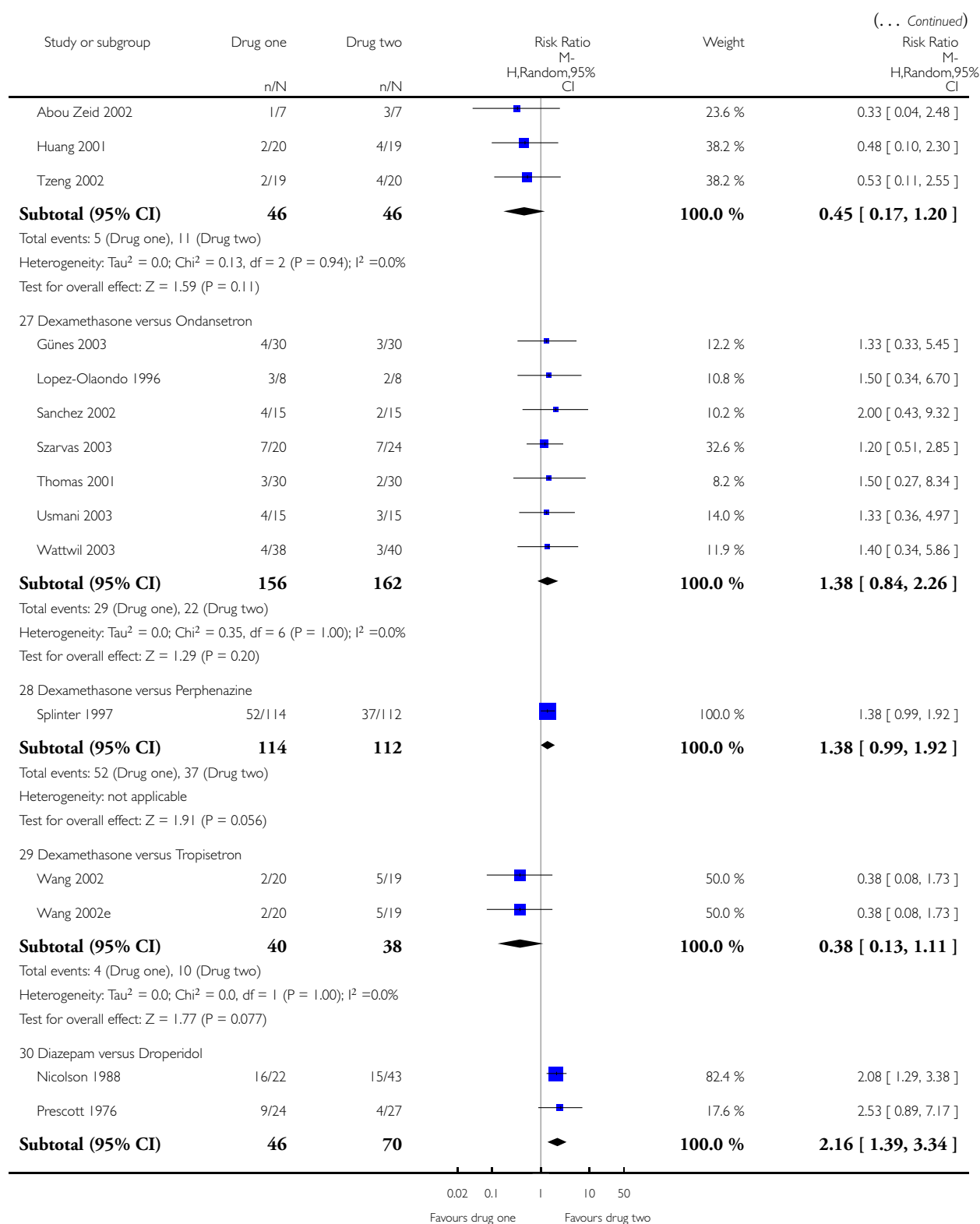


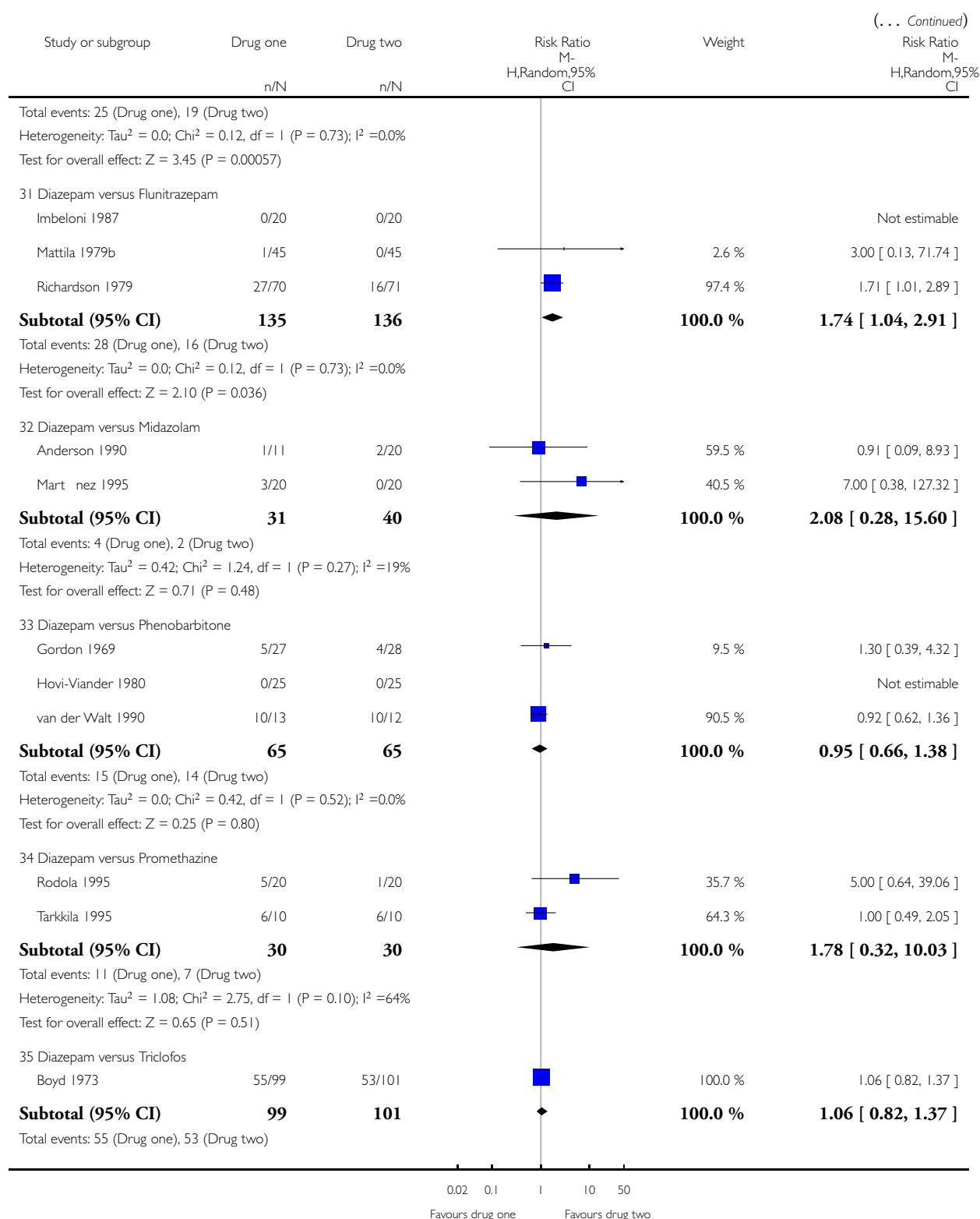


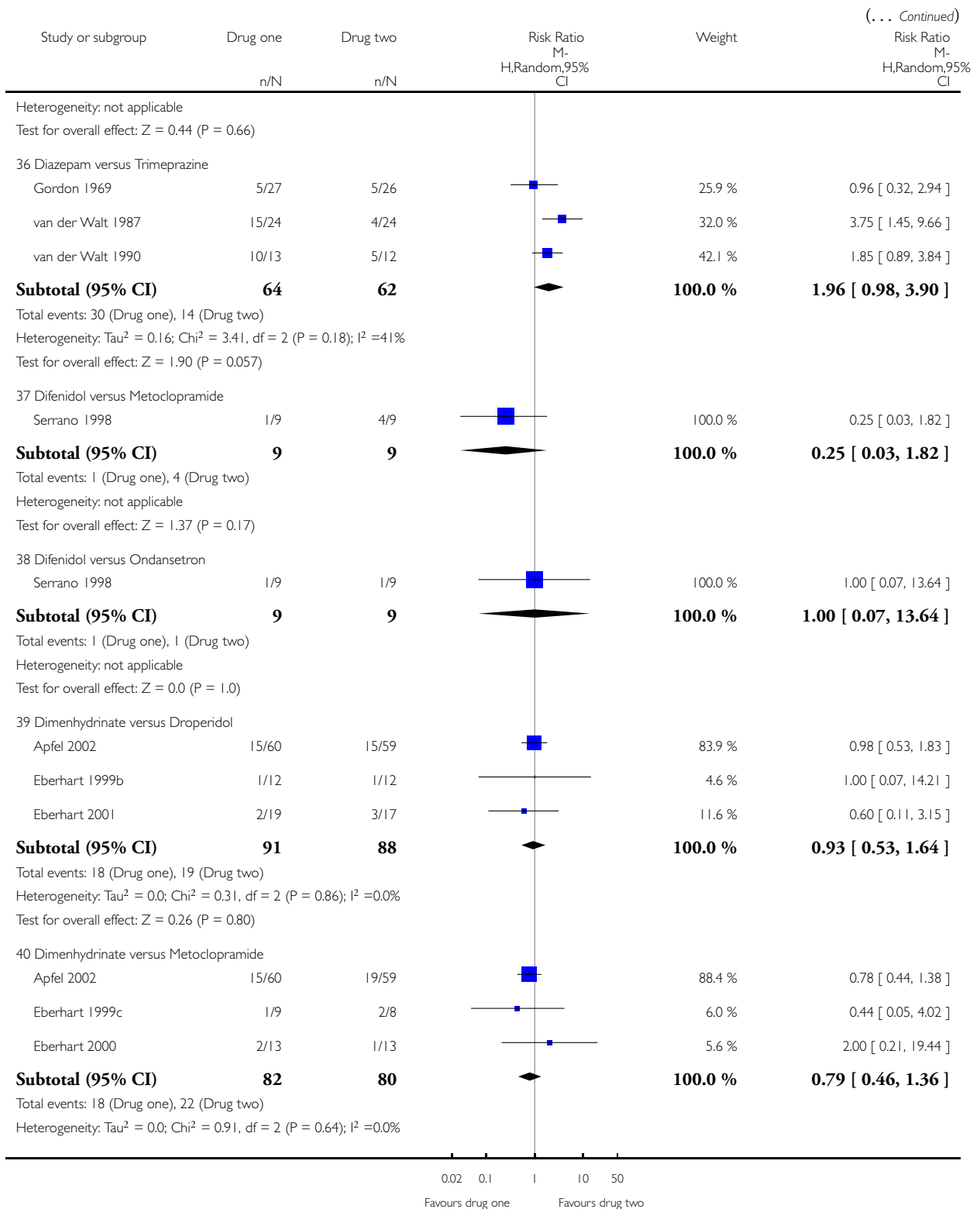




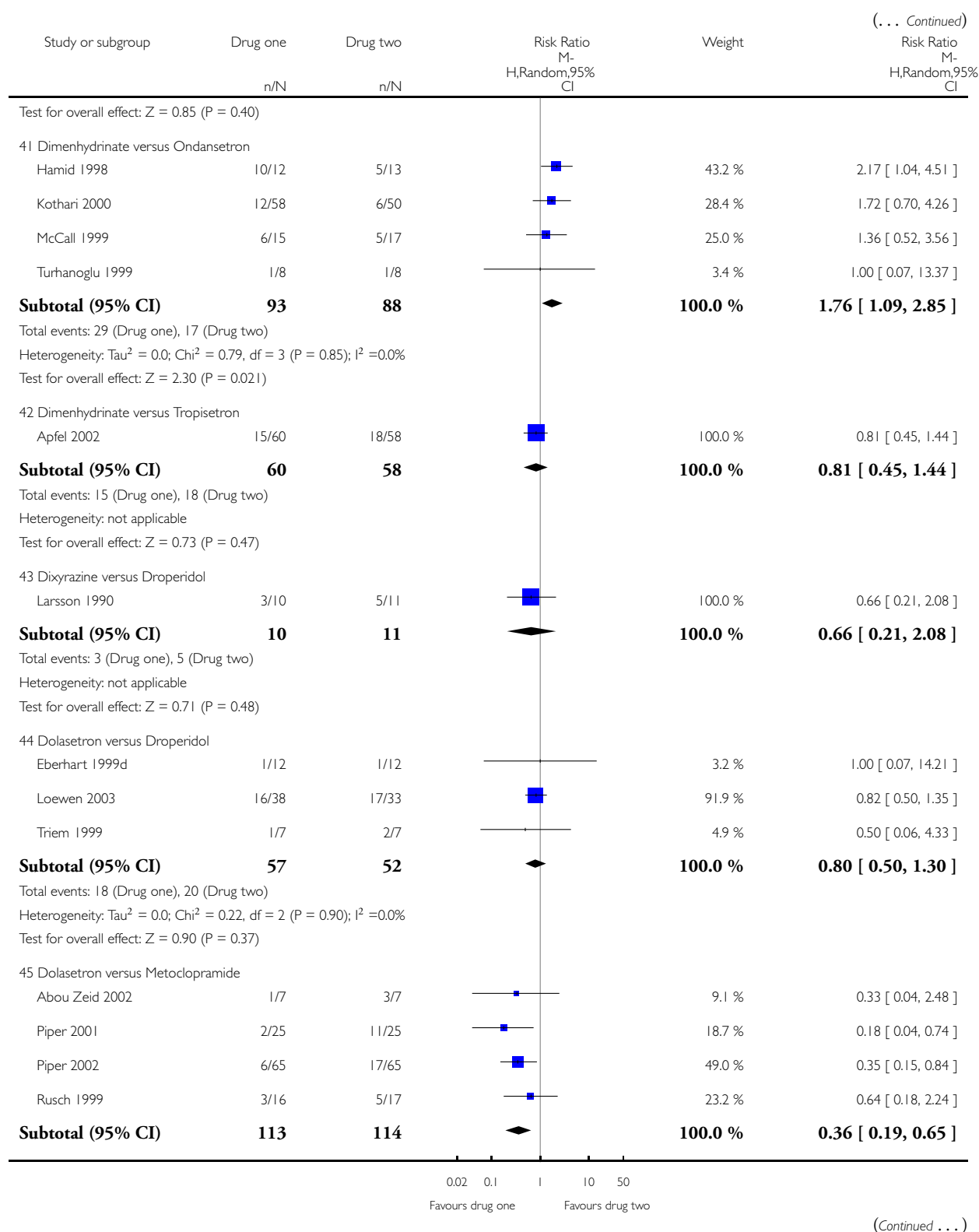
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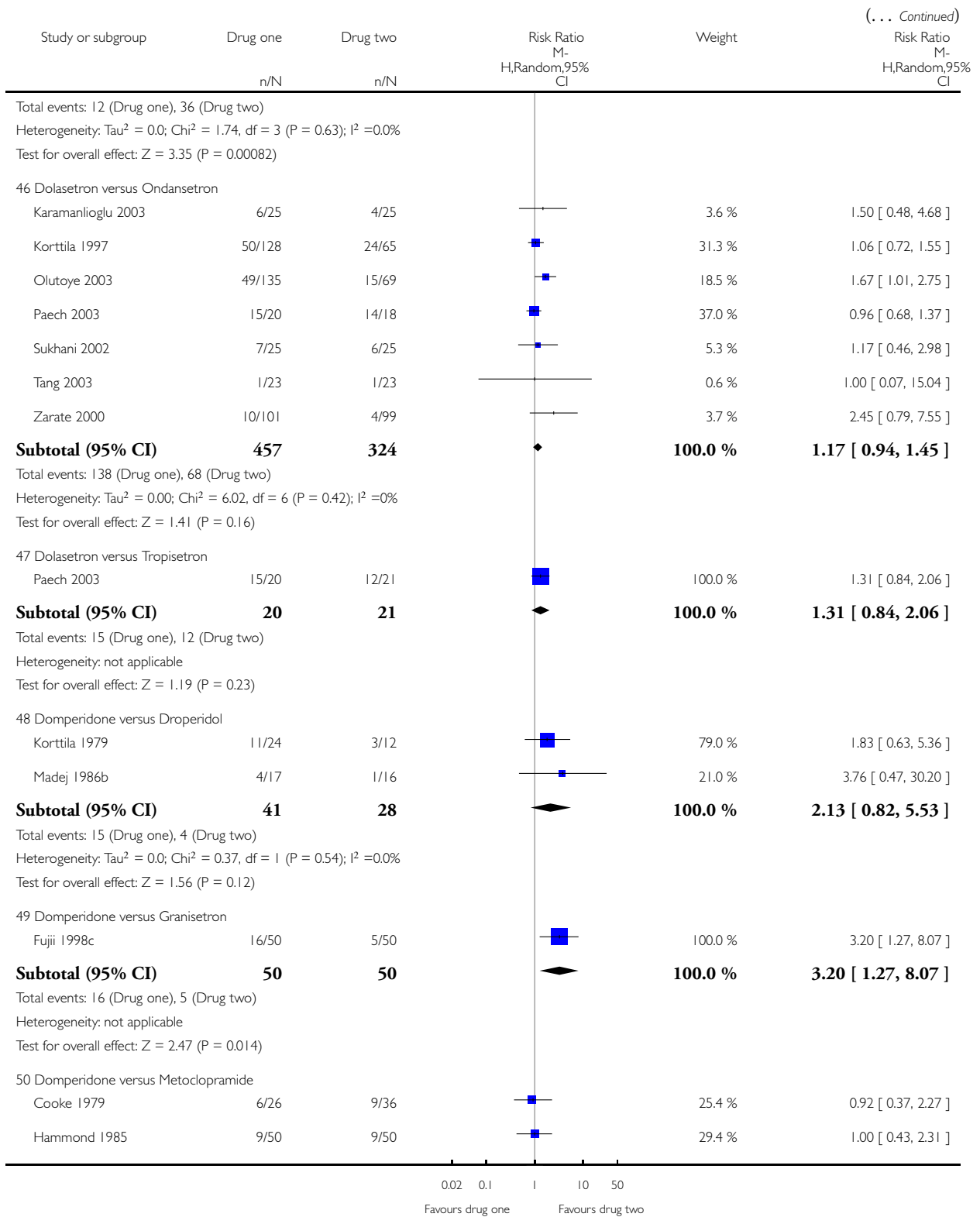


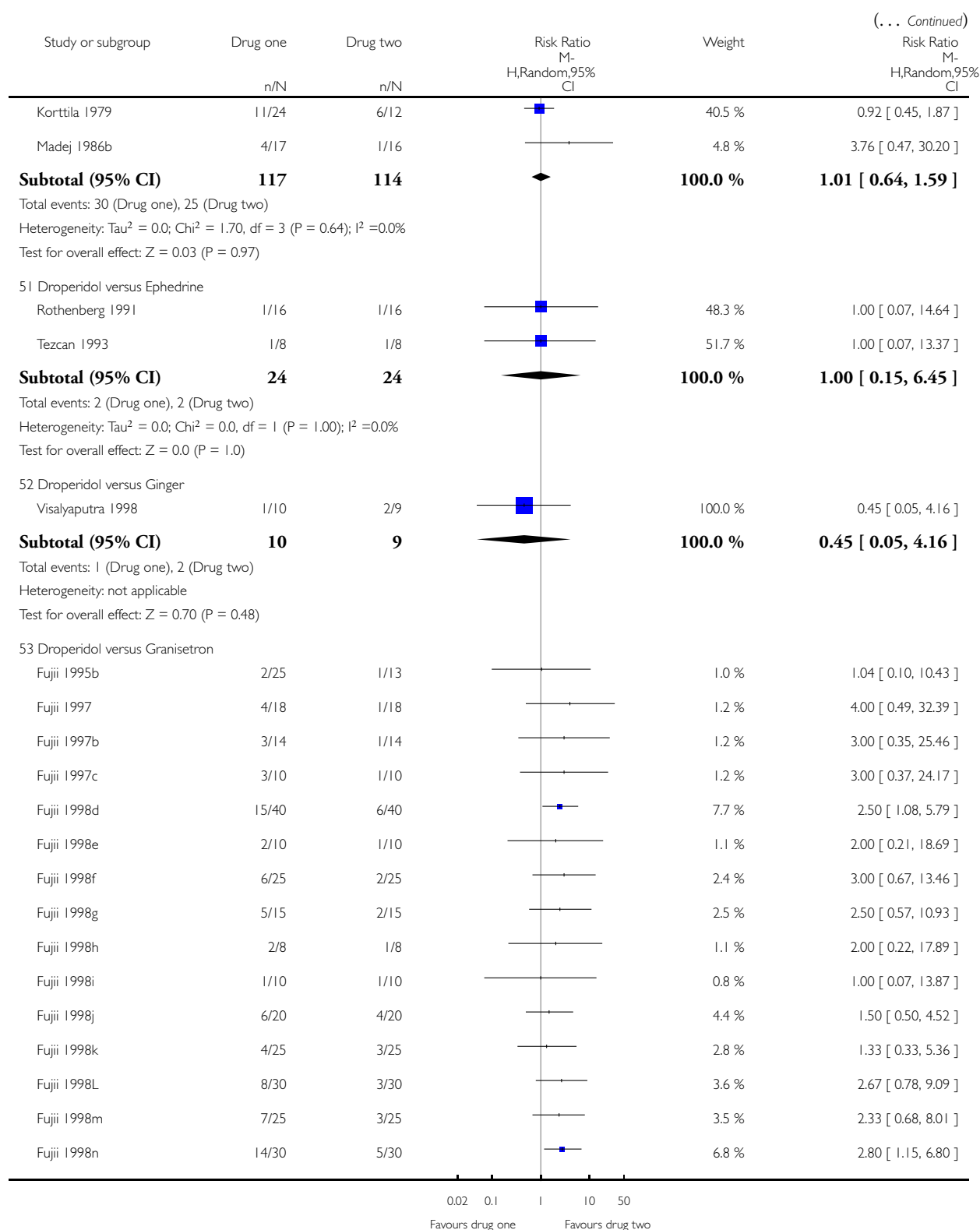


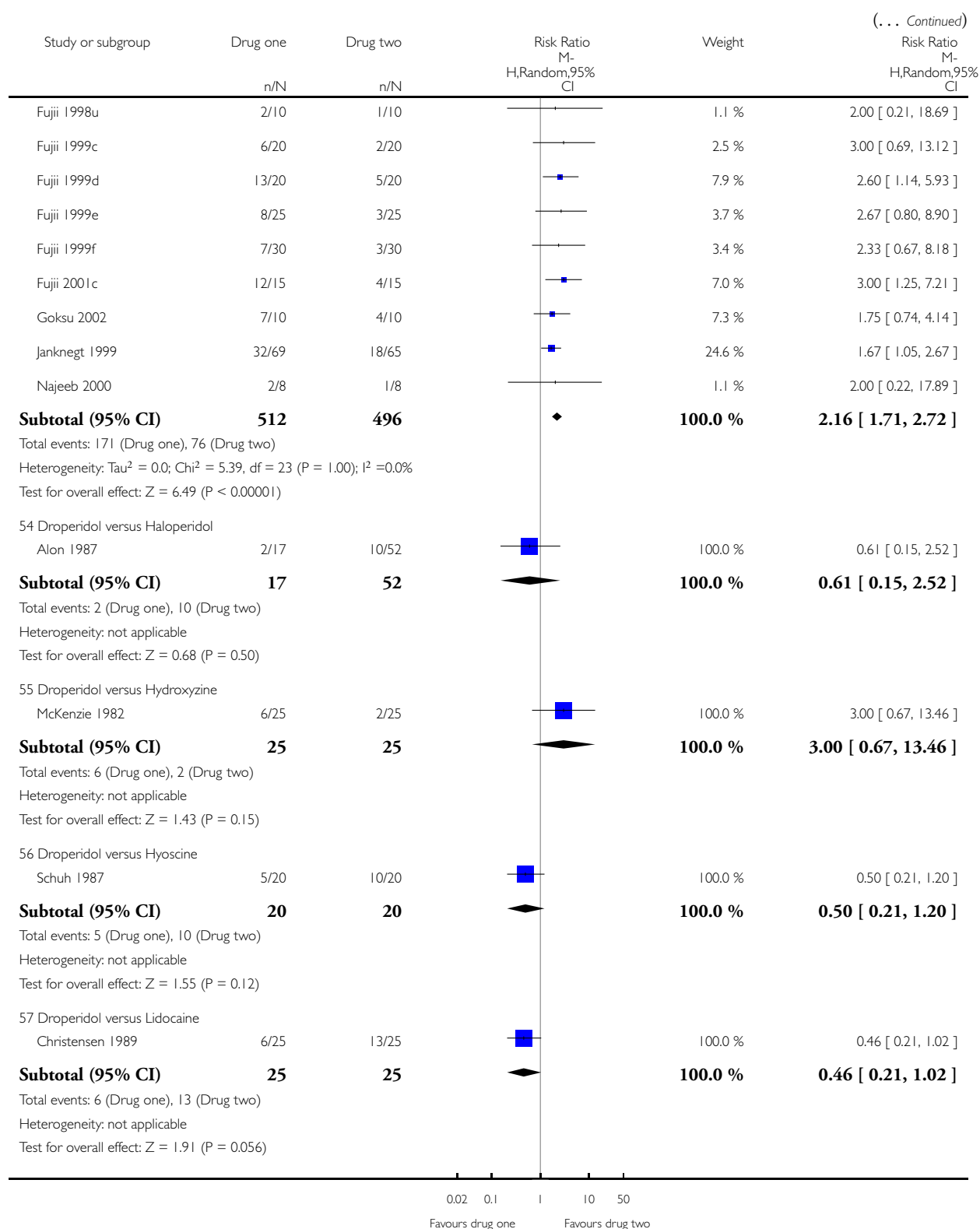


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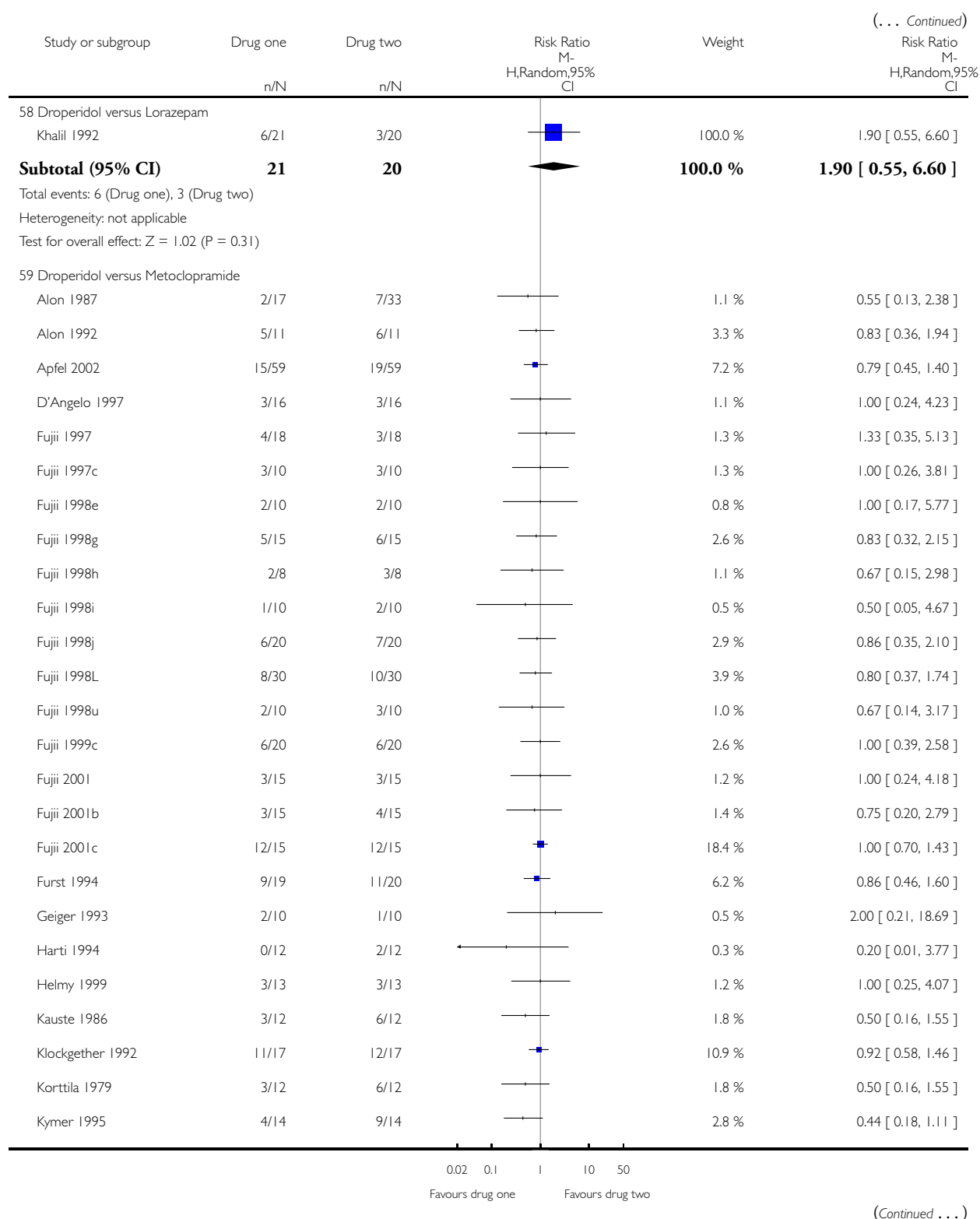


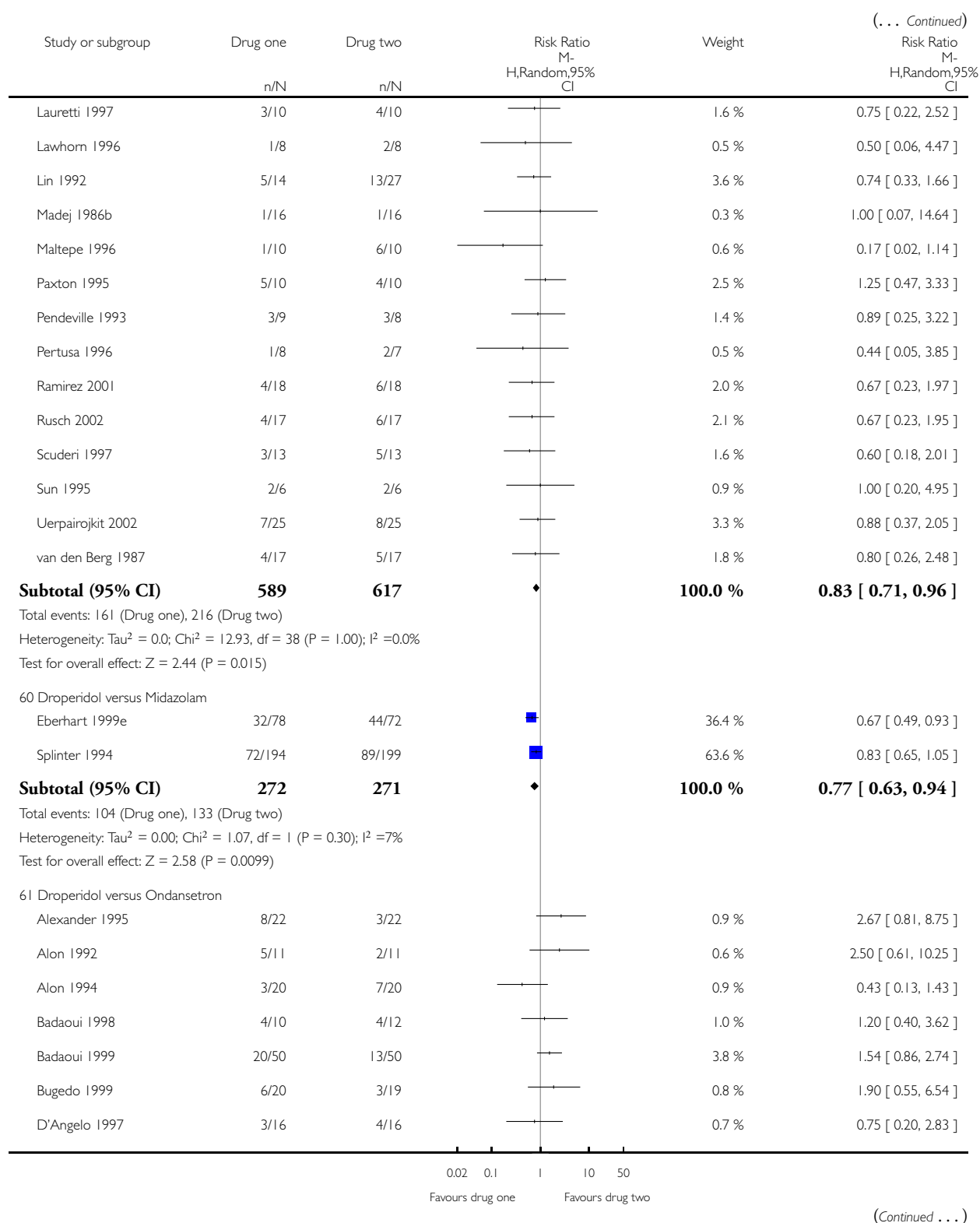


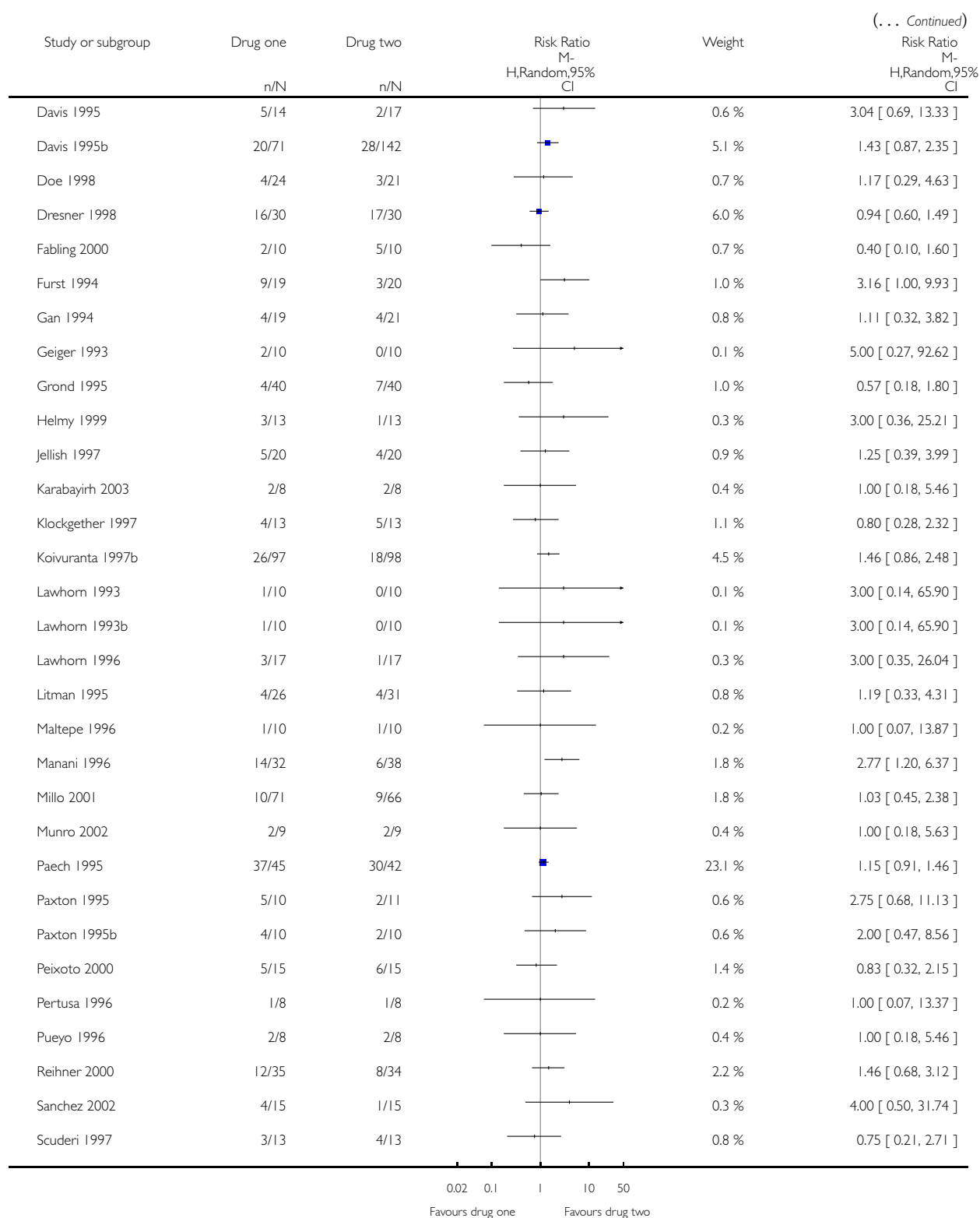


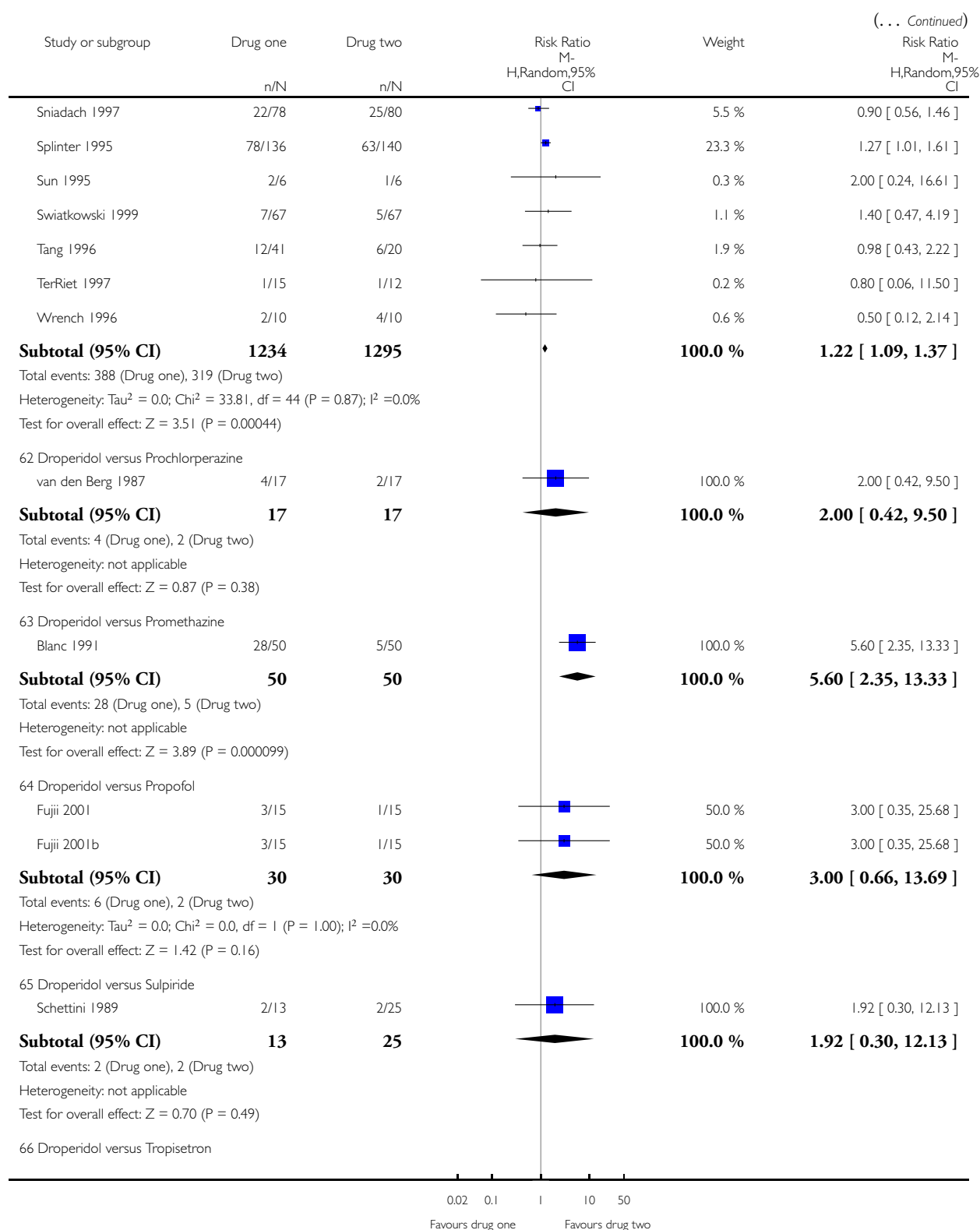
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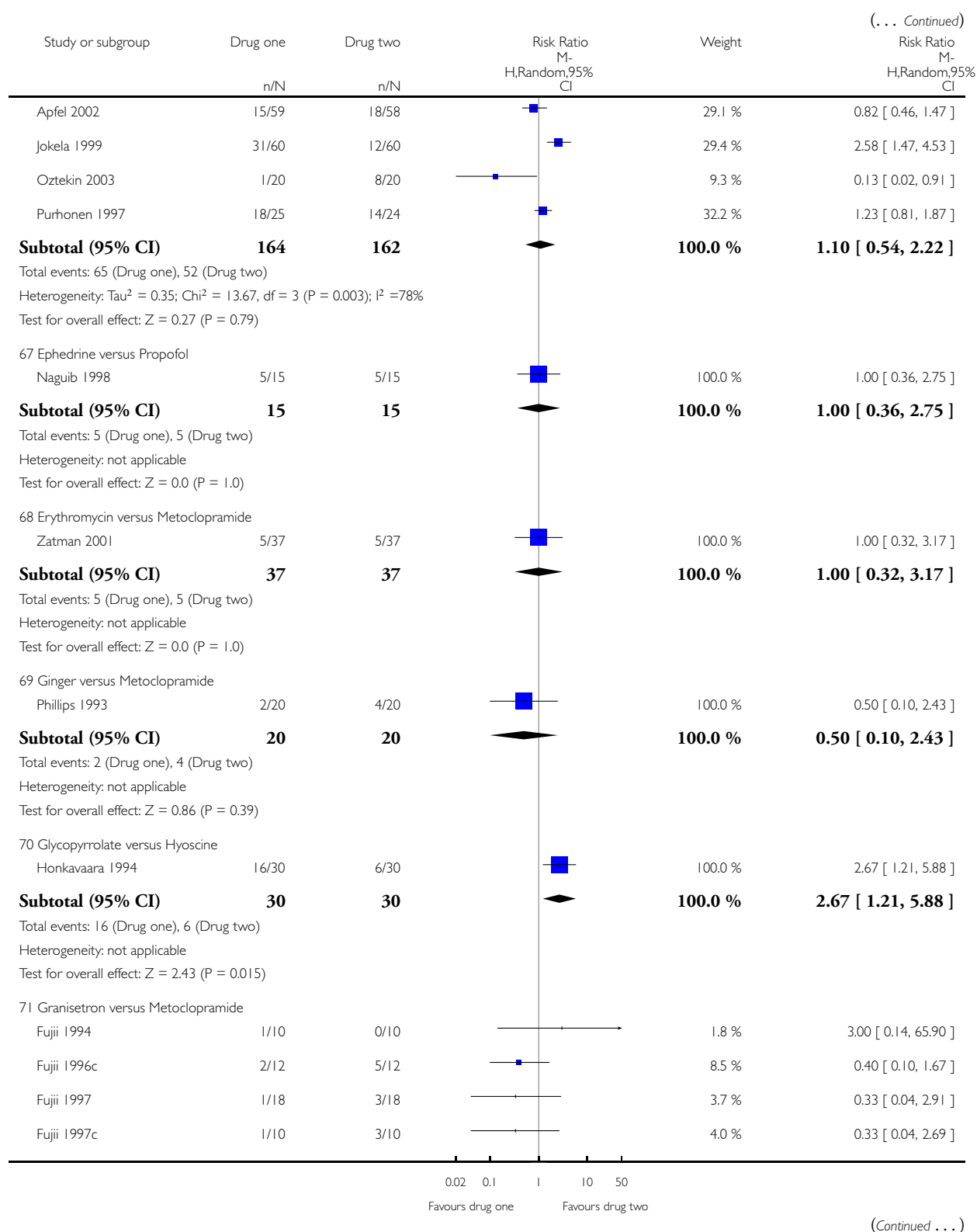


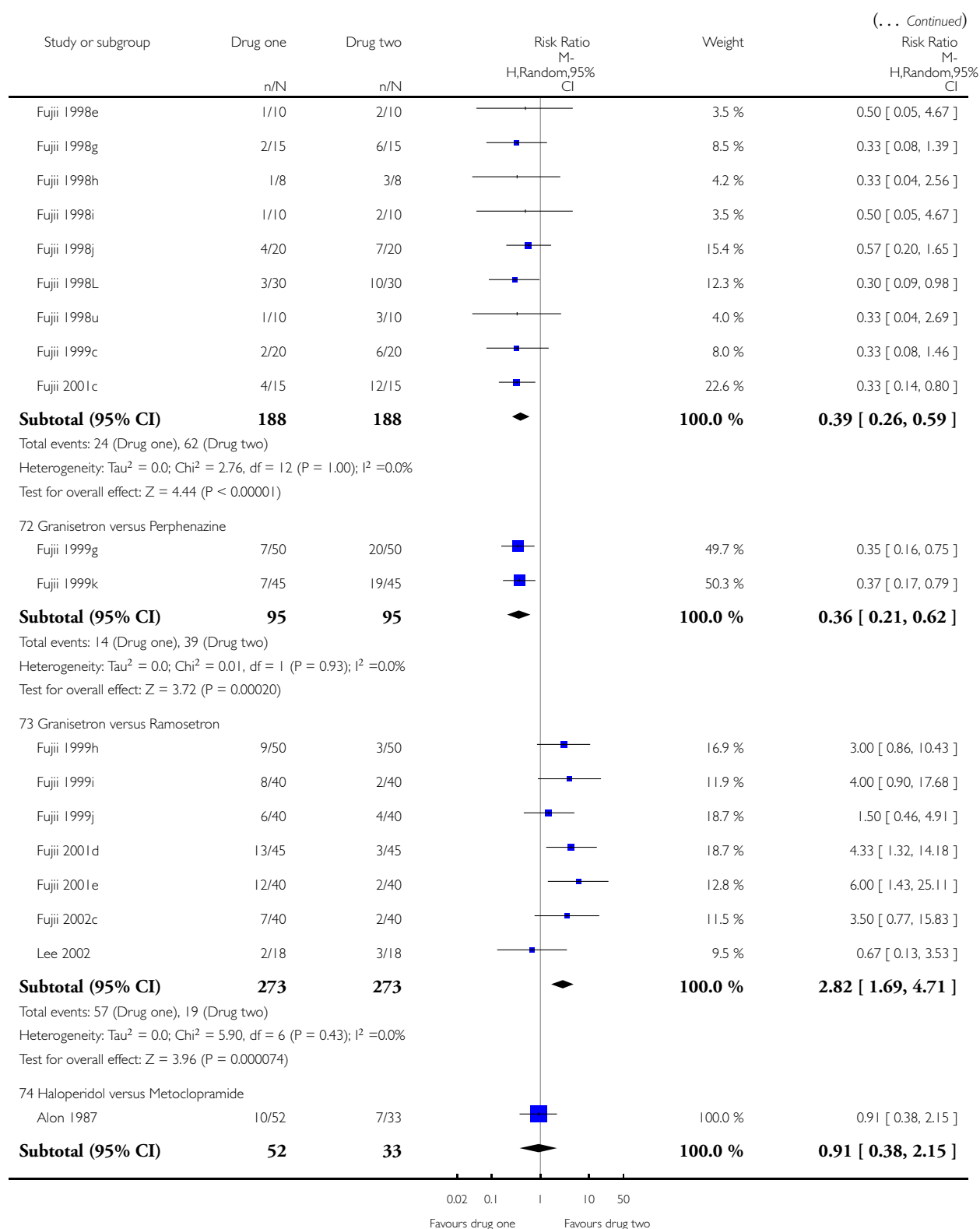


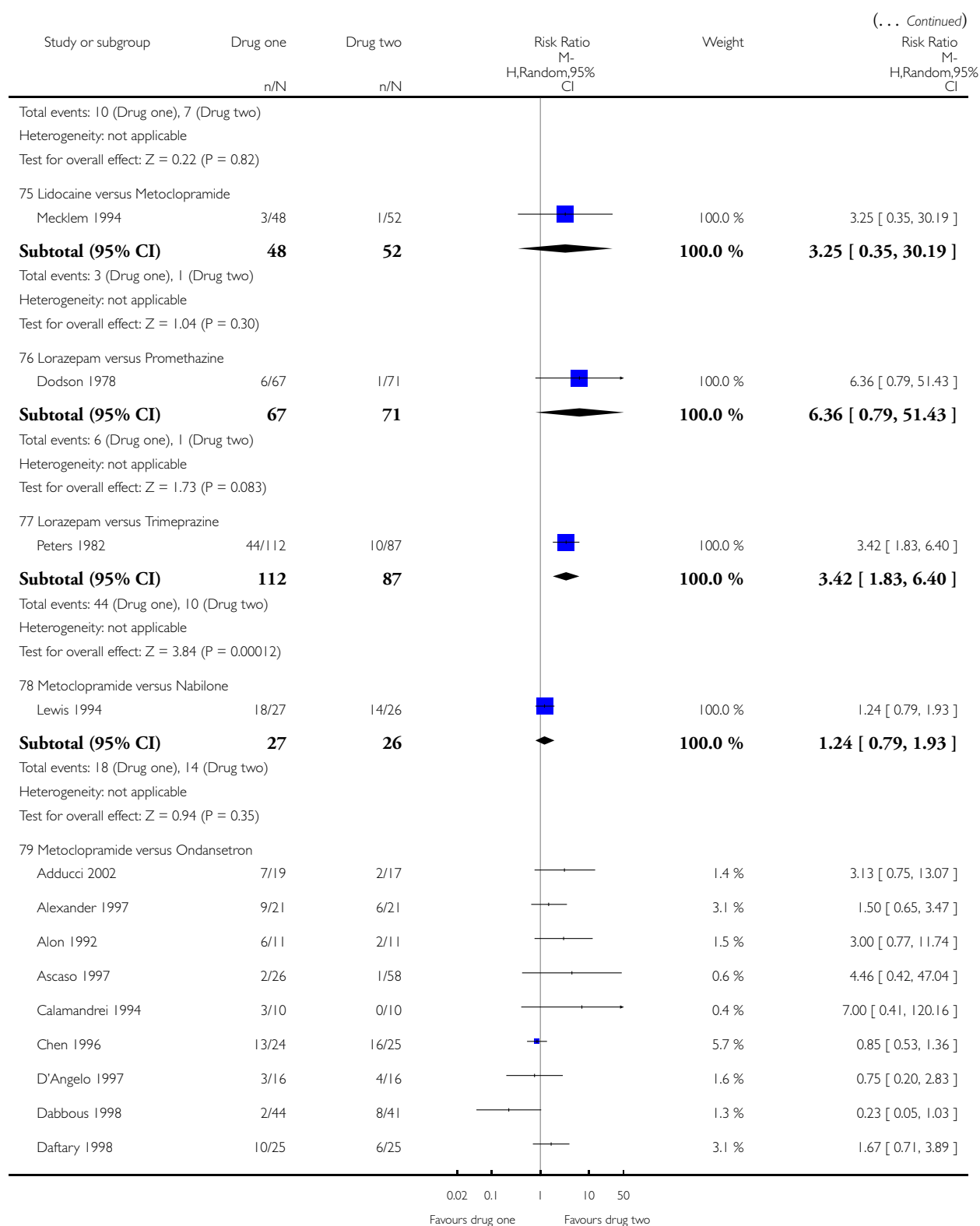




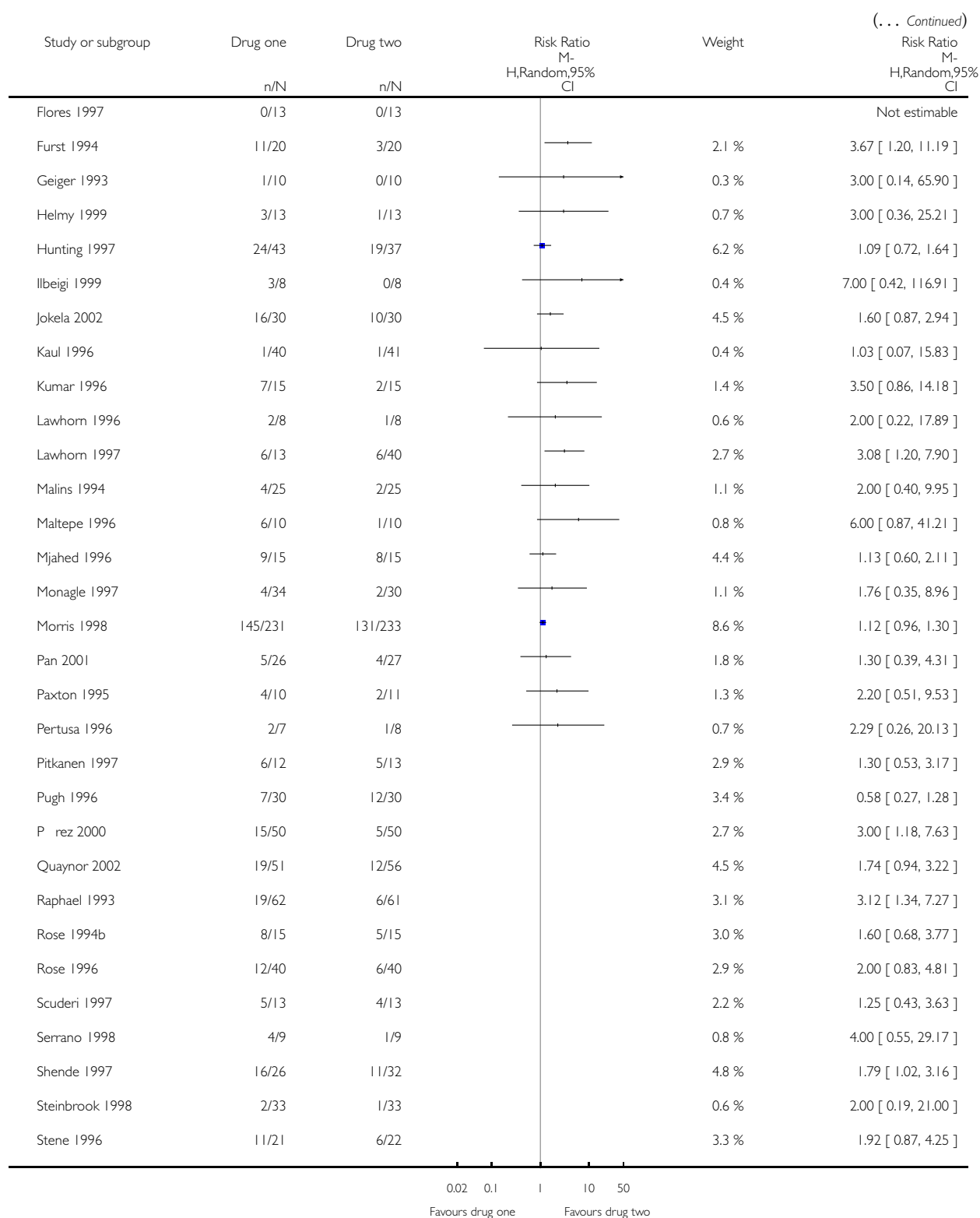




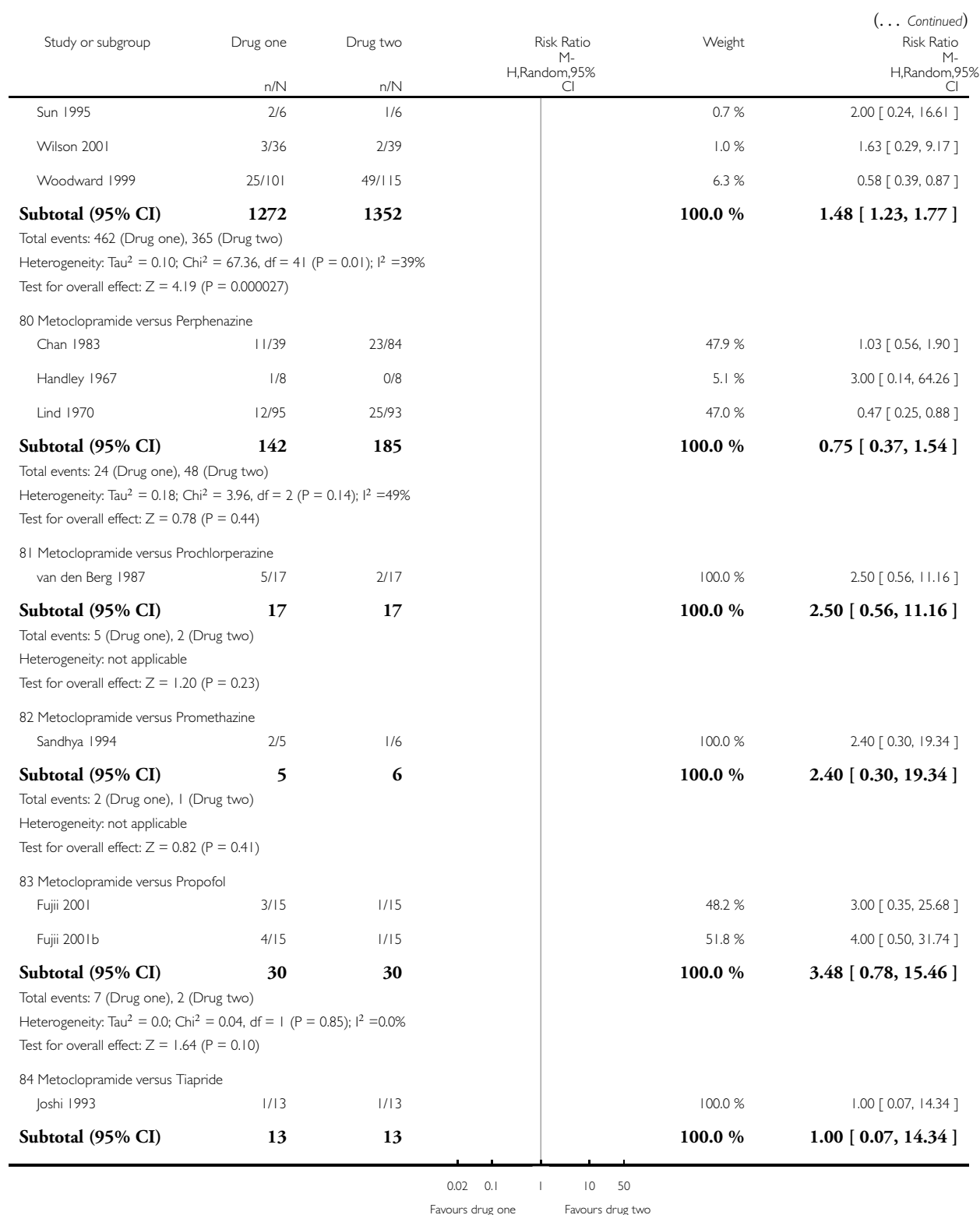


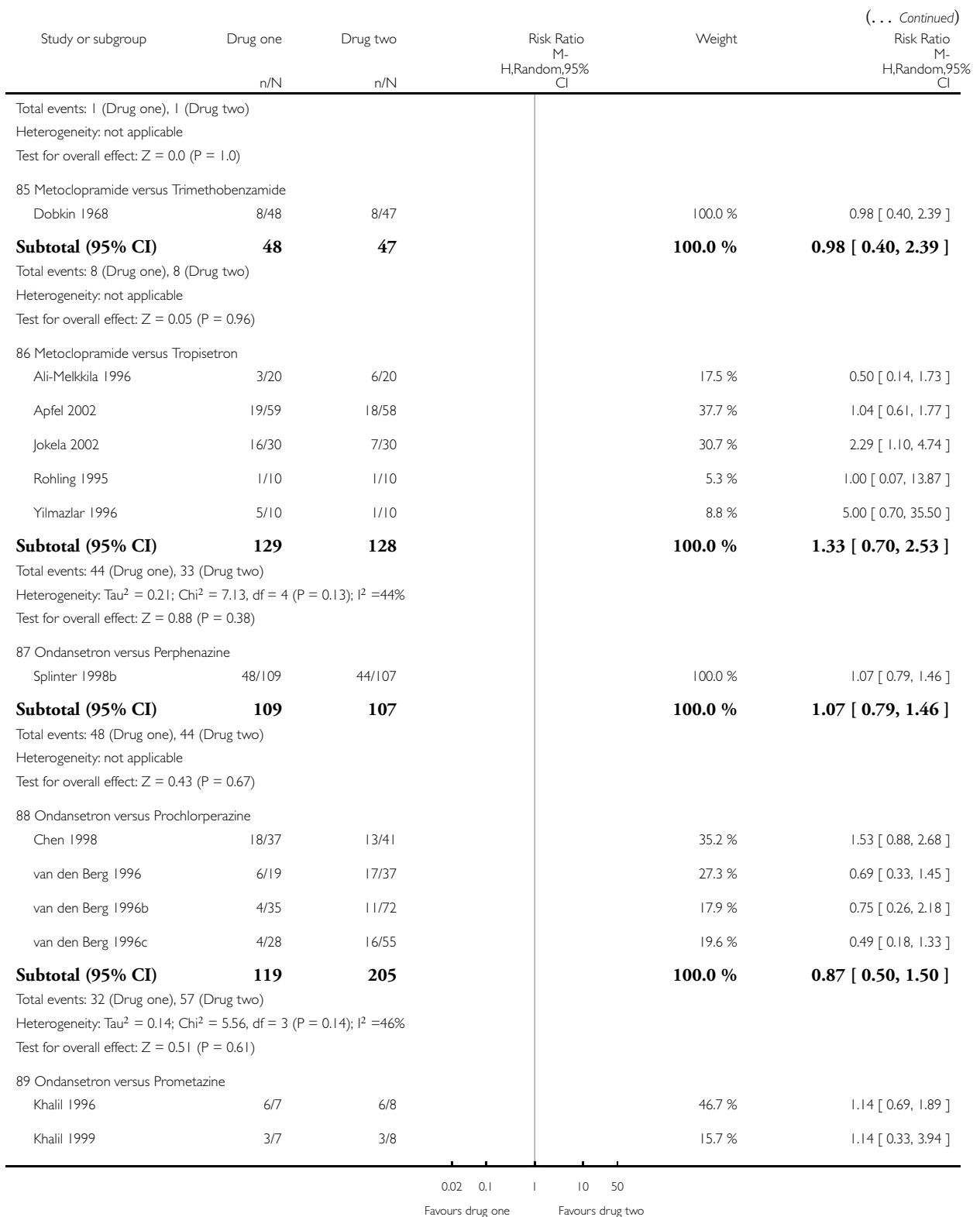


(Continued ...)









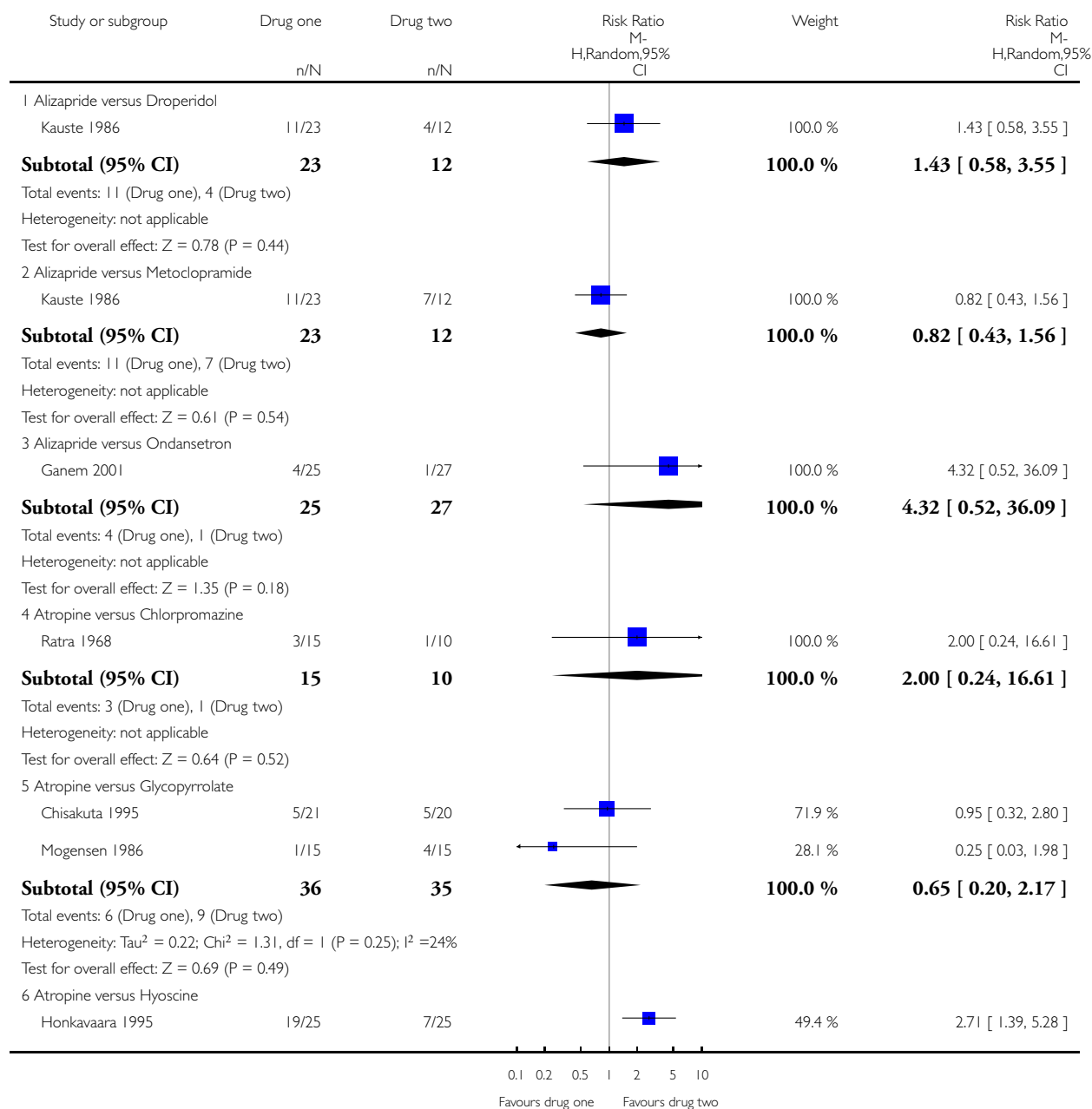
Study or subgroup	Drug one	Drug two	Risk Ratio M- H,Random,95% CI	Weight	(... Continued)
					Risk Ratio M- H,Random,95% CI
	n/N	n/N			
Martins 1995	5/18	9/18		26.0 %	0.56 [ 0.23, 1.33 ]
MayznerZawadzka 1996	2/16	5/16		11.6 %	0.40 [ 0.09, 1.77 ]
<b>Subtotal (95% CI)</b>	<b>48</b>	<b>50</b>		<b>100.0 %</b>	<b>0.84 [ 0.48, 1.45 ]</b>
Total events: 16 (Drug one), 23 (Drug two)					
Heterogeneity: Tau <sup>2</sup> = 0.10; Chi <sup>2</sup> = 4.41, df = 3 (P = 0.22); I <sup>2</sup> =32%					
Test for overall effect: Z = 0.63 (P = 0.53)					
90 Ondansetron versus Tropisetron					
Argiriadou 2002	4/29	3/31		4.1 %	1.43 [ 0.35, 5.83 ]
Bilgin 1998	2/10	2/10		2.7 %	1.00 [ 0.17, 5.77 ]
Jokela 2002	10/30	7/30		12.2 %	1.43 [ 0.63, 3.25 ]
Koivuranta 1999	6/45	6/43		7.4 %	0.96 [ 0.33, 2.73 ]
Lopez Herrera 1998	4/20	3/20		4.4 %	1.33 [ 0.34, 5.21 ]
Paech 2003	14/18	12/21		41.5 %	1.36 [ 0.87, 2.12 ]
Pascucci 1996	20/30	8/30		19.8 %	2.50 [ 1.31, 4.77 ]
Tsui 1999	8/20	4/19		7.9 %	1.90 [ 0.68, 5.28 ]
<b>Subtotal (95% CI)</b>	<b>202</b>	<b>204</b>		<b>100.0 %</b>	<b>1.53 [ 1.15, 2.04 ]</b>
Total events: 68 (Drug one), 45 (Drug two)					
Heterogeneity: Tau <sup>2</sup> = 0.0; Chi <sup>2</sup> = 3.75, df = 7 (P = 0.81); I <sup>2</sup> =0.0%					
Test for overall effect: Z = 2.92 (P = 0.0035)					
91 Pentobarbitone versus Trimeprazine					
Gordon 1969	3/28	5/26		40.9 %	0.56 [ 0.15, 2.10 ]
van der Walt 1990	10/12	5/12		59.1 %	2.00 [ 0.98, 4.09 ]
<b>Subtotal (95% CI)</b>	<b>40</b>	<b>38</b>		<b>100.0 %</b>	<b>1.19 [ 0.33, 4.32 ]</b>
Total events: 13 (Drug one), 10 (Drug two)					
Heterogeneity: Tau <sup>2</sup> = 0.60; Chi <sup>2</sup> = 3.04, df = 1 (P = 0.08); I <sup>2</sup> =67%					
Test for overall effect: Z = 0.26 (P = 0.80)					
			0.02 0.1 1 10 50		
			Favours drug one Favours drug two		

### Analysis 3.3. Comparison 3 PRIMARY ANALYSIS: Drug versus Drug, Outcome 3 Nausea or Vomiting.

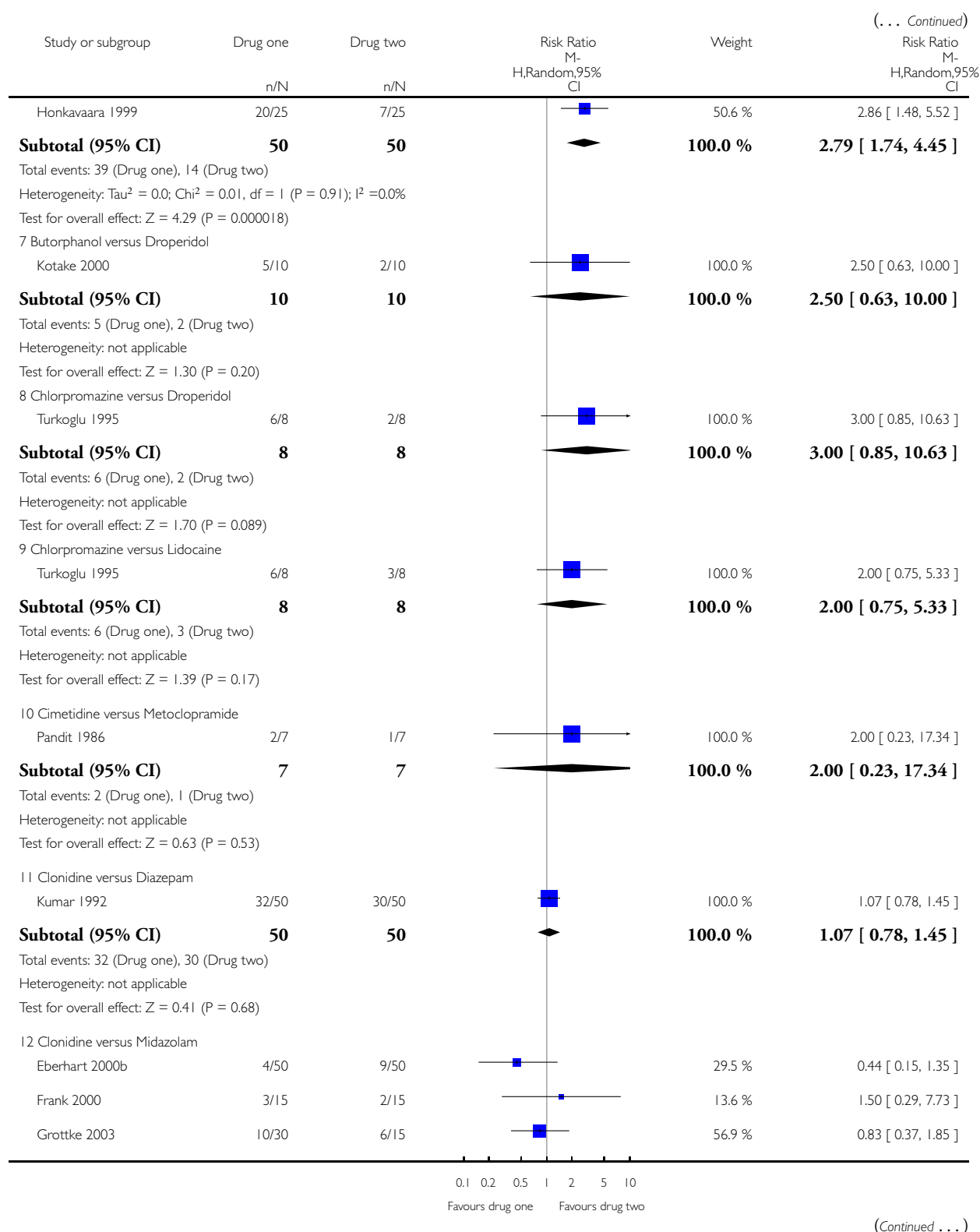
Review: Drugs for preventing postoperative nausea and vomiting

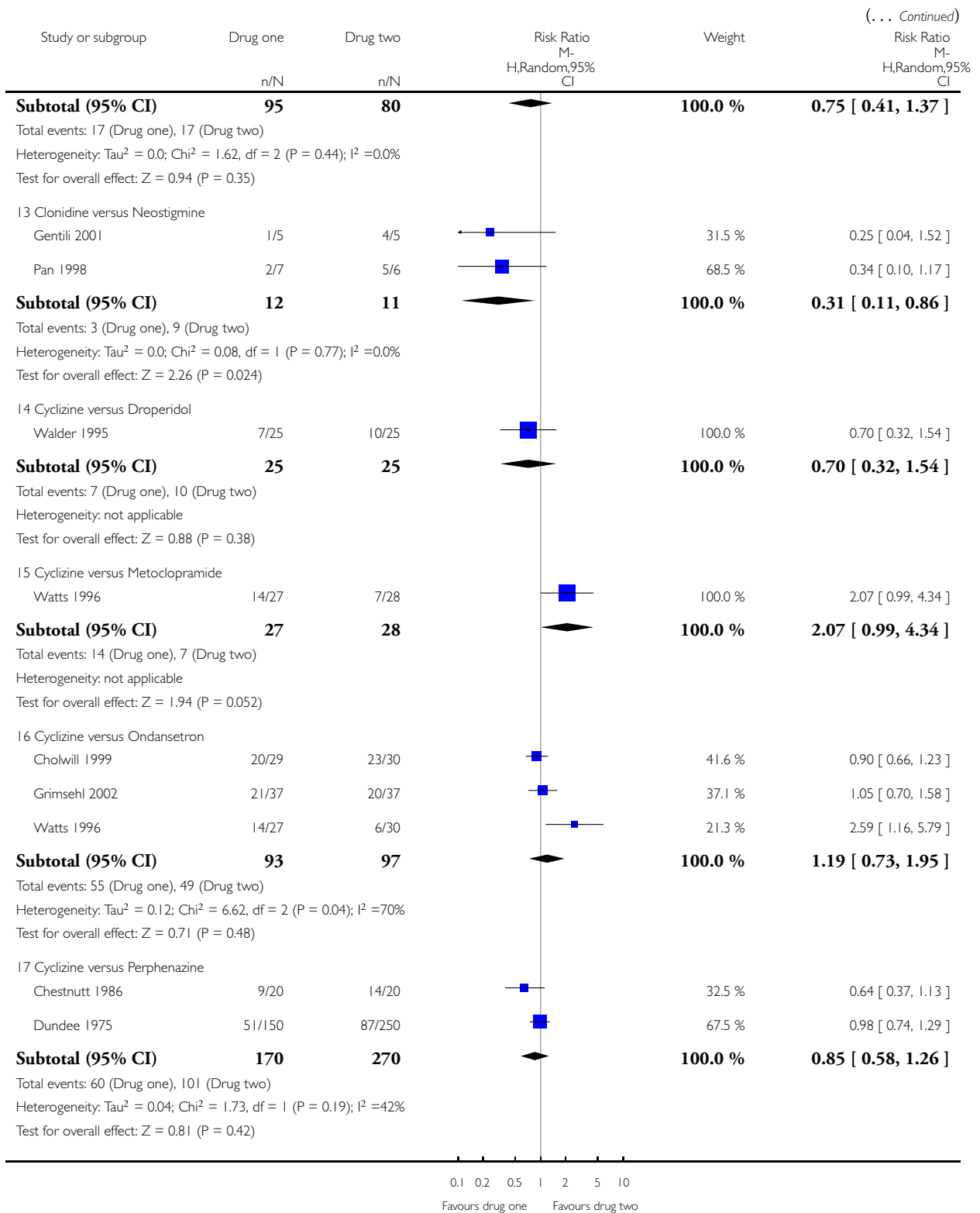
Comparison: 3 PRIMARY ANALYSIS: Drug versus Drug

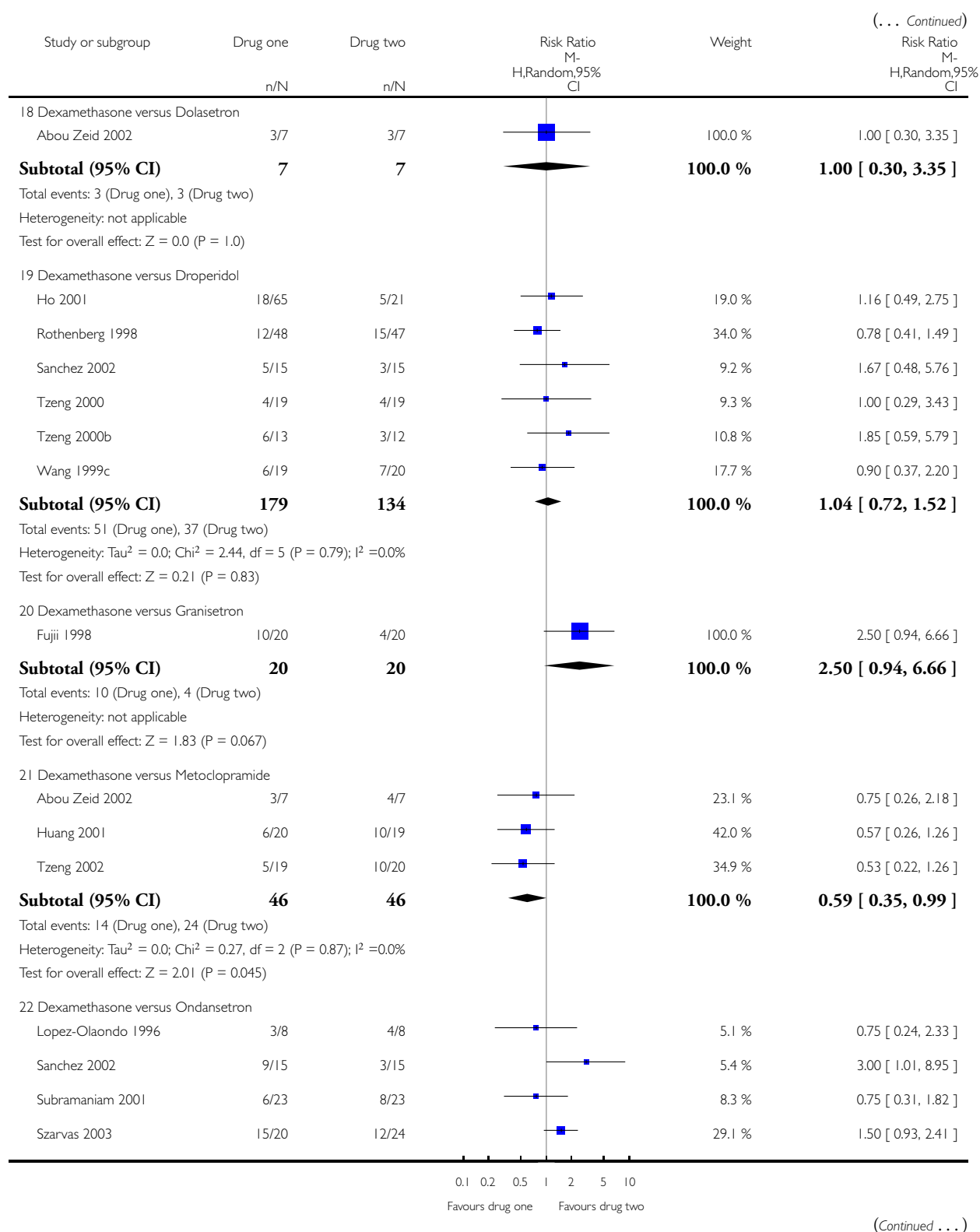
Outcome: 3 Nausea or Vomiting

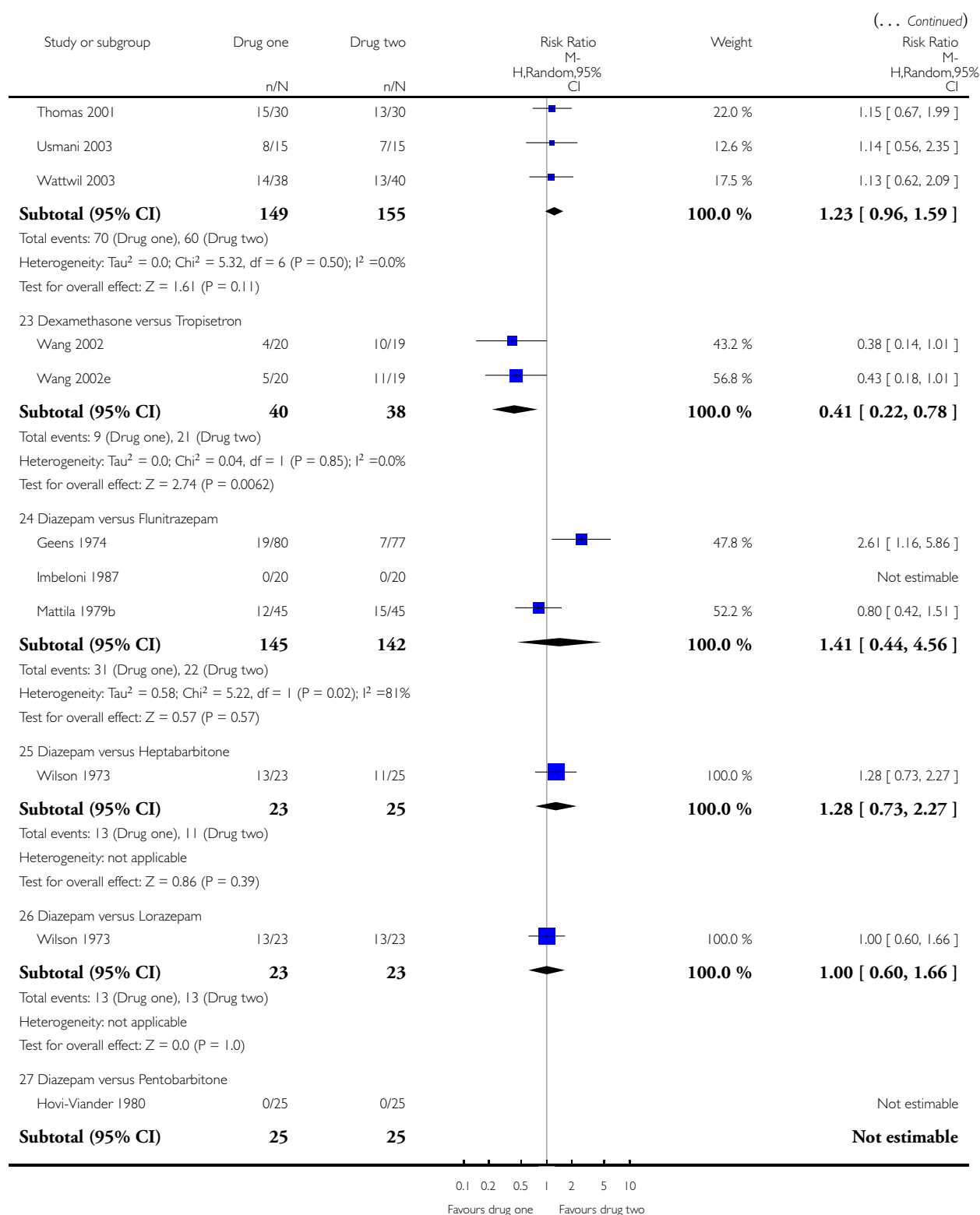


(Continued ...)

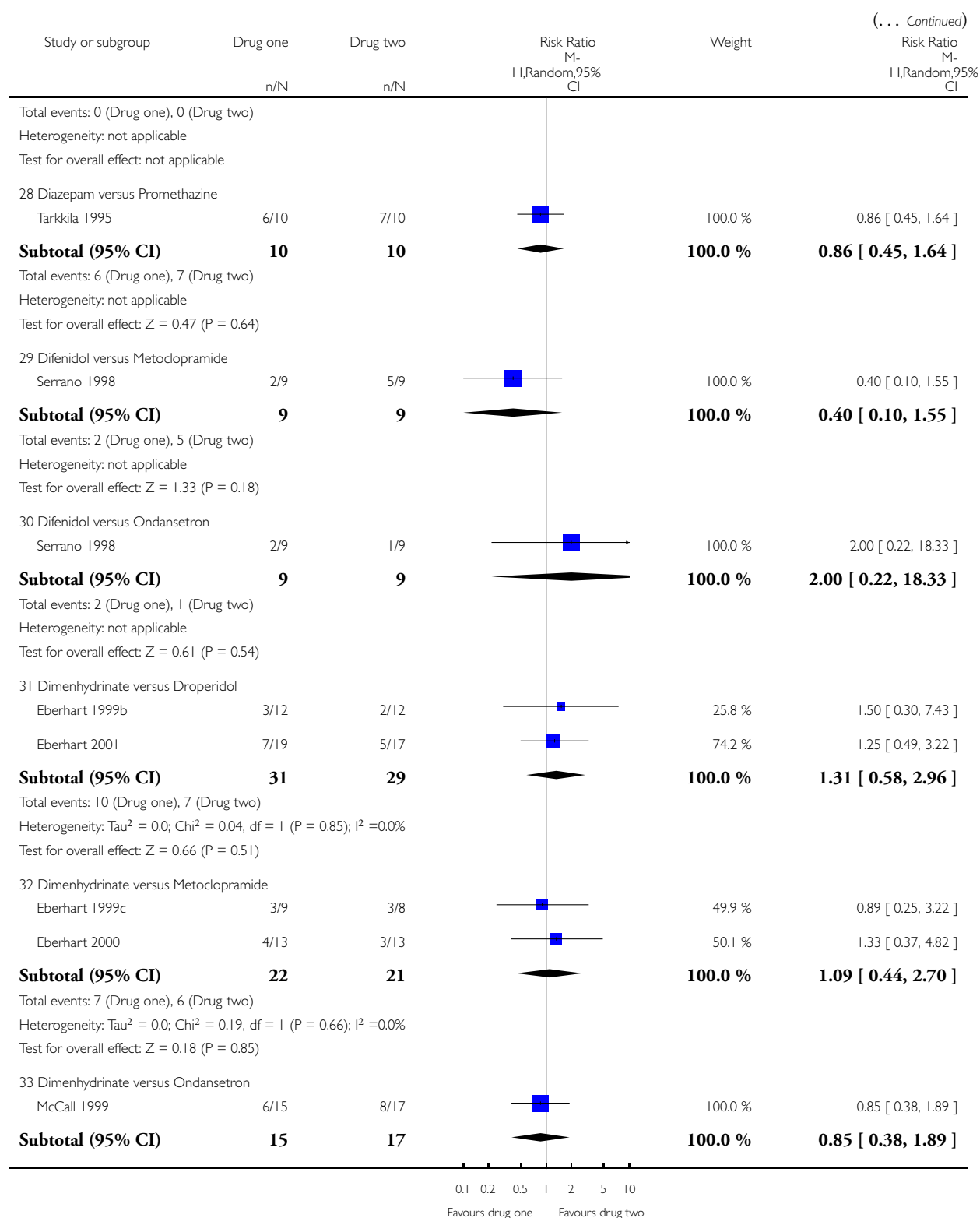


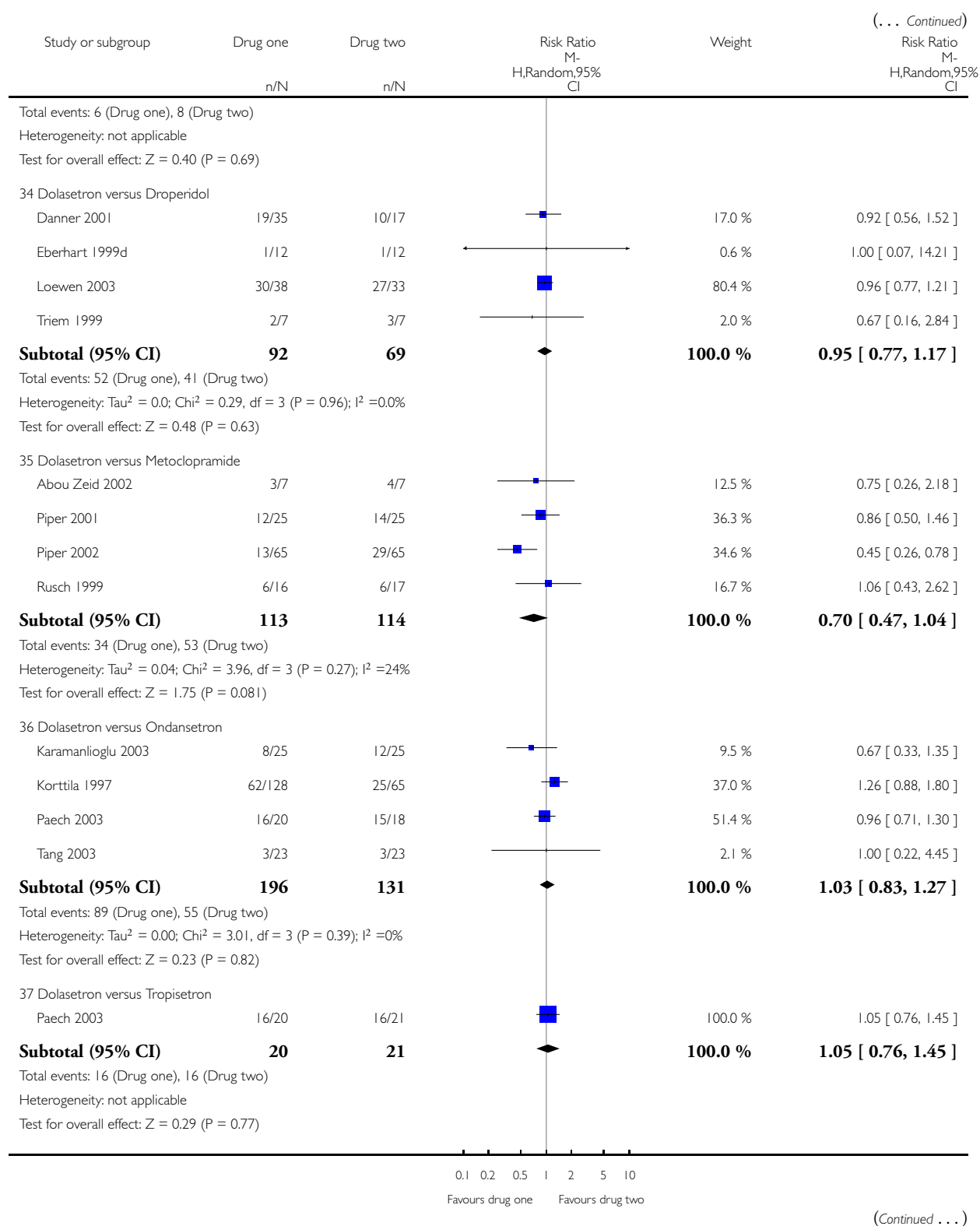


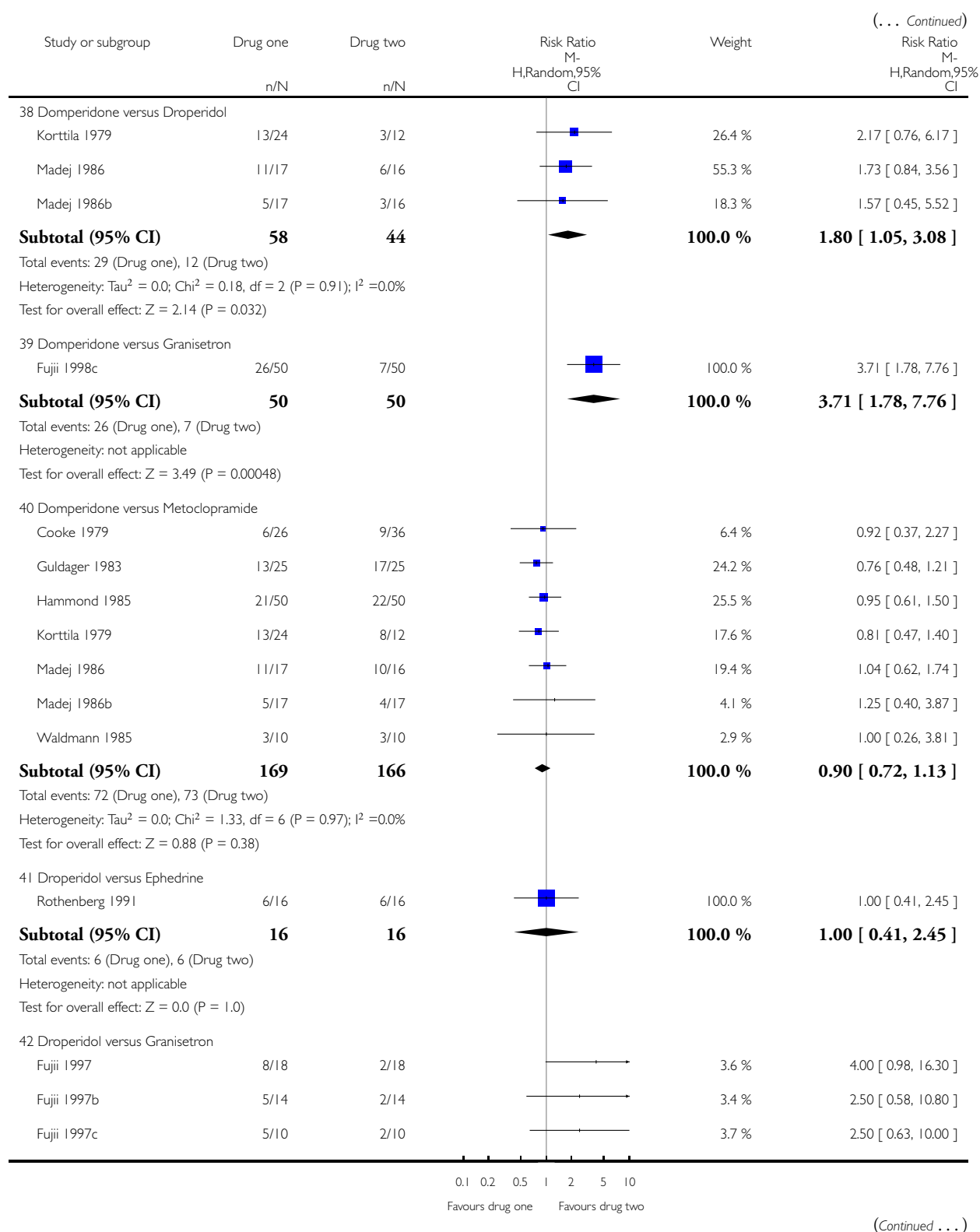


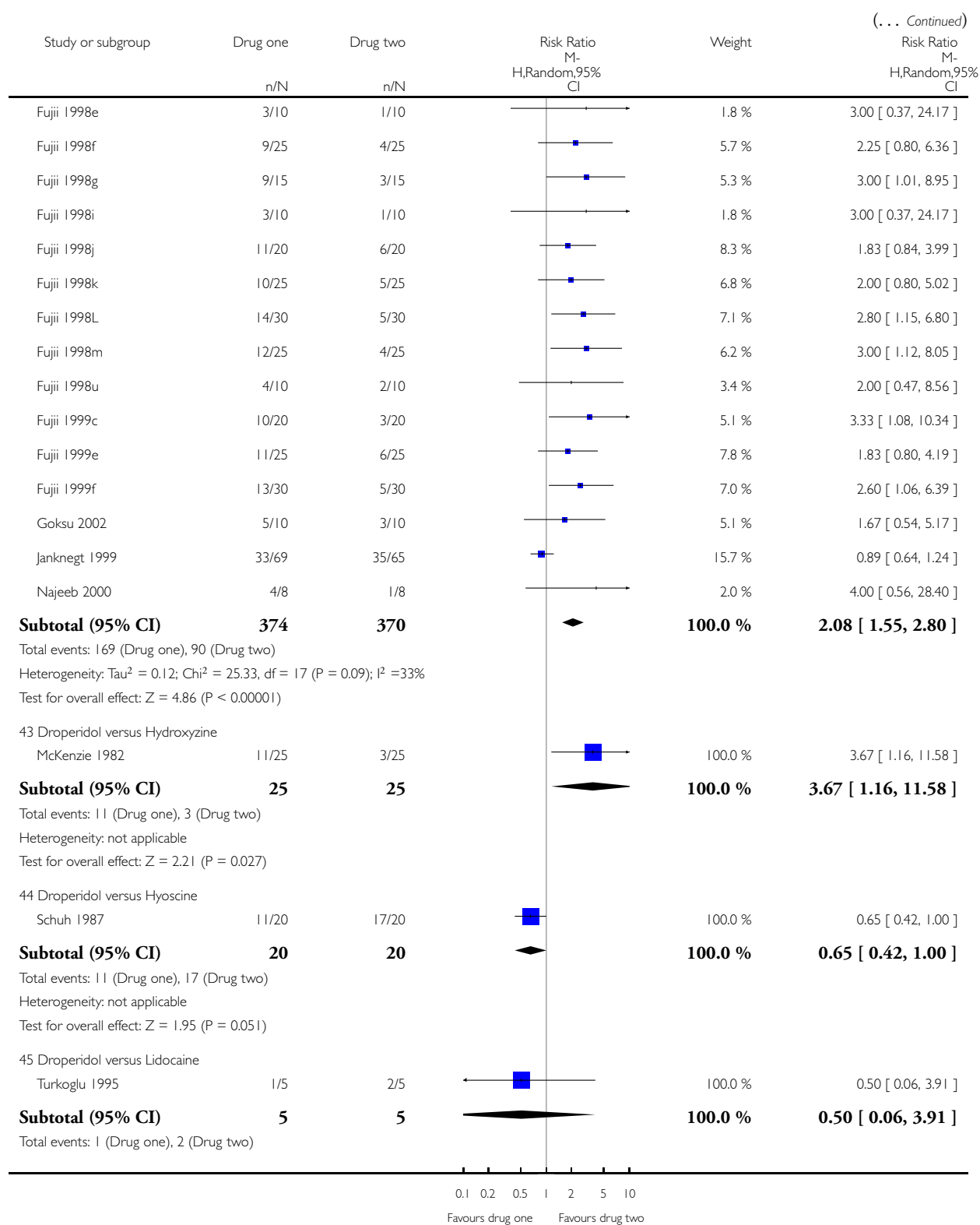


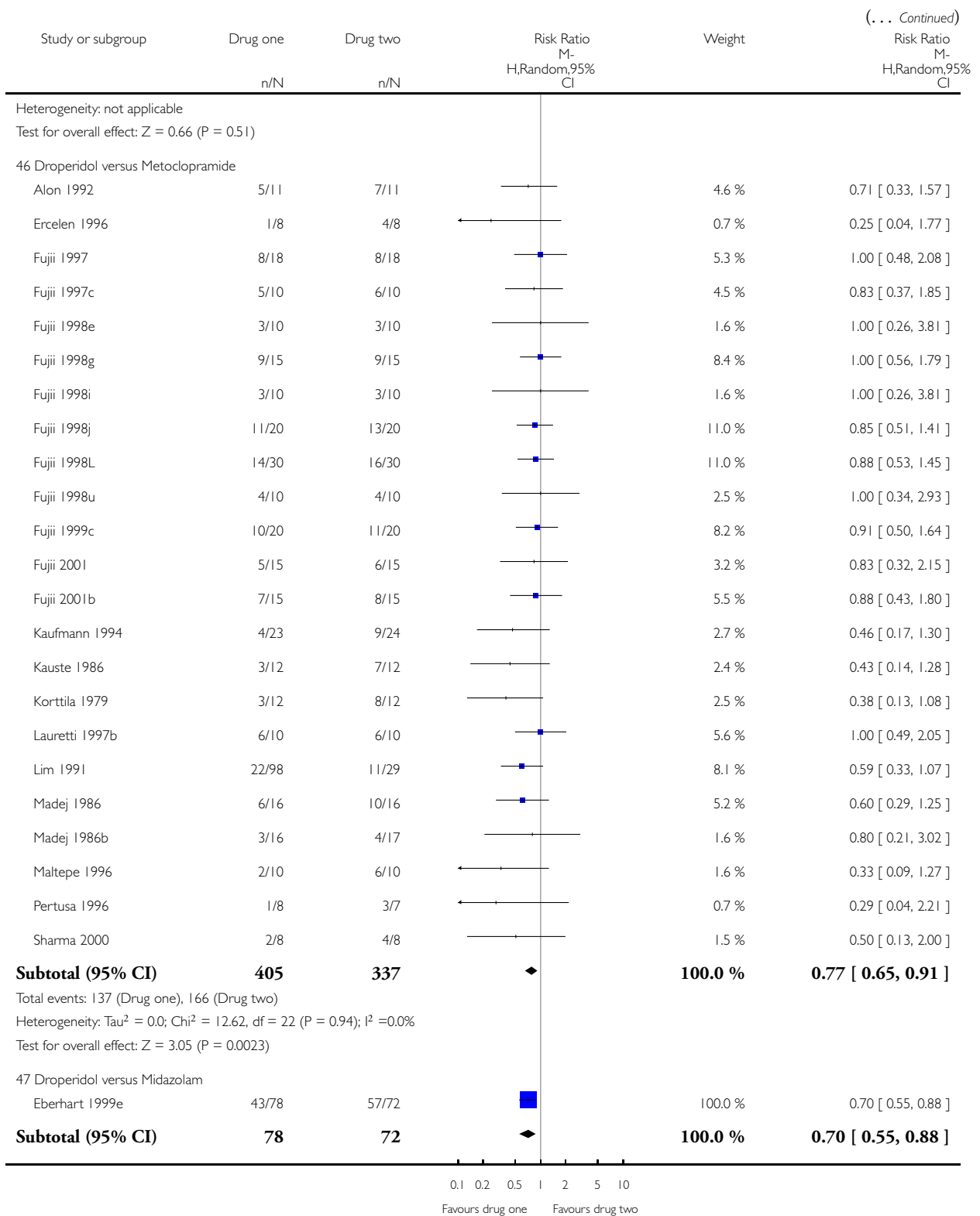


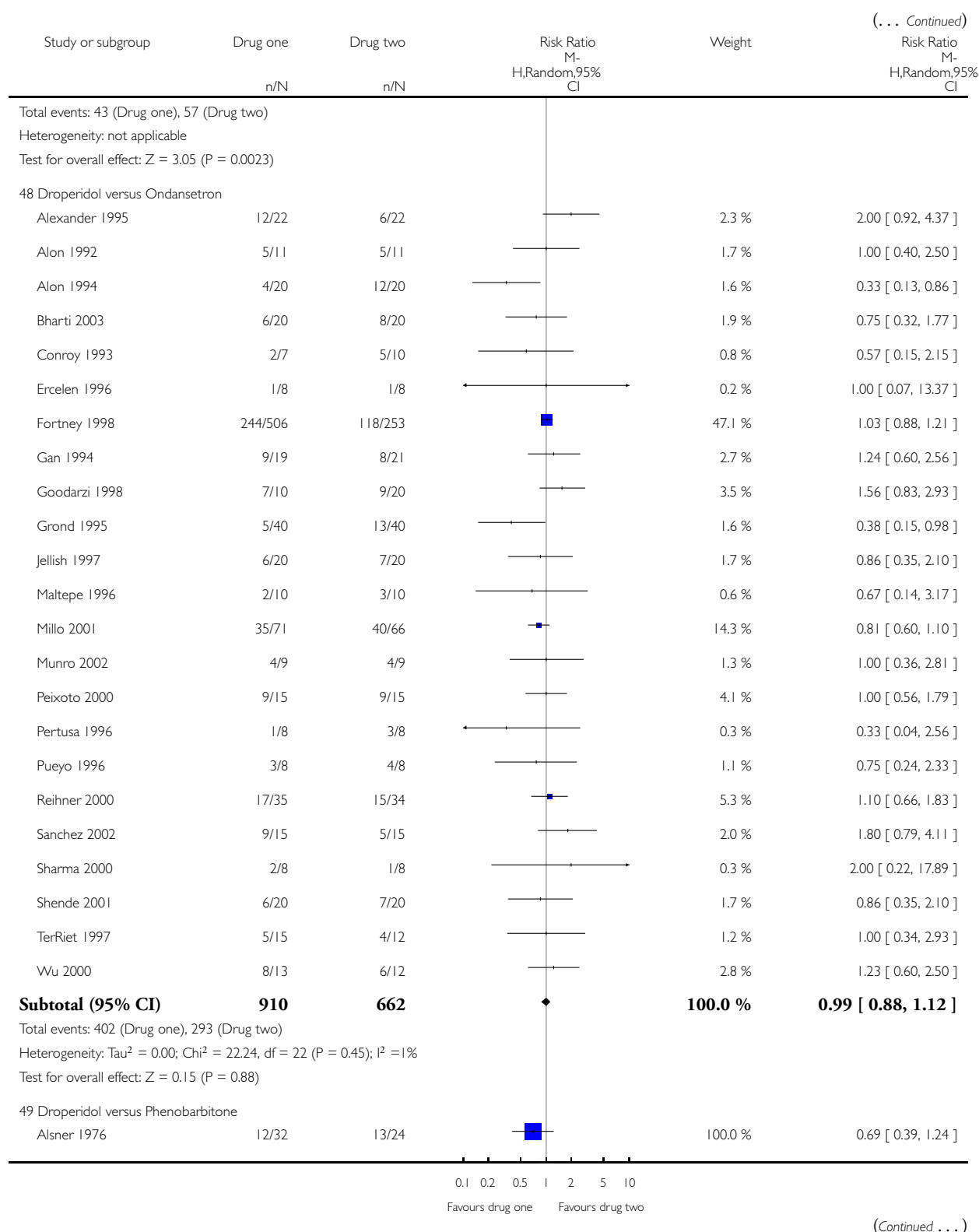




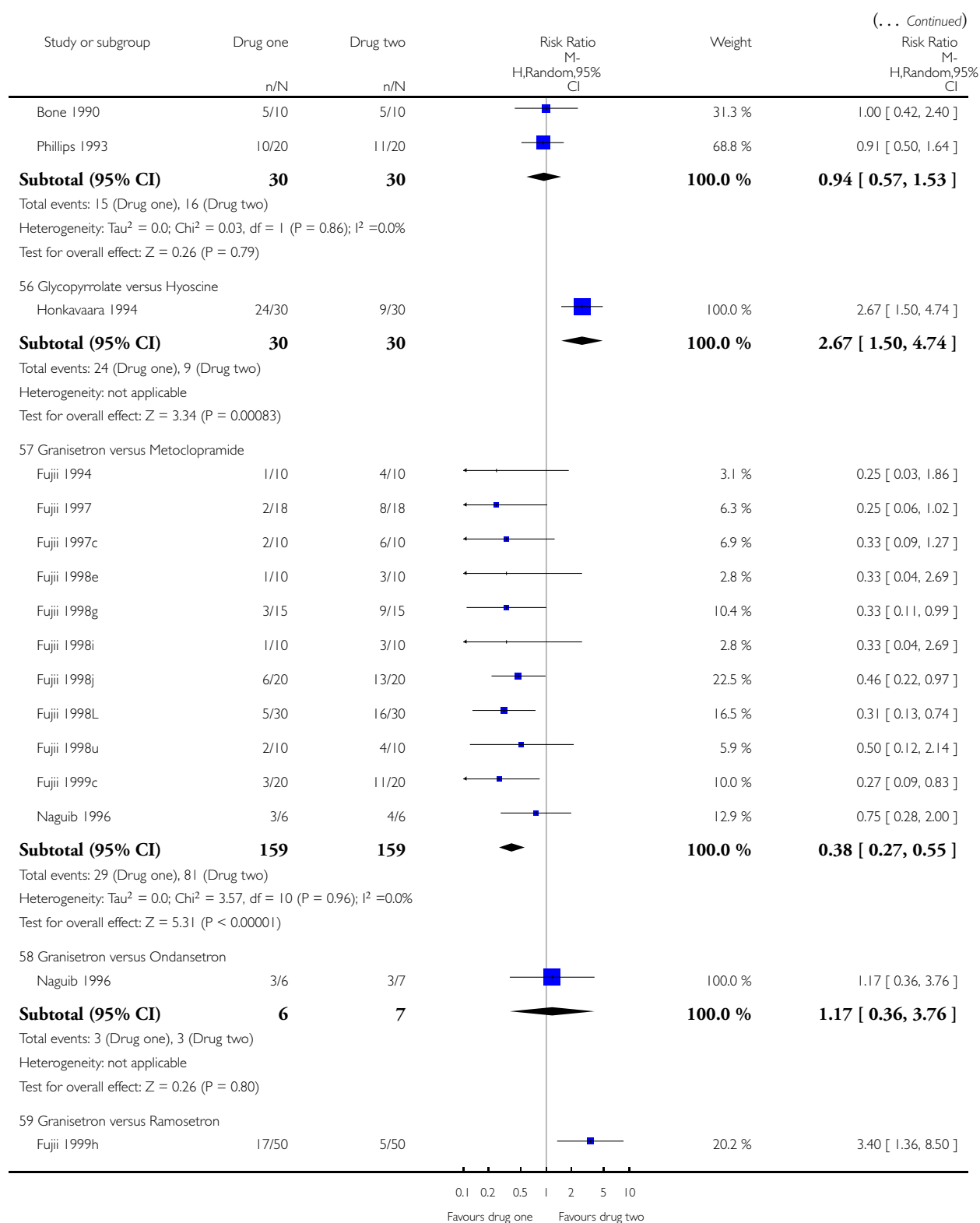




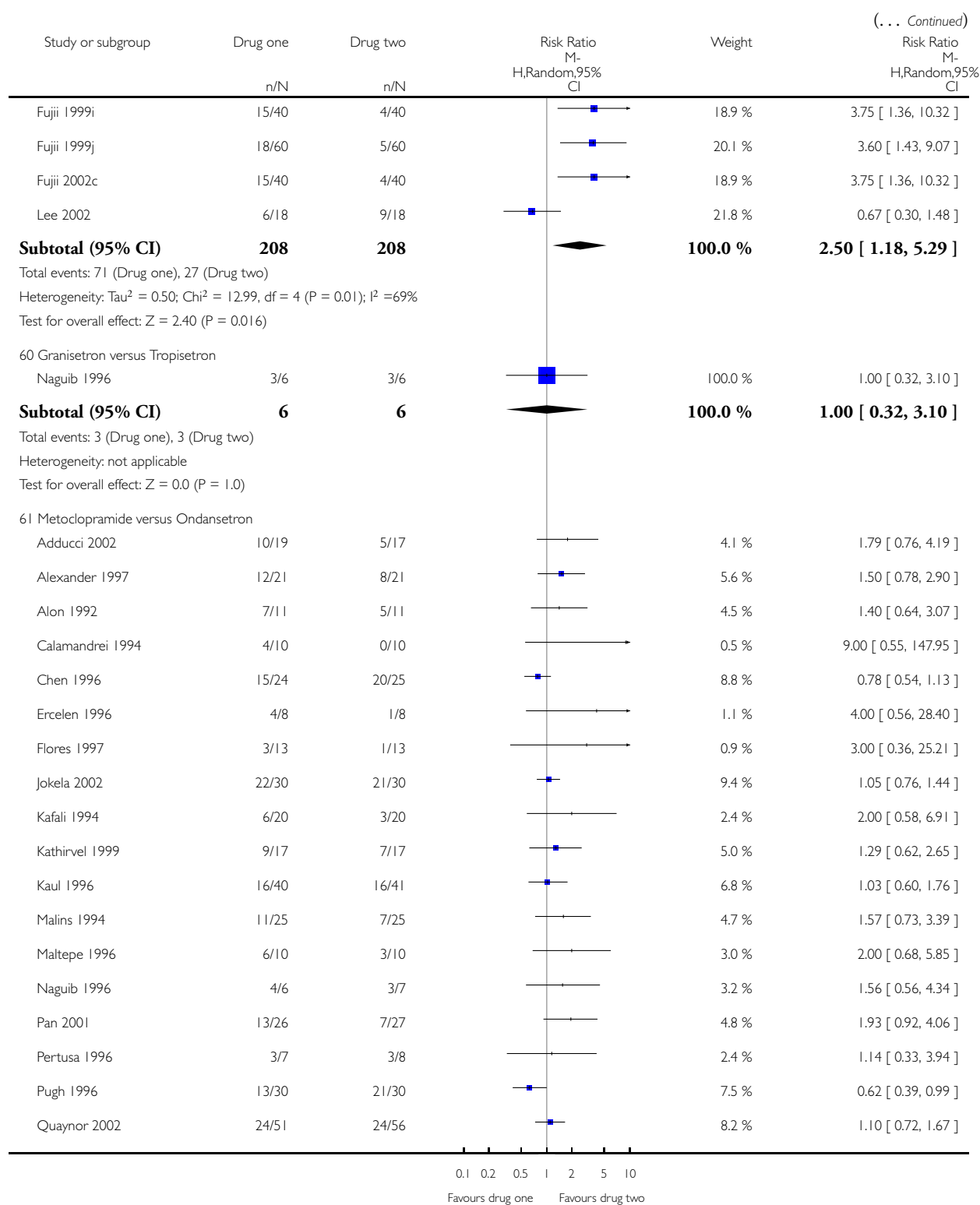




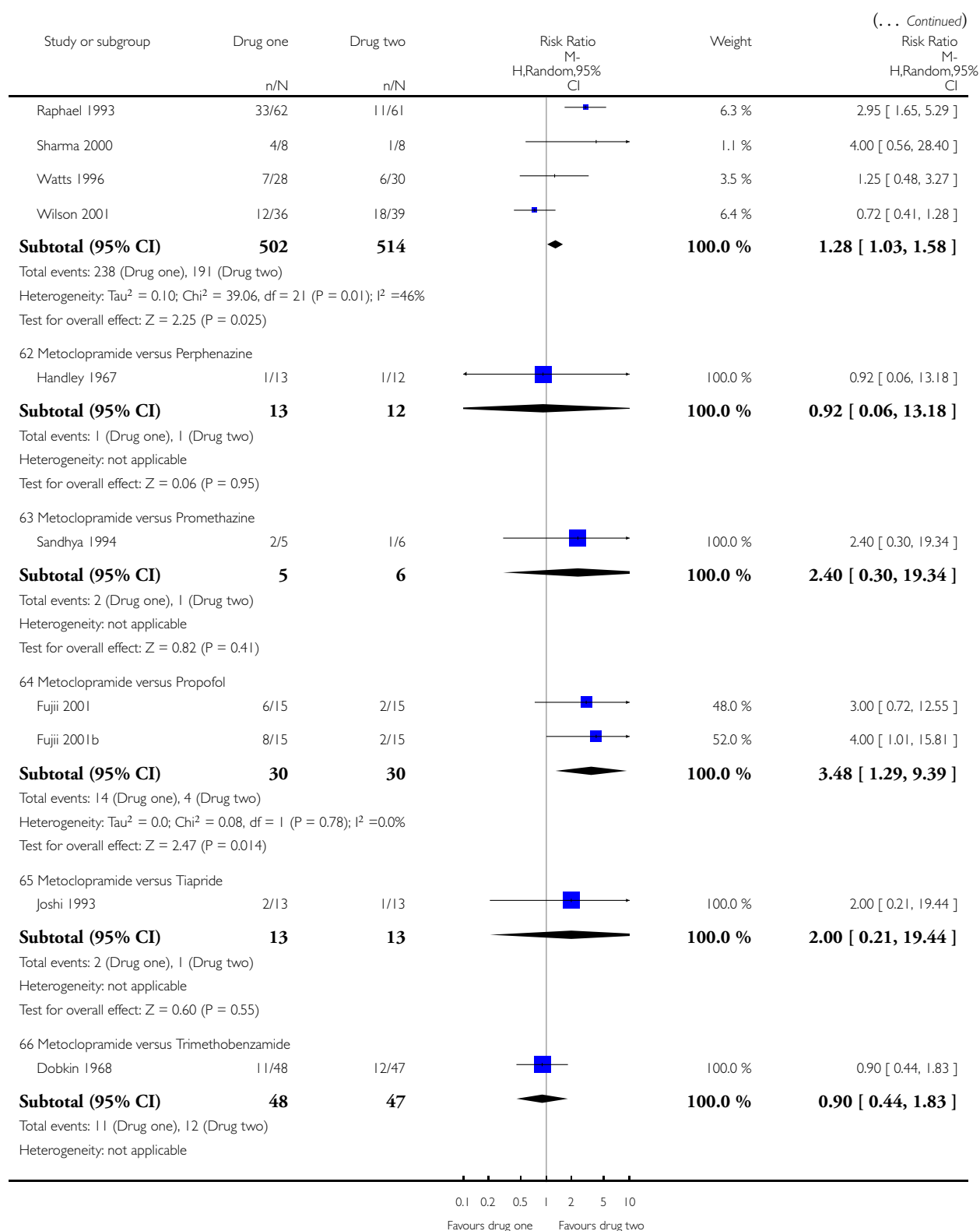




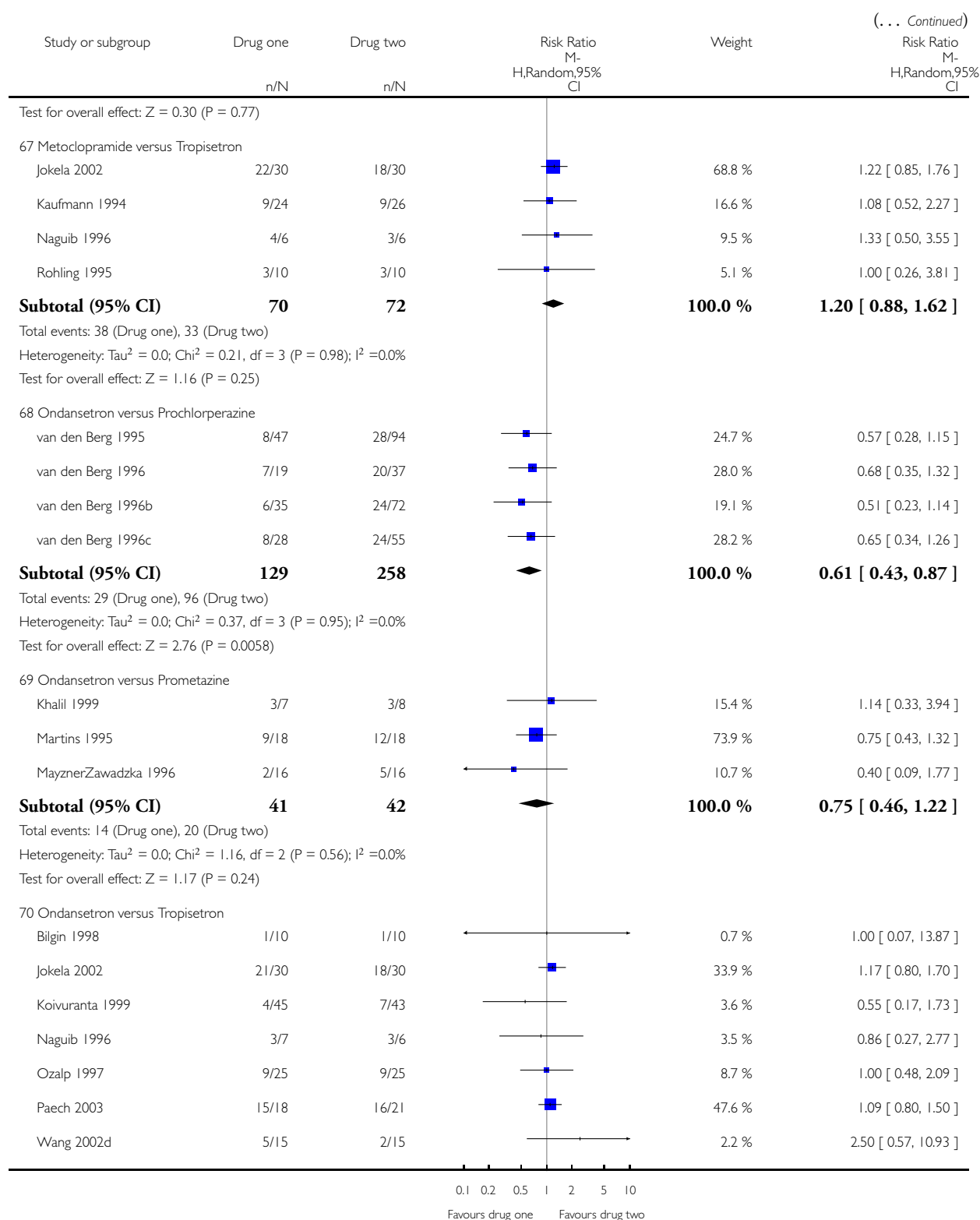


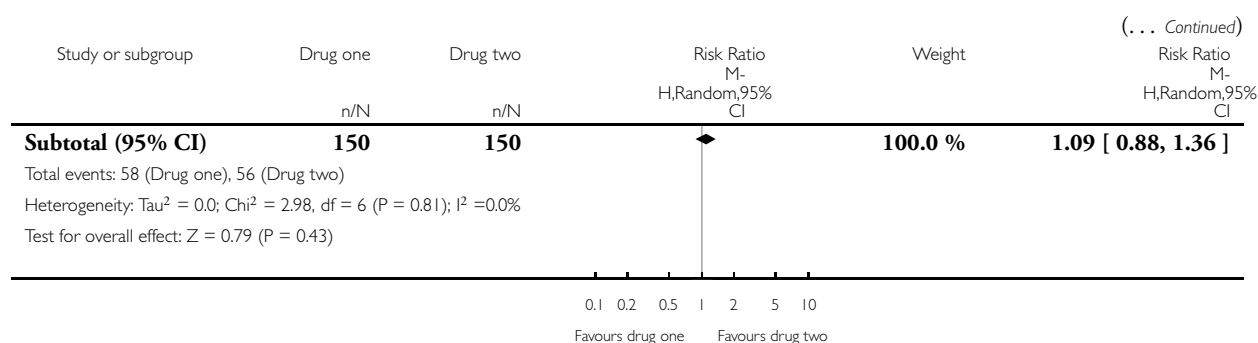


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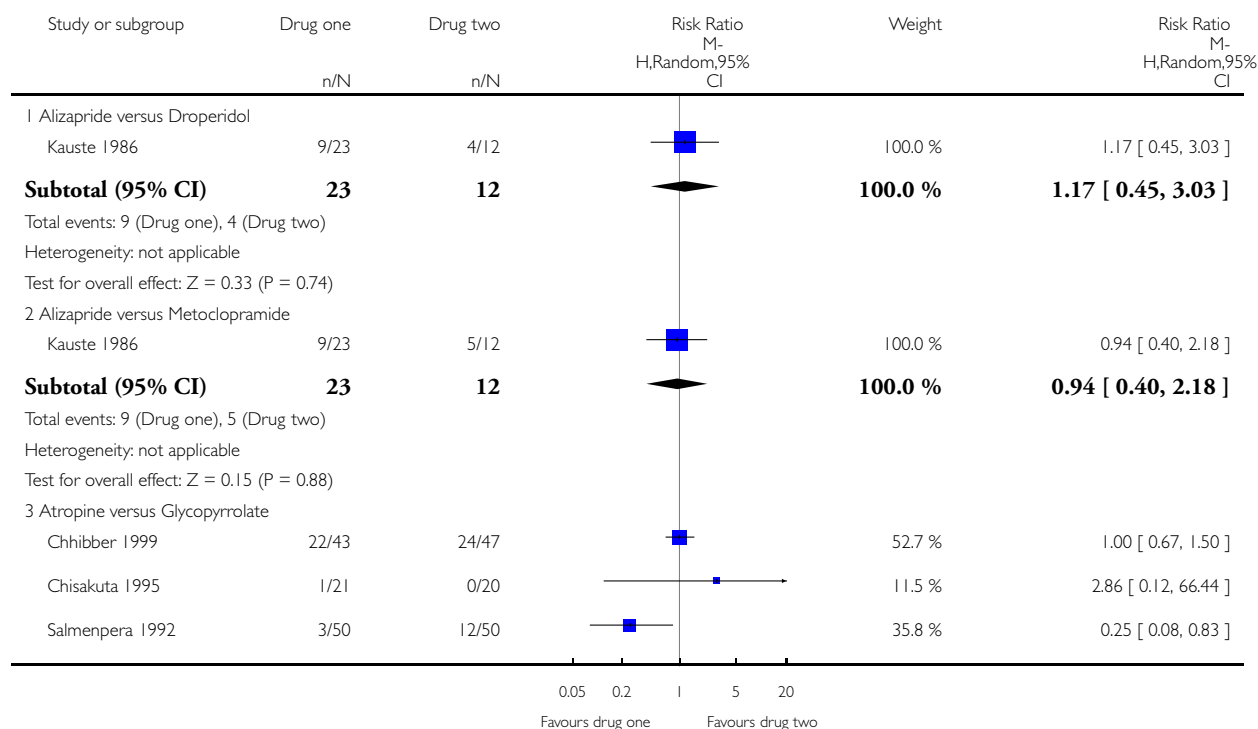


### Analysis 3.4. Comparison 3 PRIMARY ANALYSIS: Drug versus Drug, Outcome 4 Rescue antiemetic.

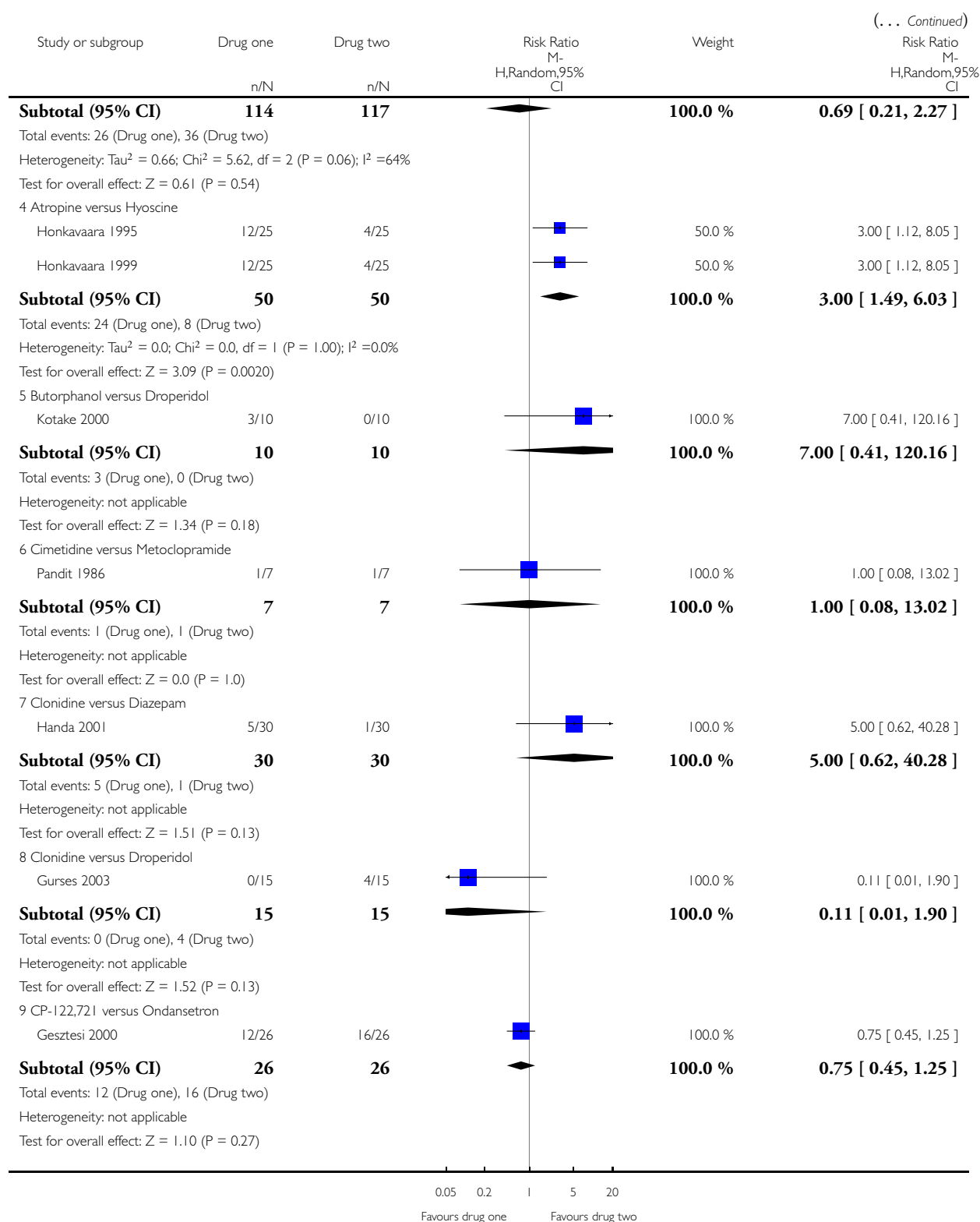
Review: Drugs for preventing postoperative nausea and vomiting

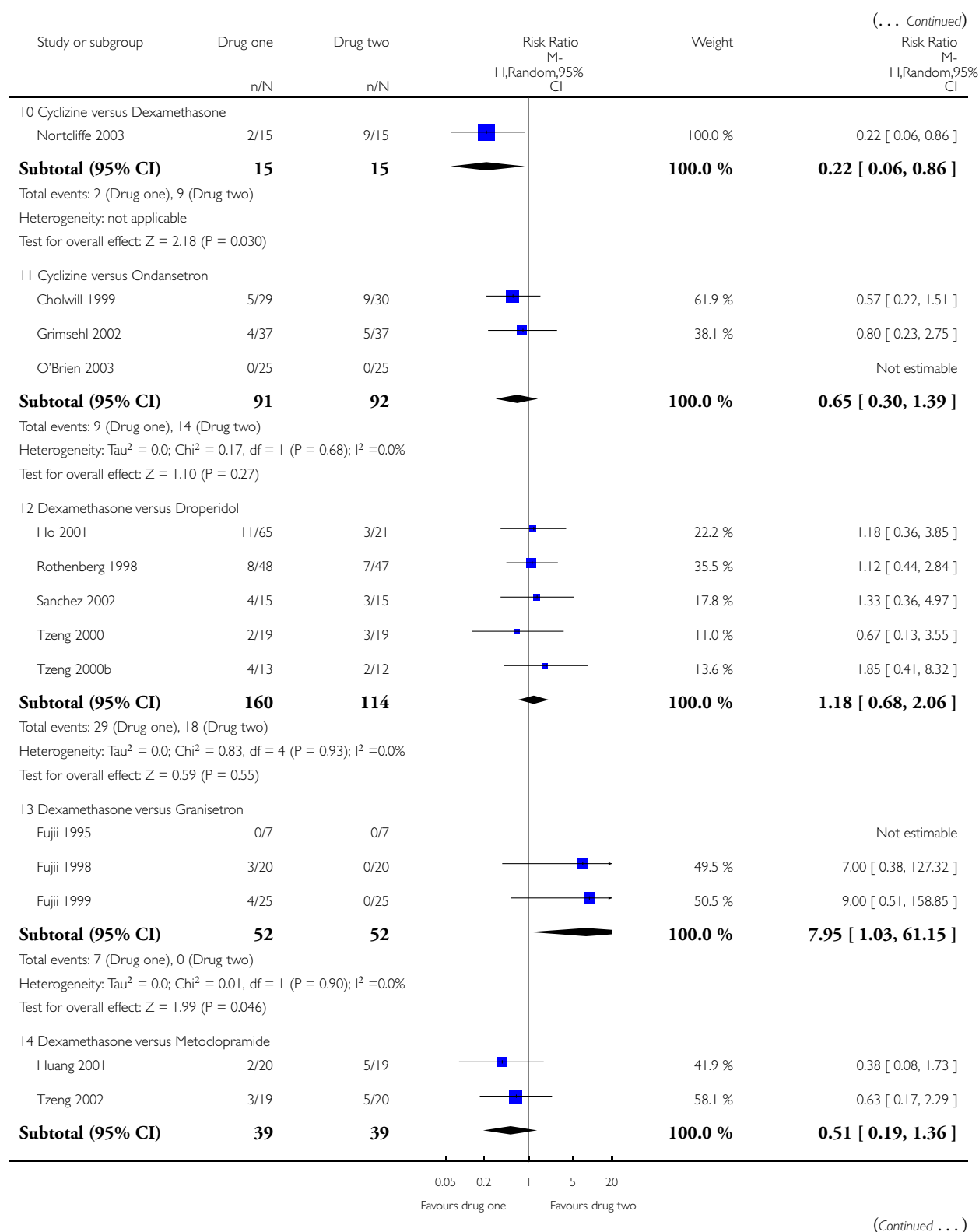
Comparison: 3 PRIMARY ANALYSIS: Drug versus Drug

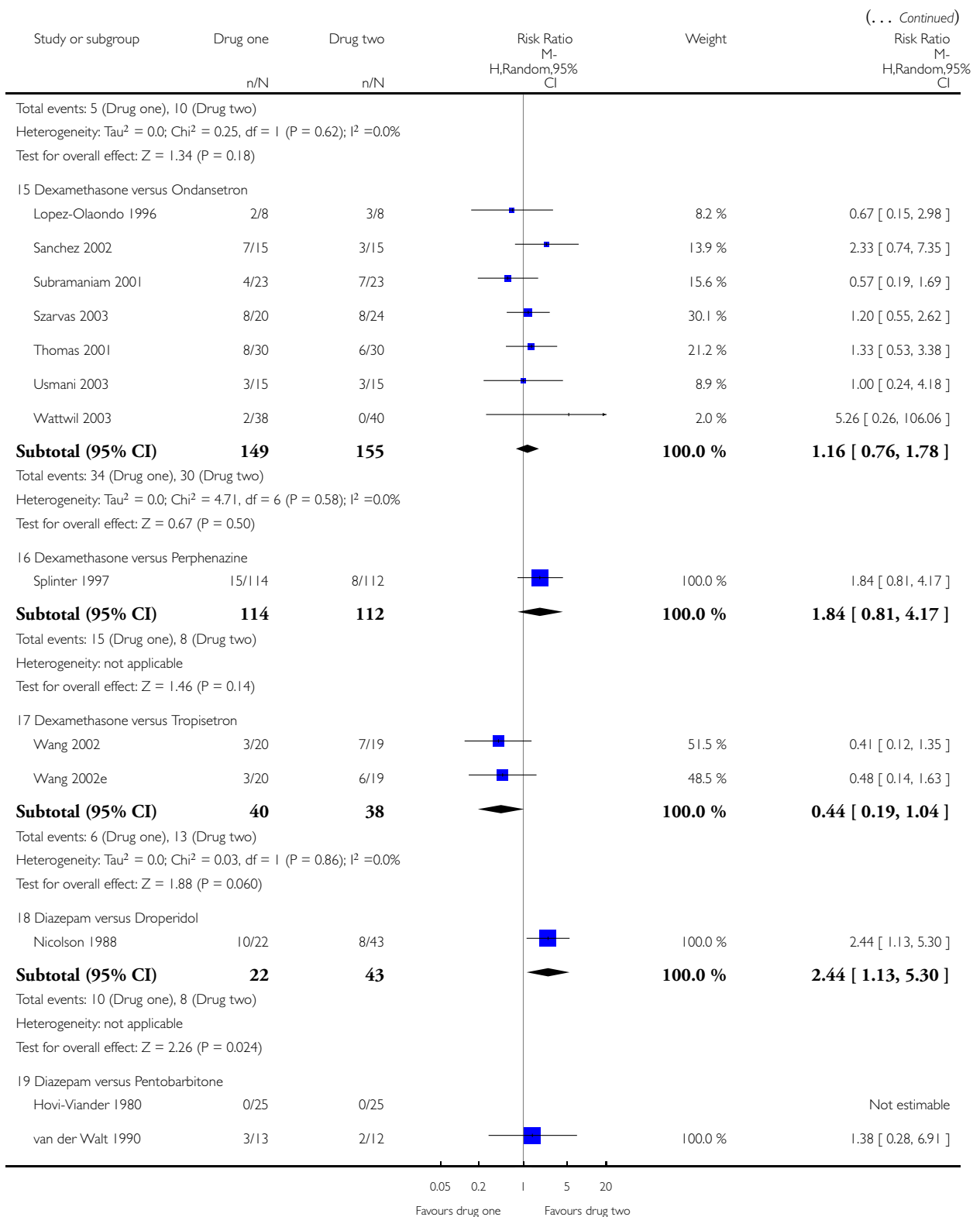
Outcome: 4 Rescue antiemetic

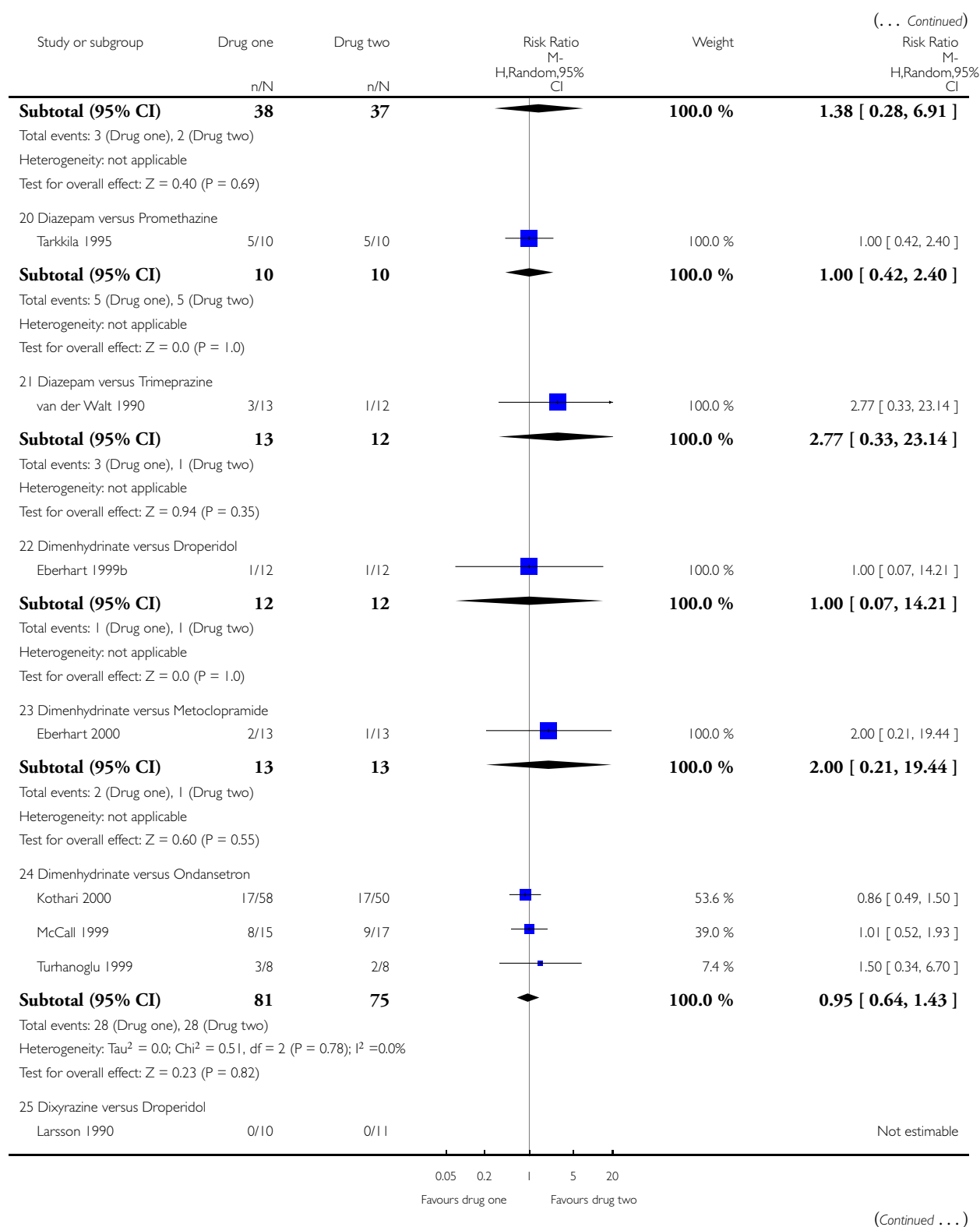


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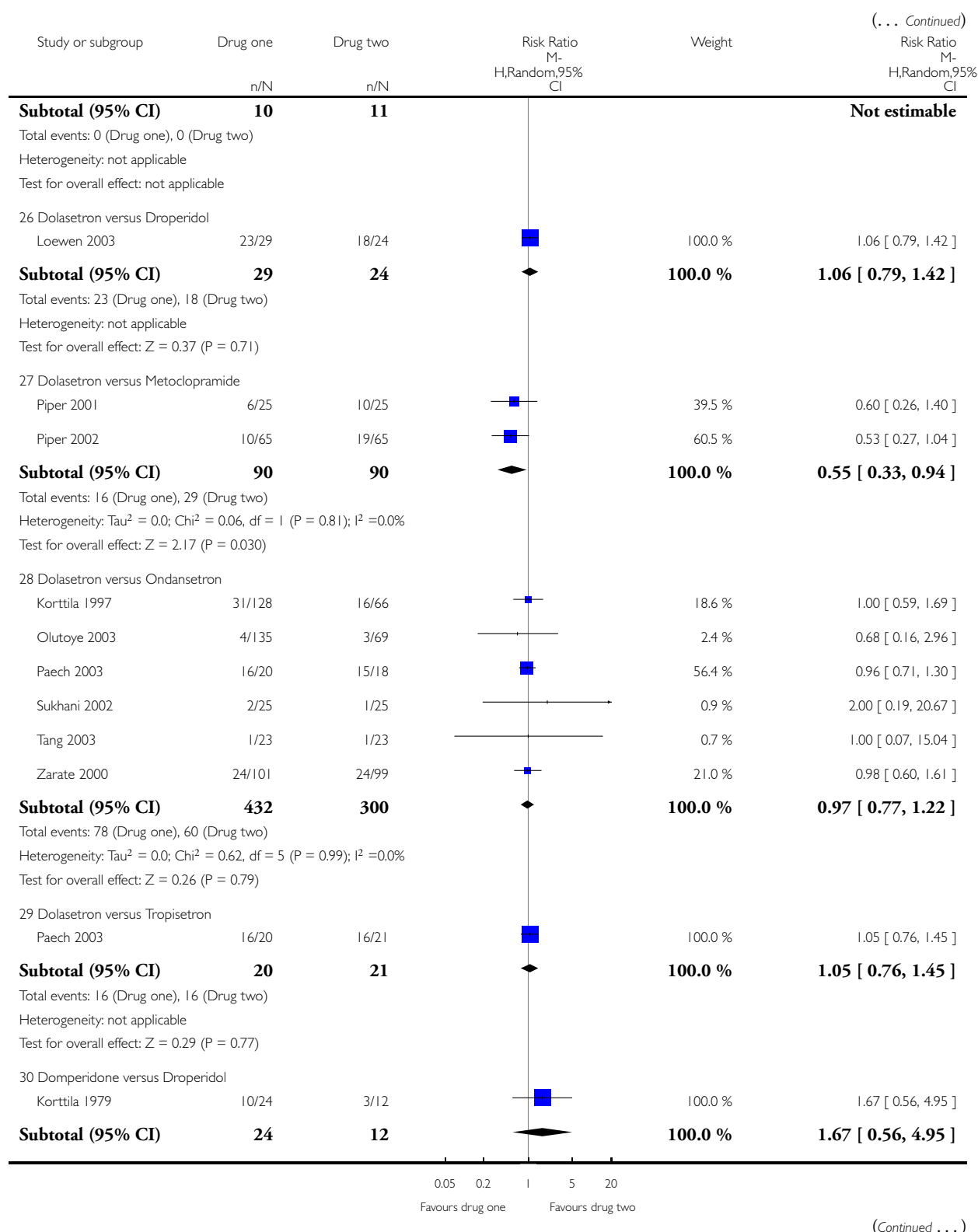


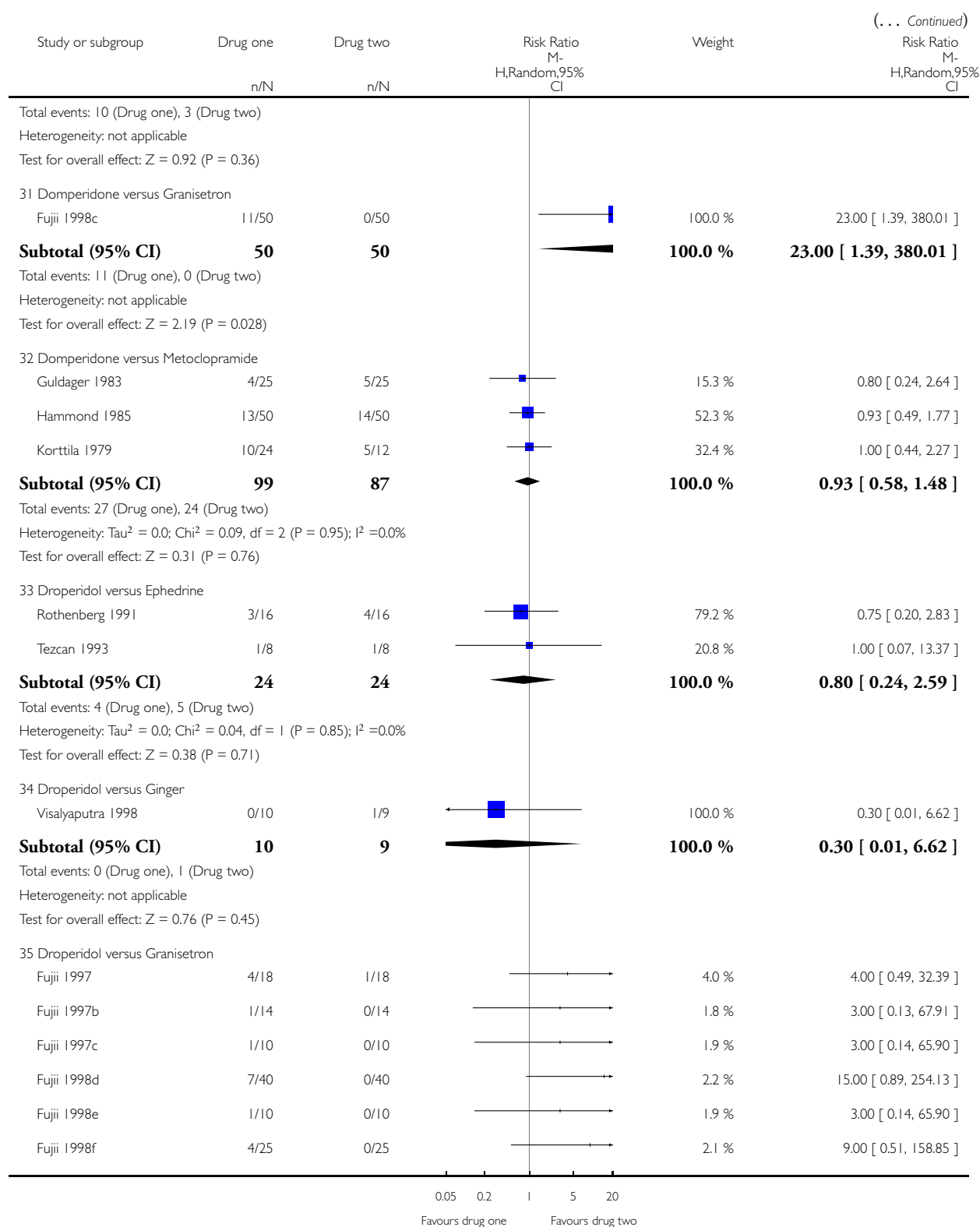


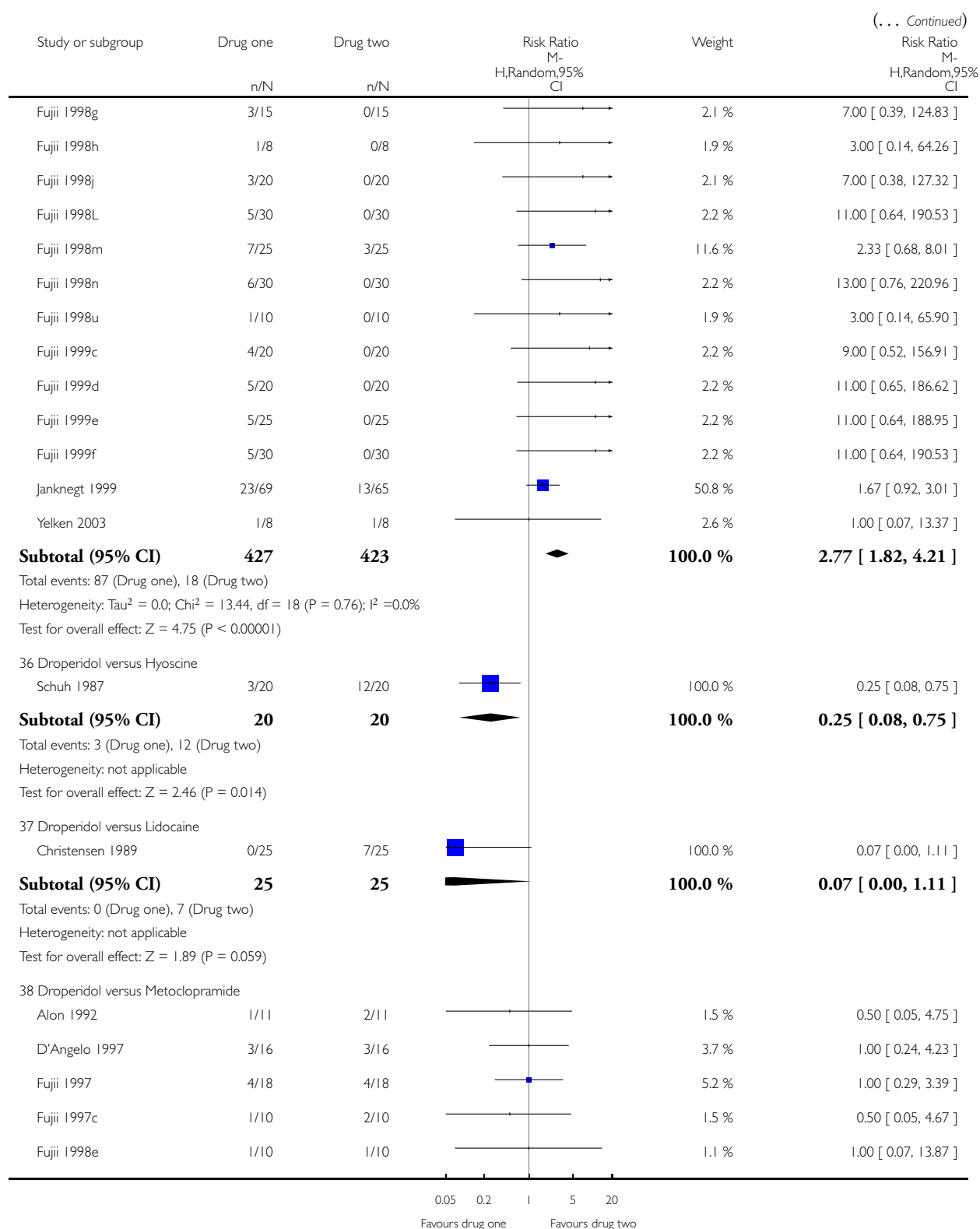




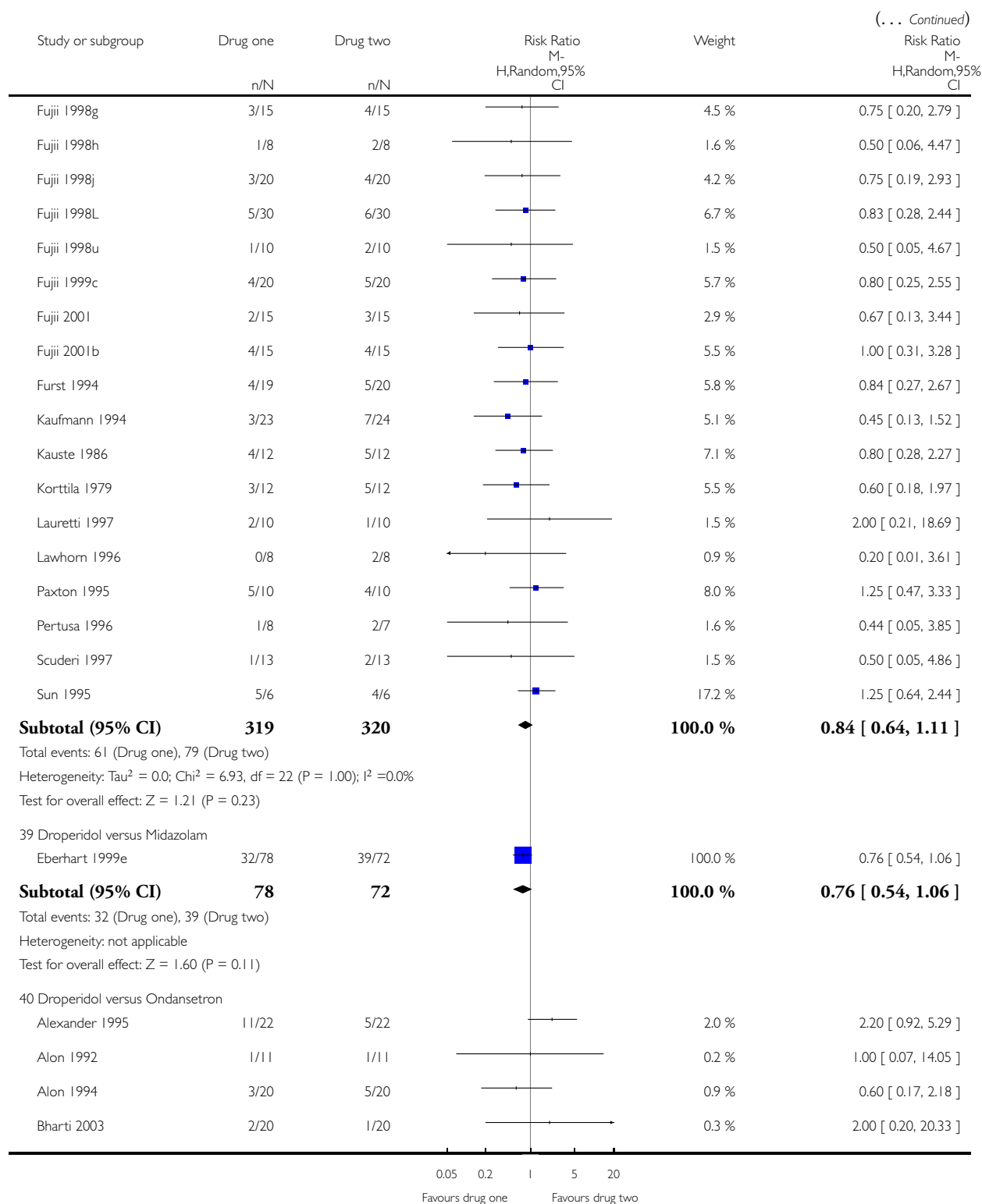




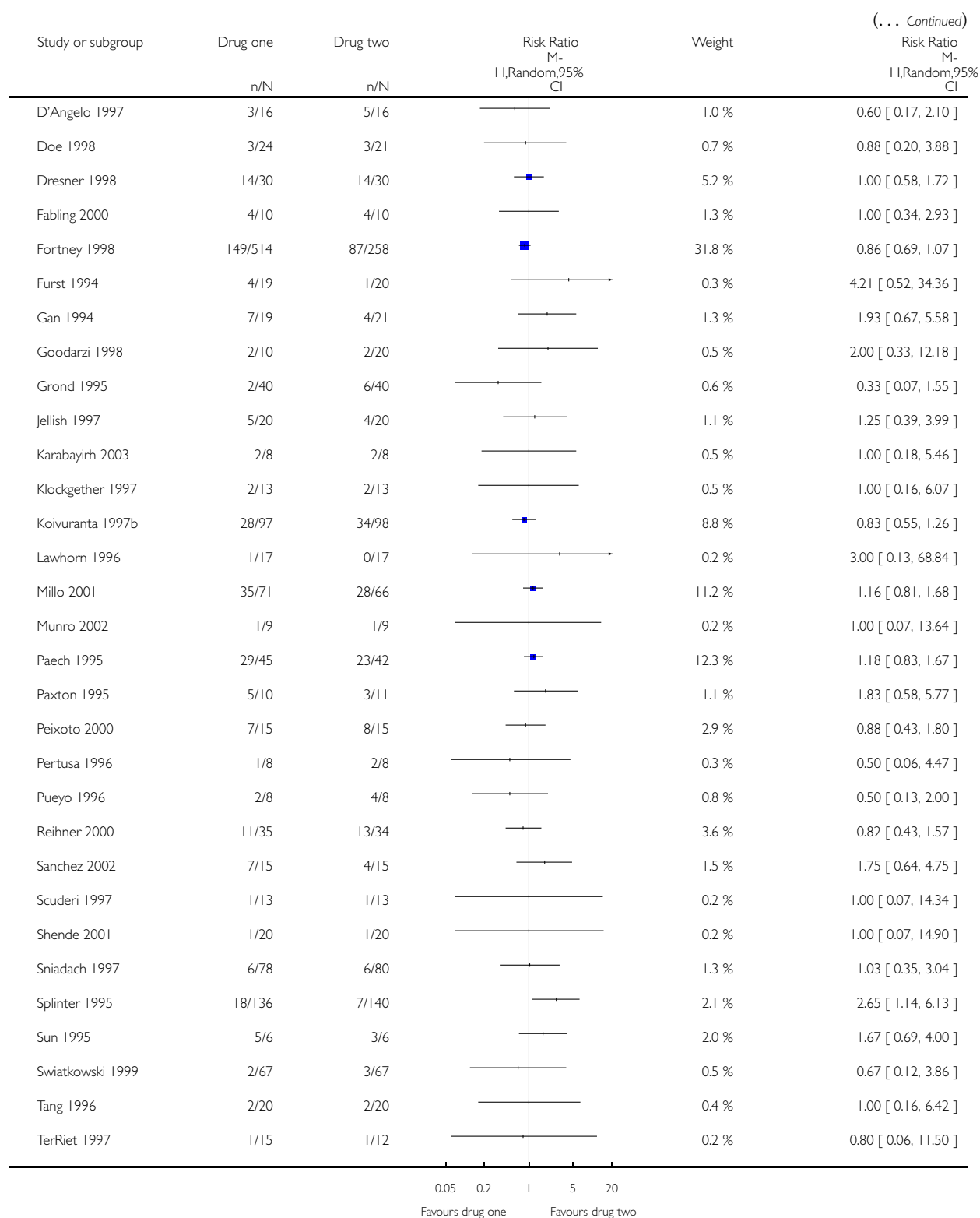


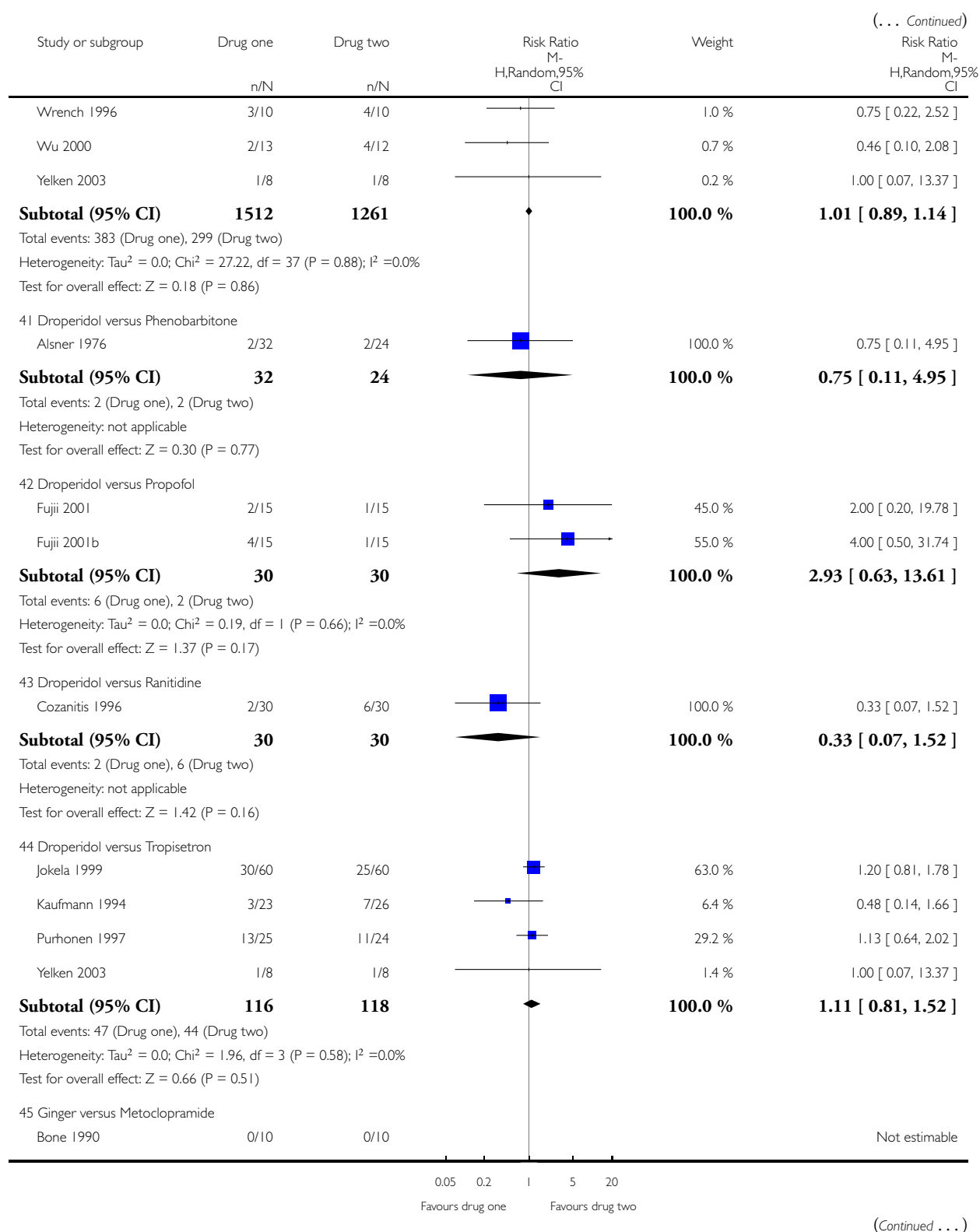


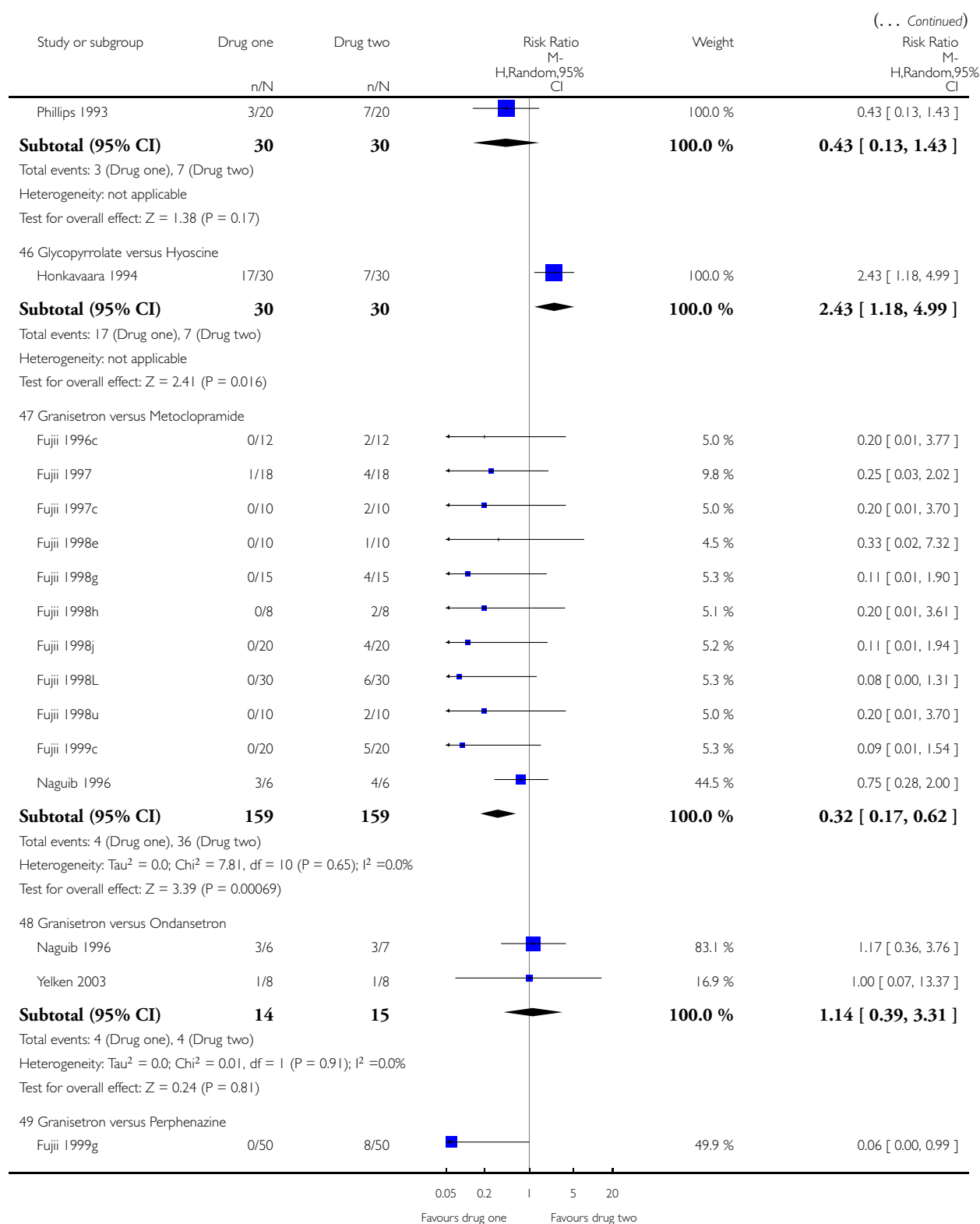
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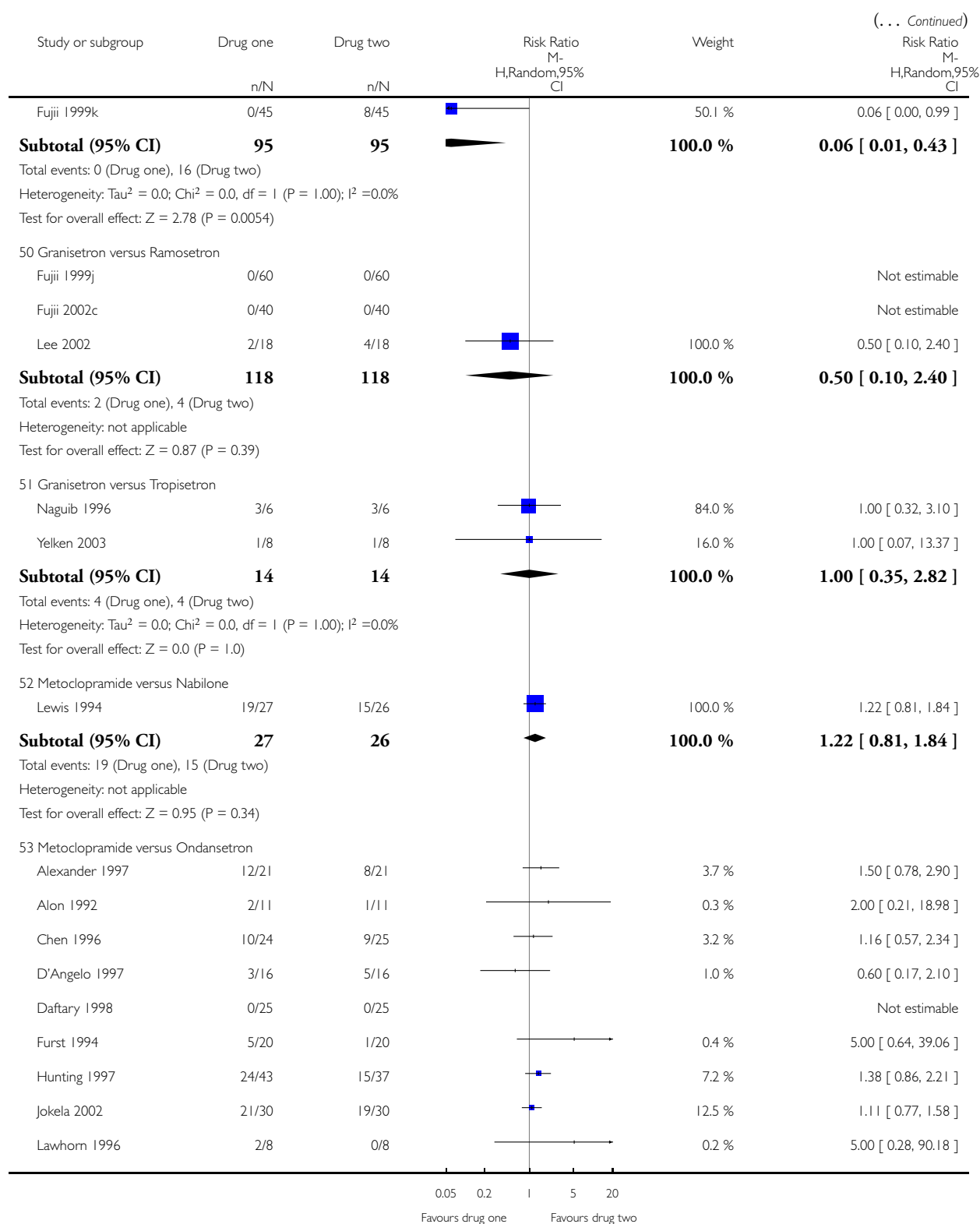


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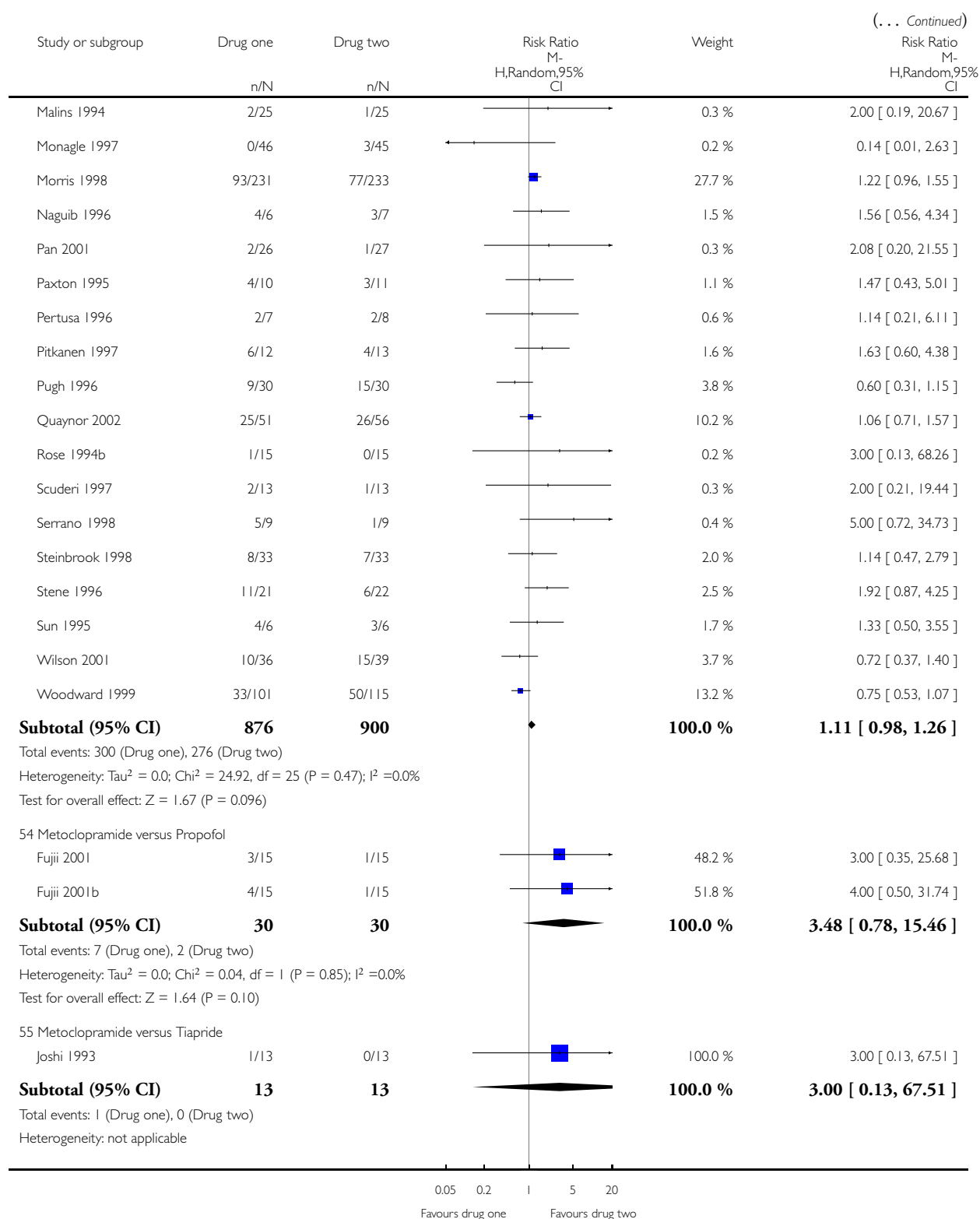


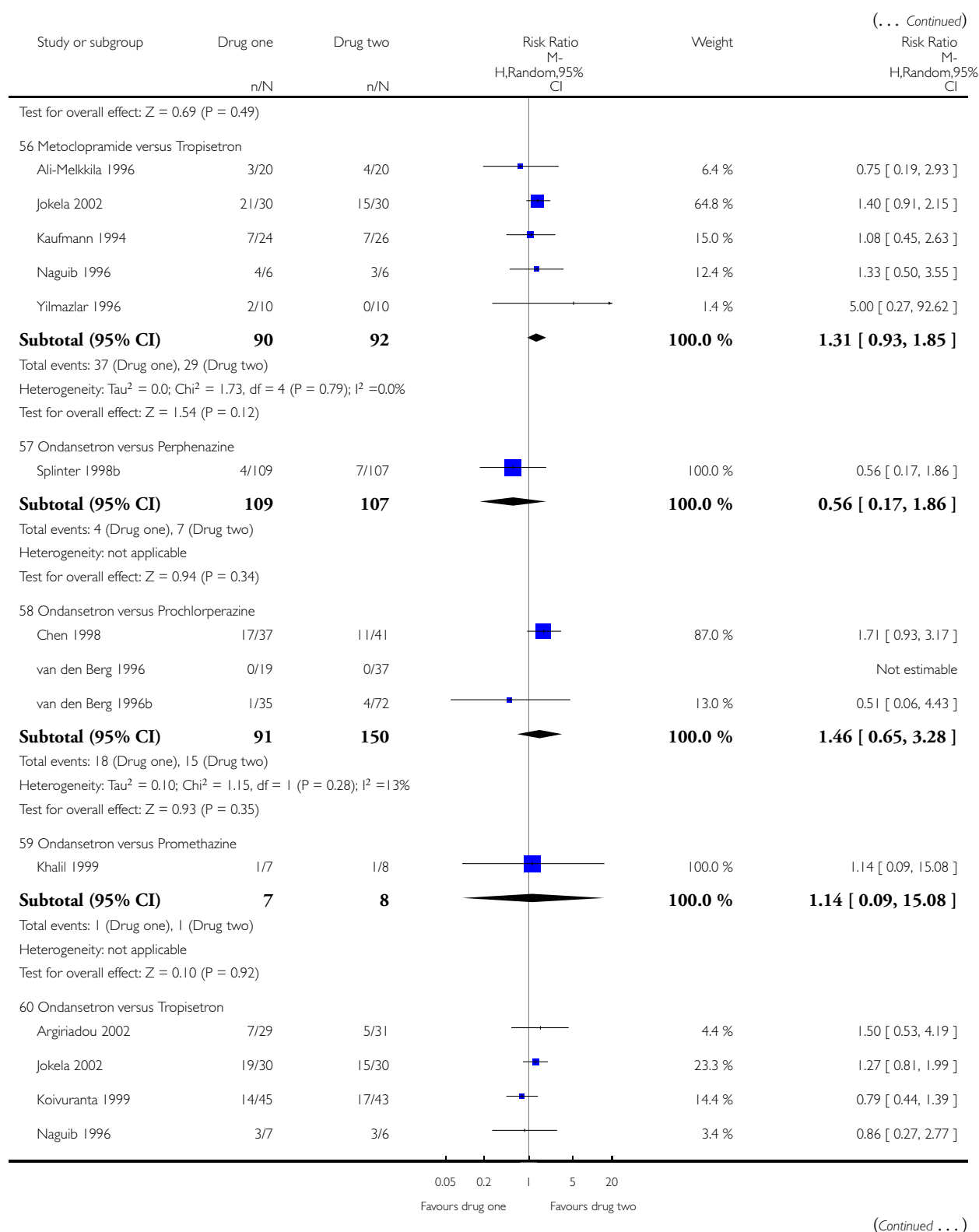


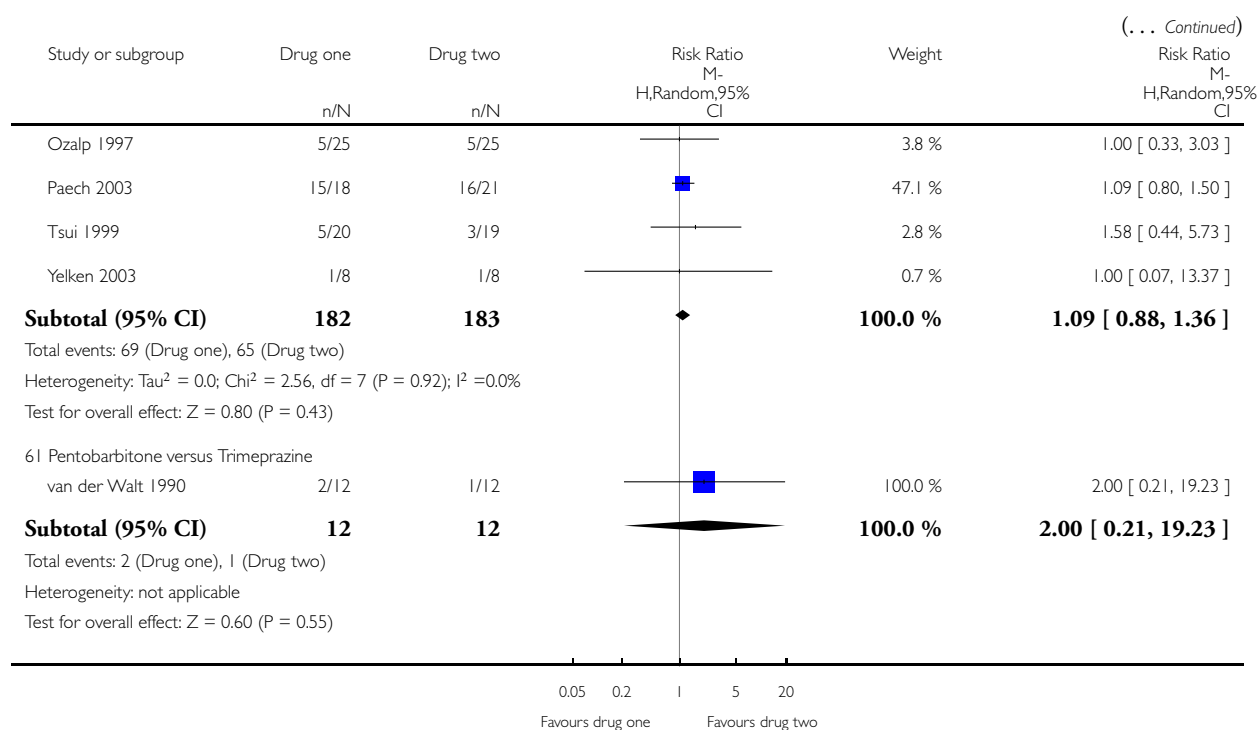










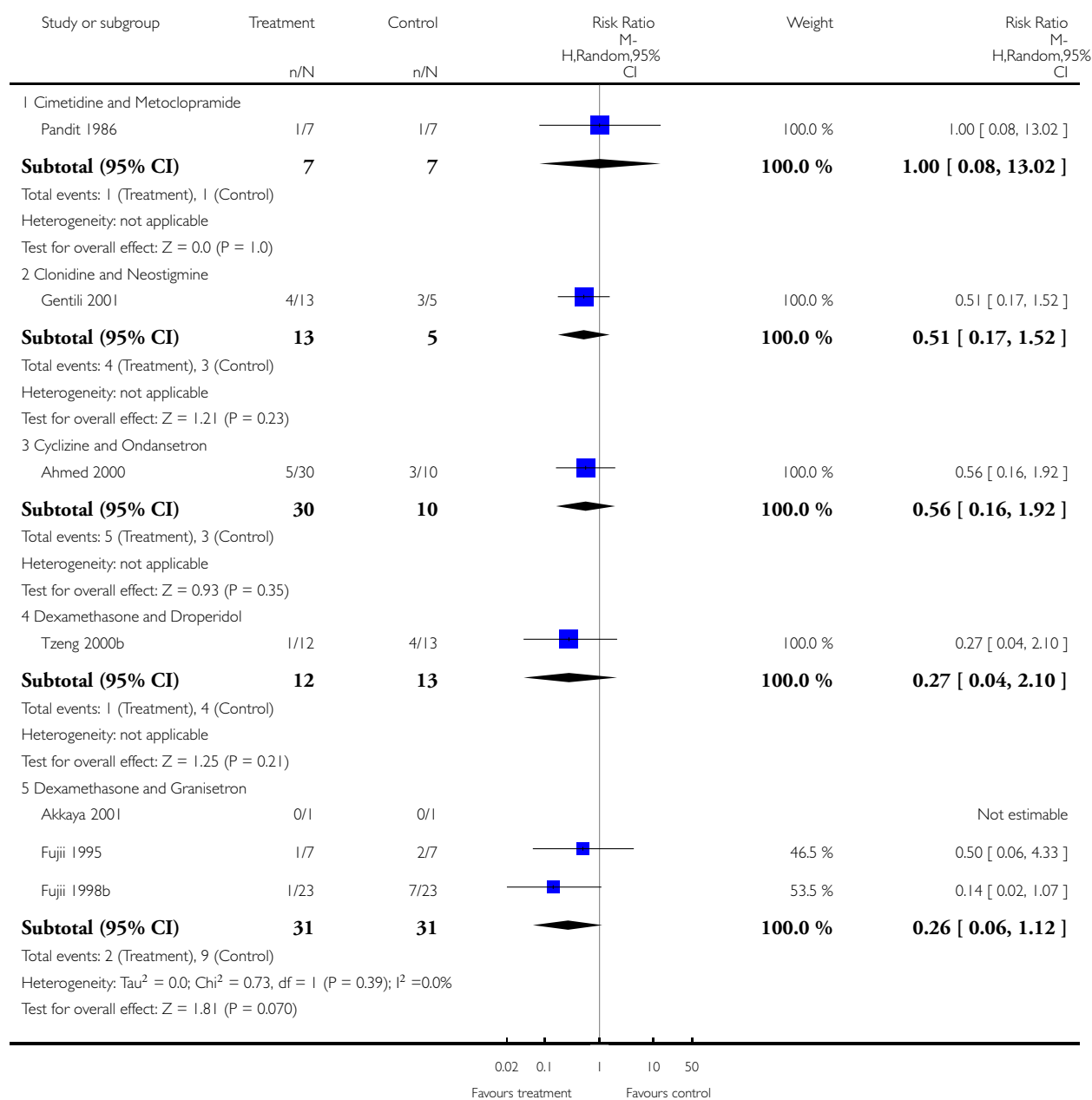


# Analysis 4.1. Comparison 4 PRIMARY ANALYSIS: Placebo versus Drugs, Outcome 1 Nausea.

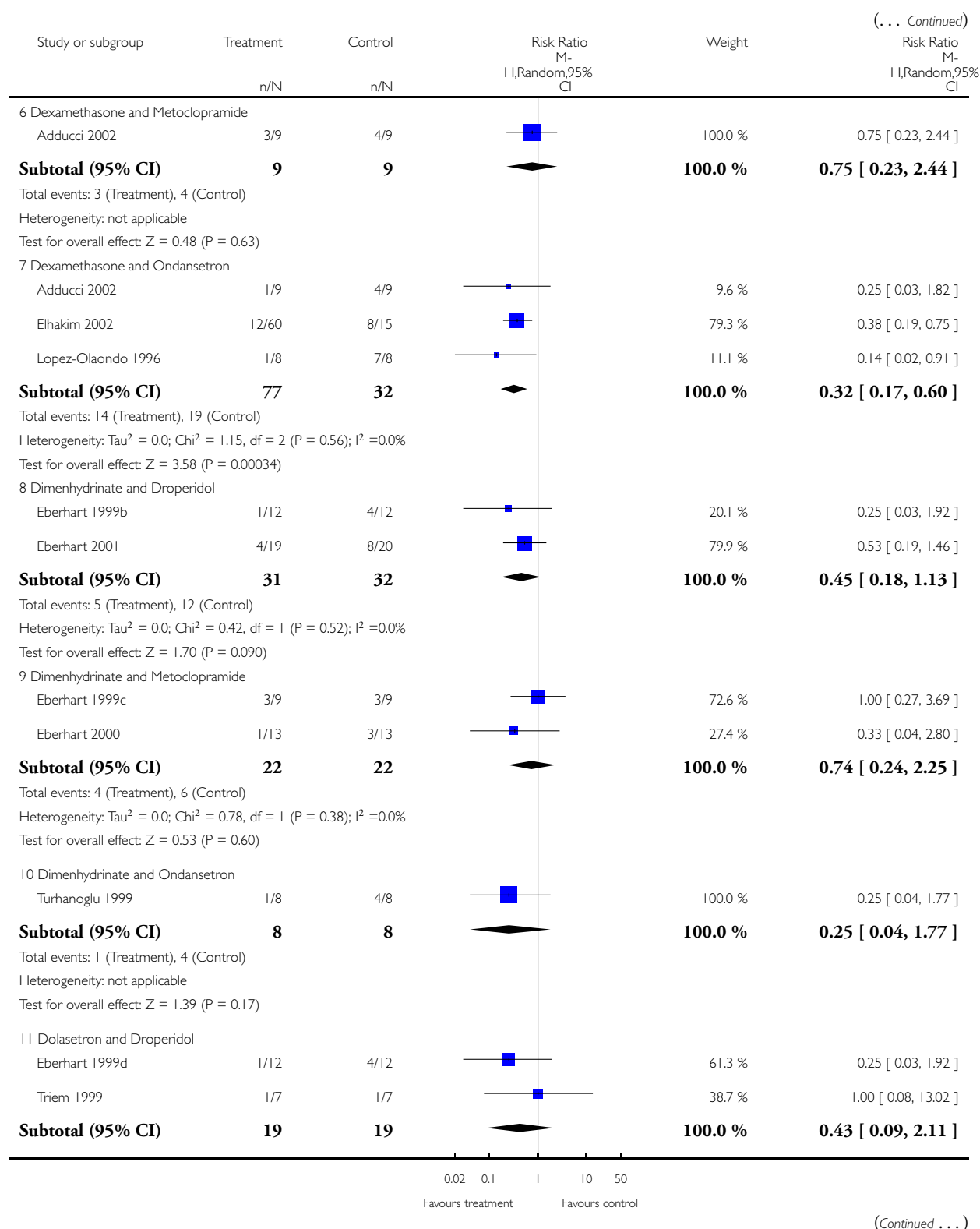
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 4 PRIMARY ANALYSIS: Placebo versus Drugs

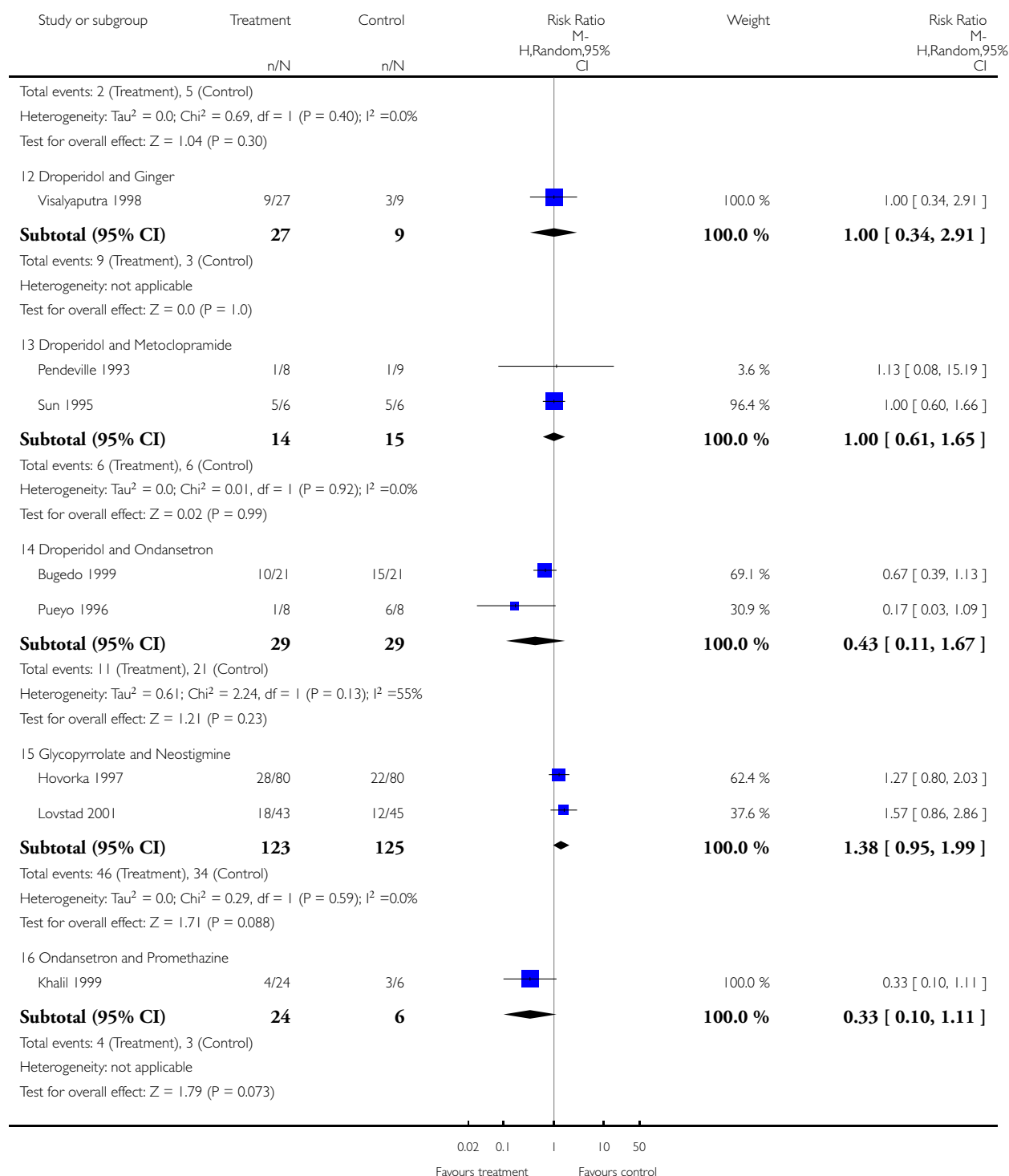
Outcome: 1 Nausea



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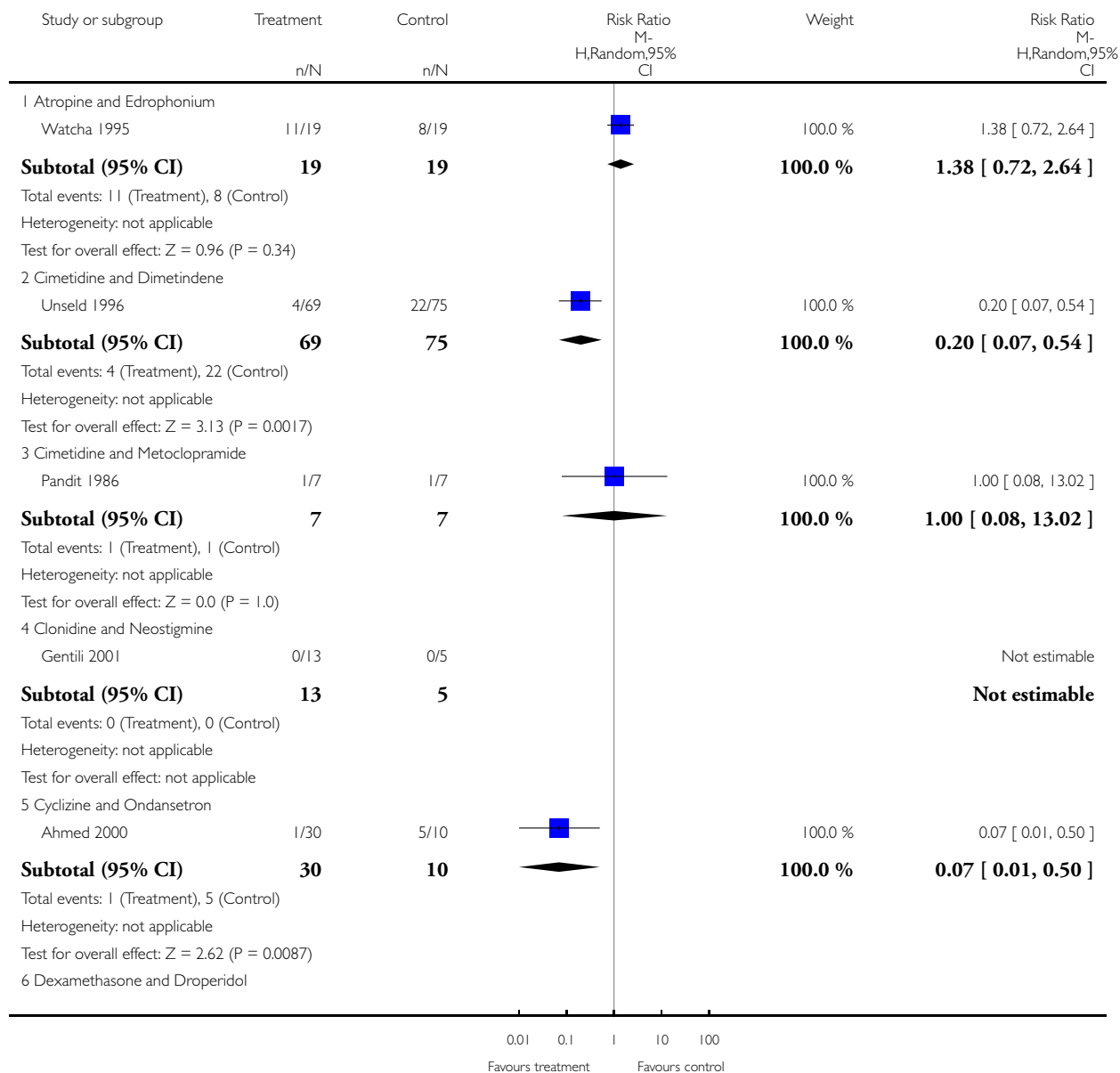


## Analysis 4.2. Comparison 4 PRIMARY ANALYSIS: Placebo versus Drugs, Outcome 2 Vomiting.

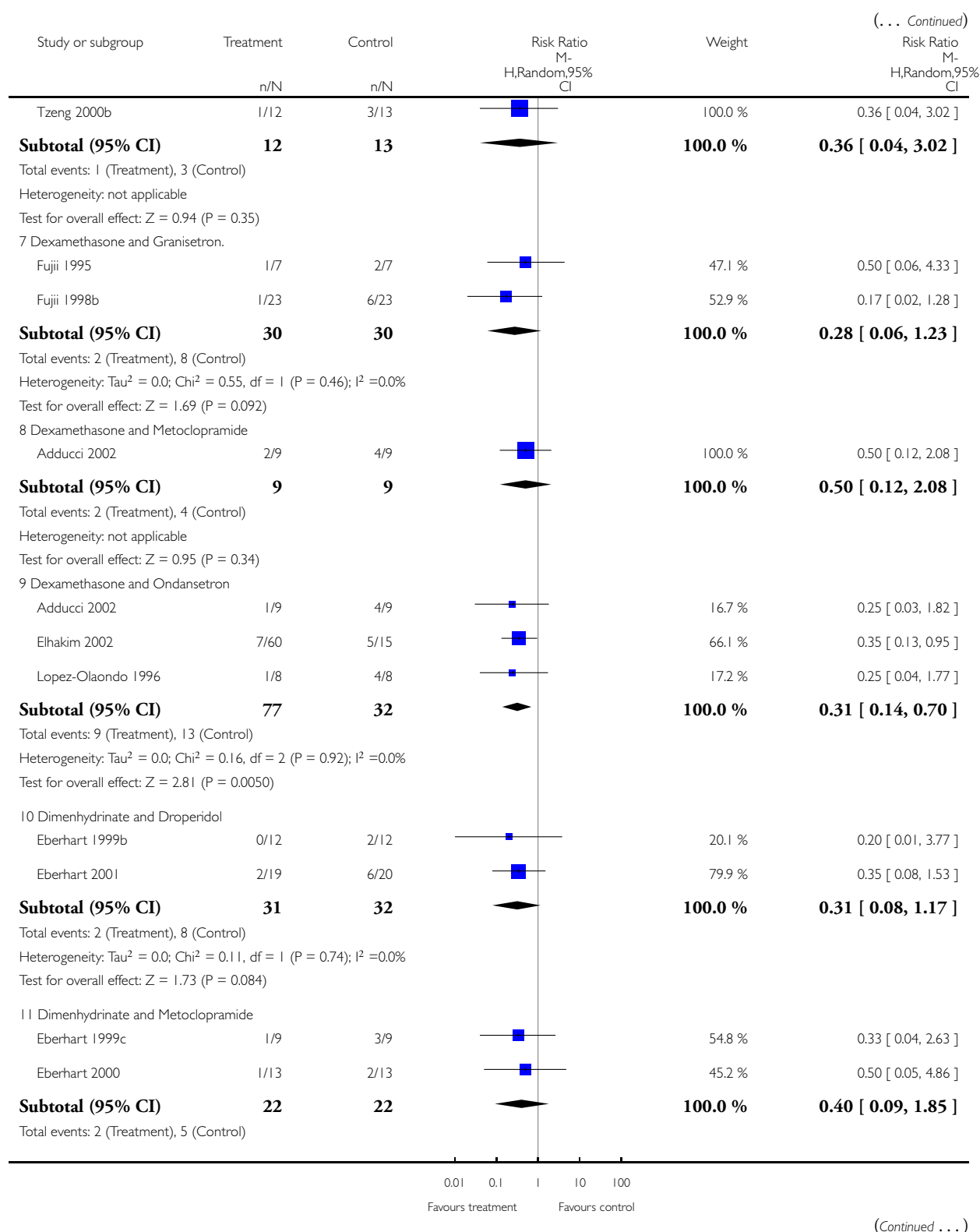
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 4 PRIMARY ANALYSIS: Placebo versus Drugs

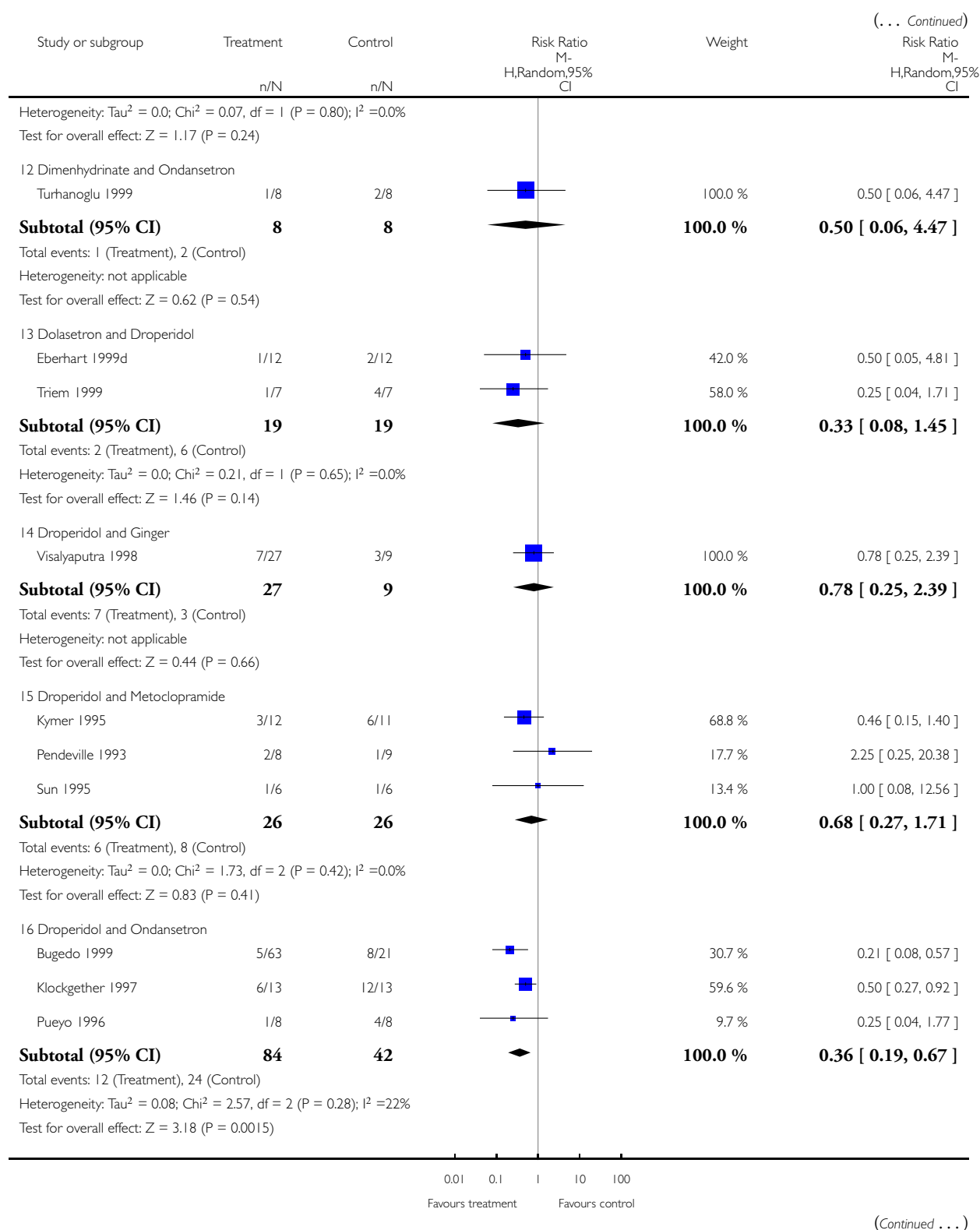
Outcome: 2 Vomiting

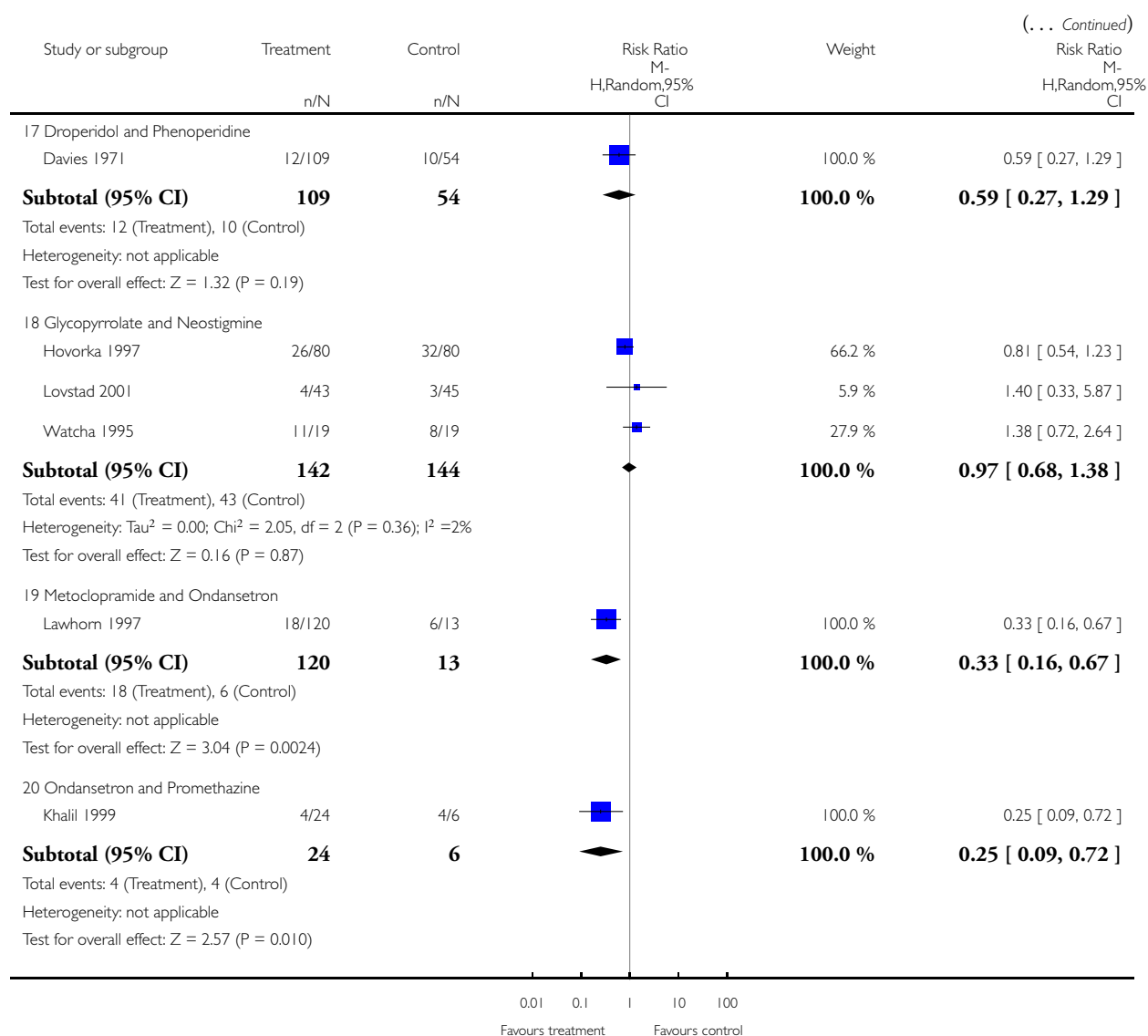


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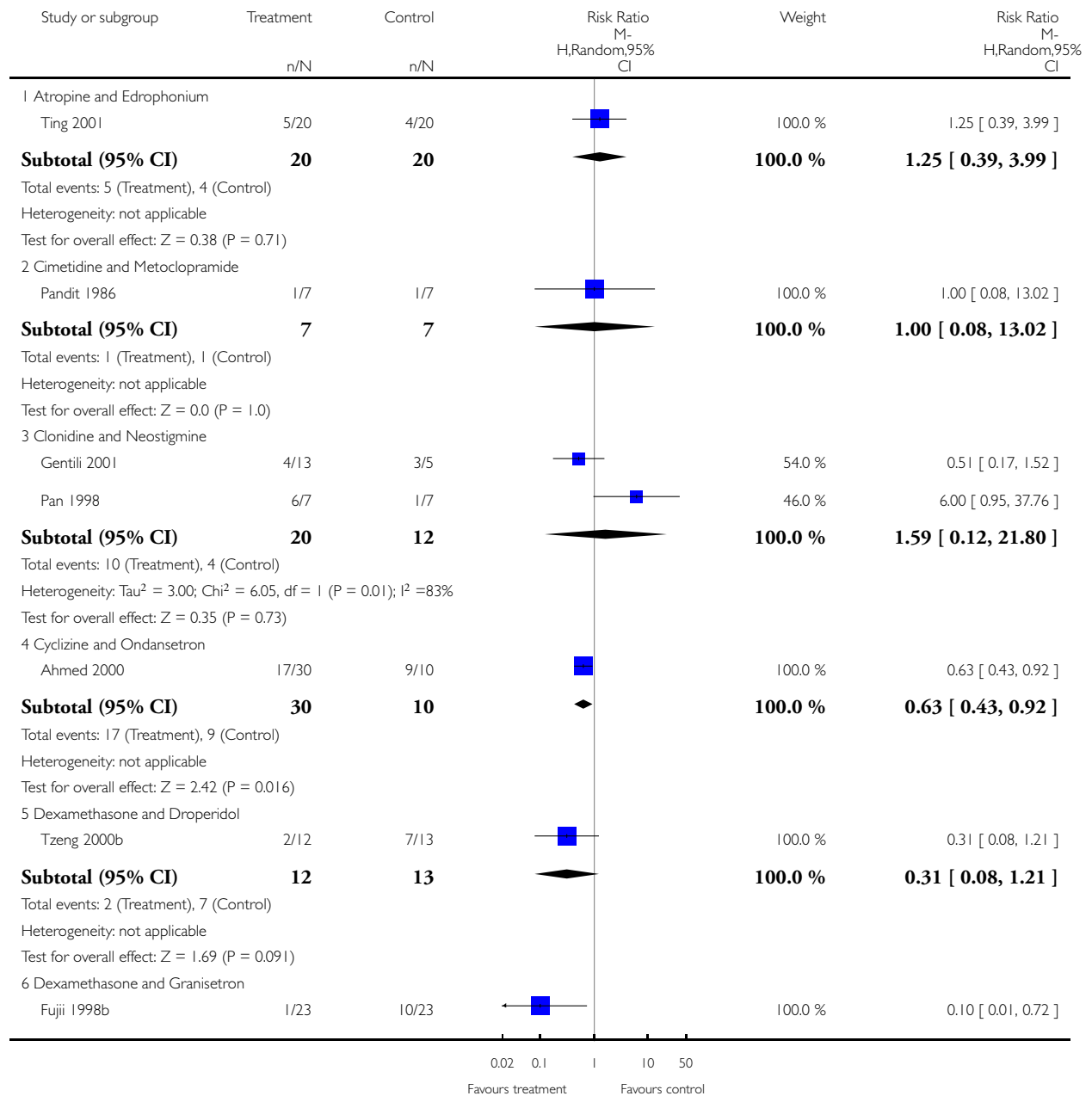


### Analysis 4.3. Comparison 4 PRIMARY ANALYSIS: Placebo versus Drugs, Outcome 3 Nausea or Vomiting.

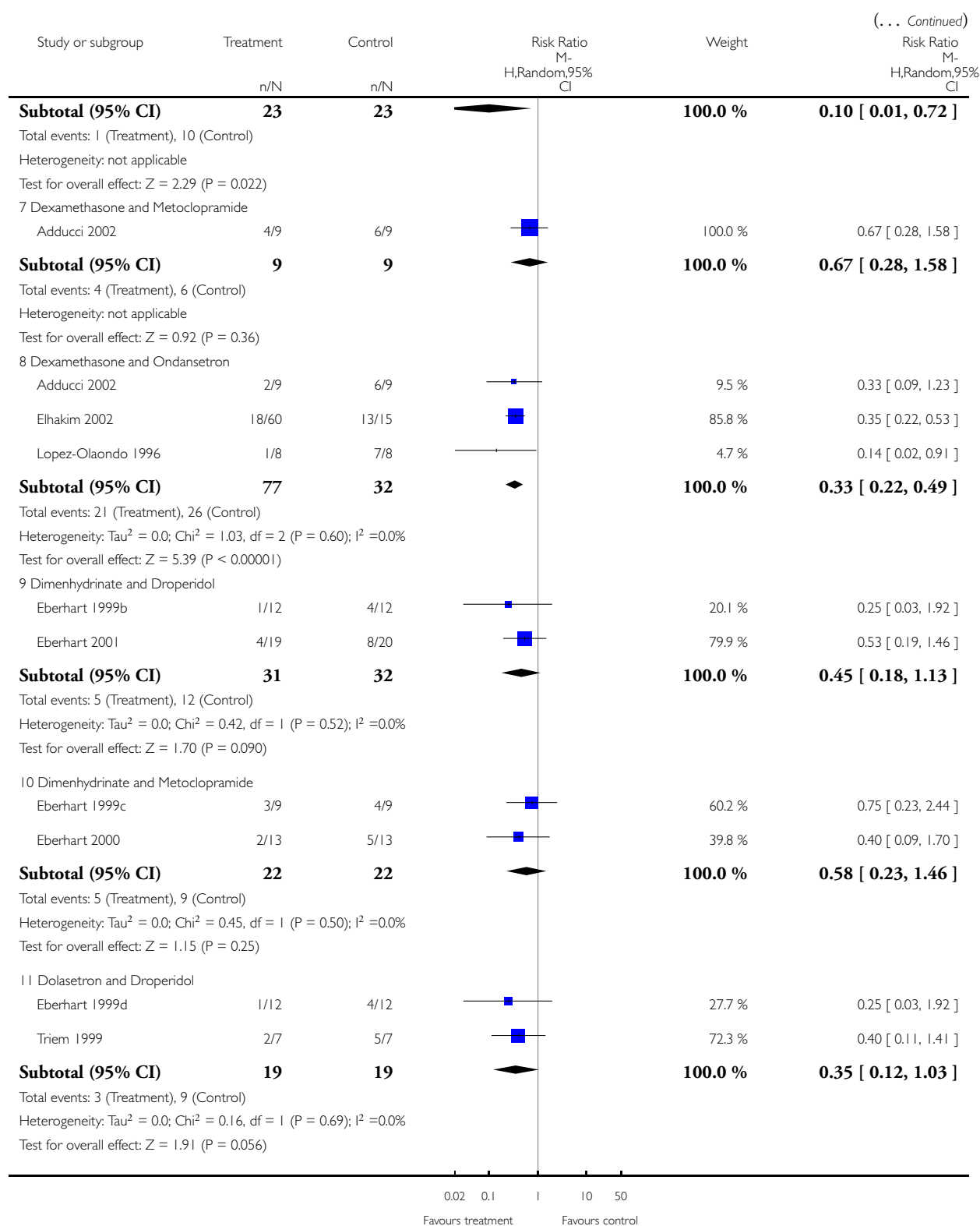
Review: Drugs for preventing postoperative nausea and vomiting

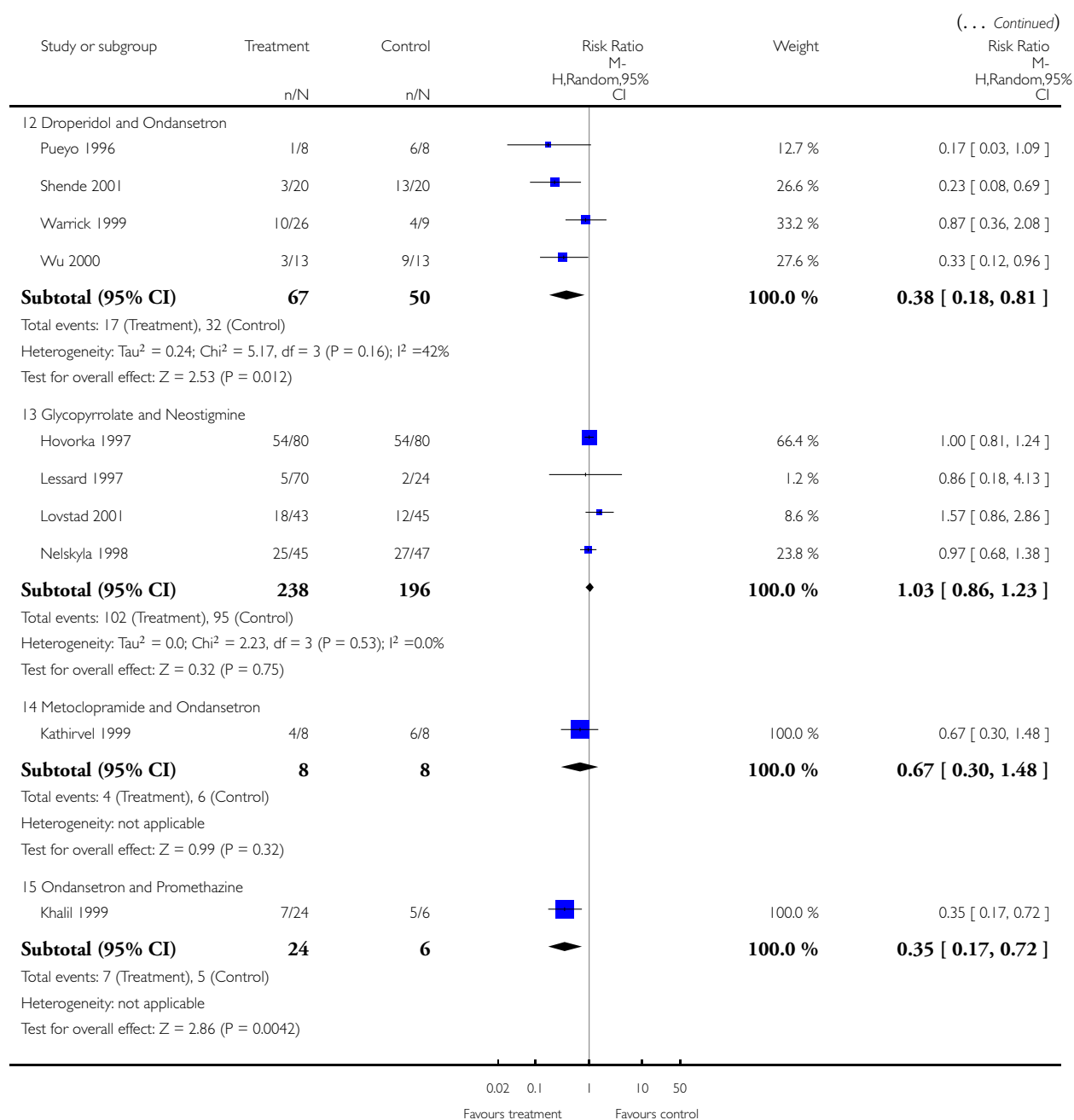
Comparison: 4 PRIMARY ANALYSIS: Placebo versus Drugs

Outcome: 3 Nausea or Vomiting



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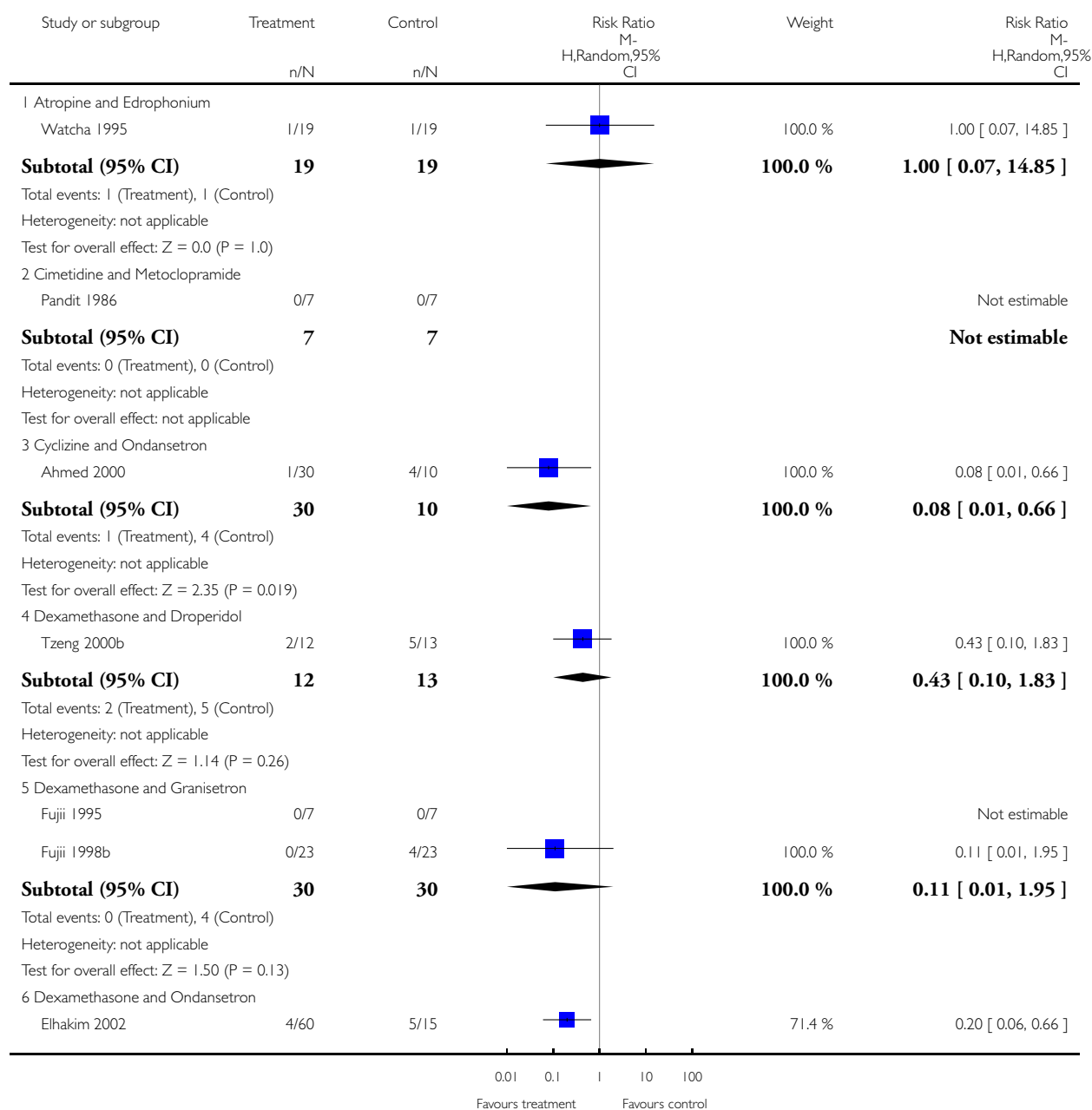


#### Analysis 4.4. Comparison 4 PRIMARY ANALYSIS: Placebo versus Drugs, Outcome 4 Rescue antiemetic.

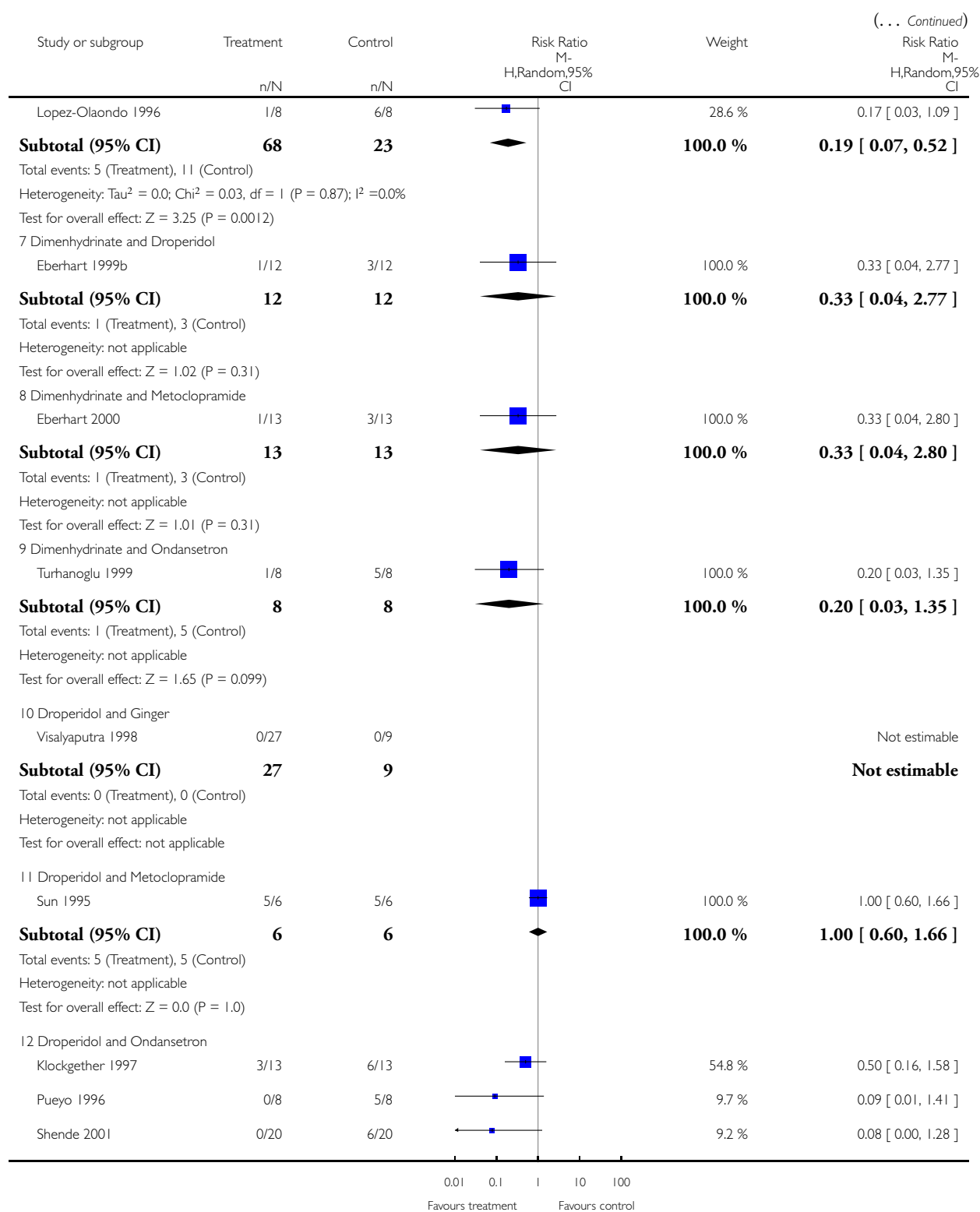
Review: Drugs for preventing postoperative nausea and vomiting

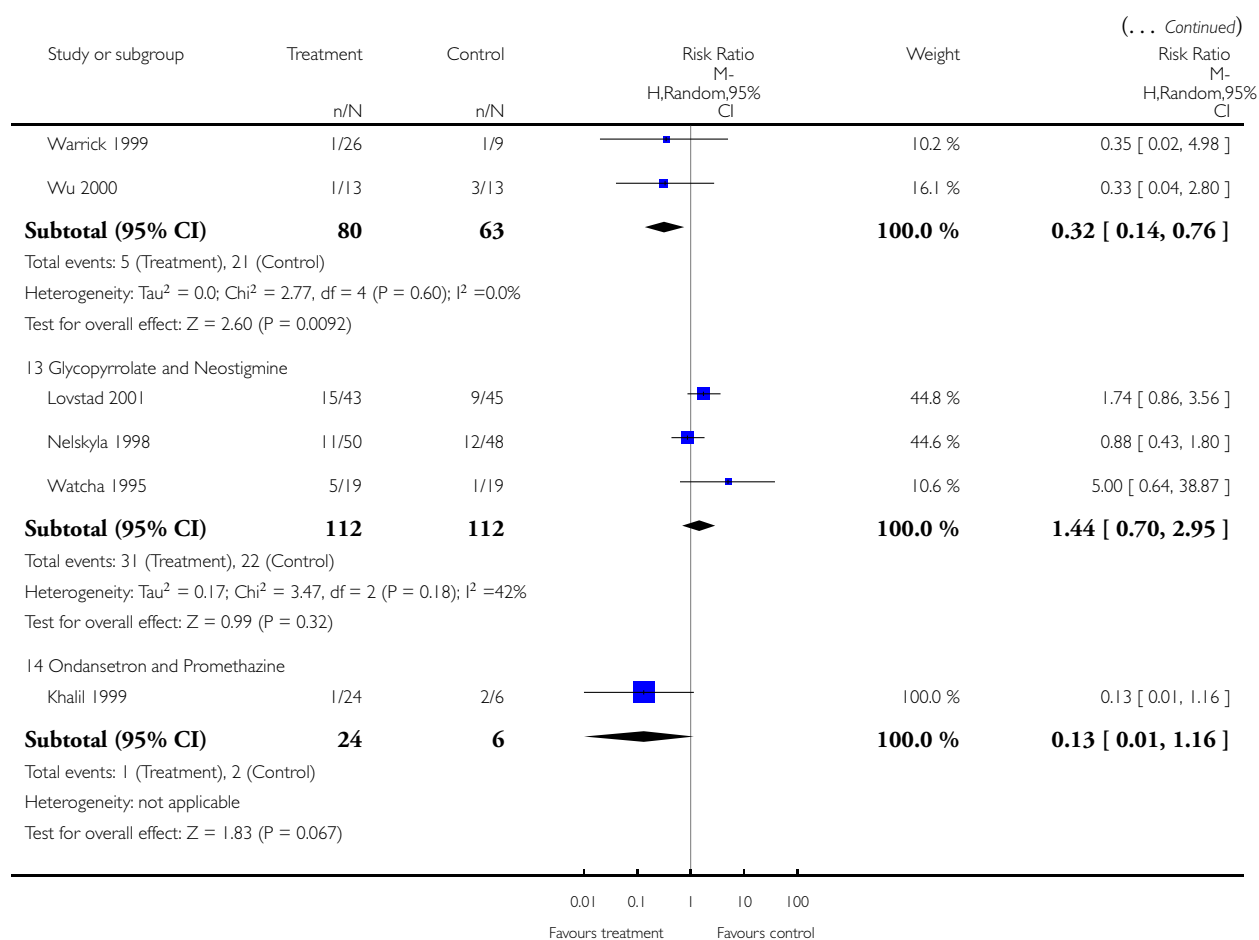
Comparison: 4 PRIMARY ANALYSIS: Placebo versus Drugs

Outcome: 4 Rescue antiemetic



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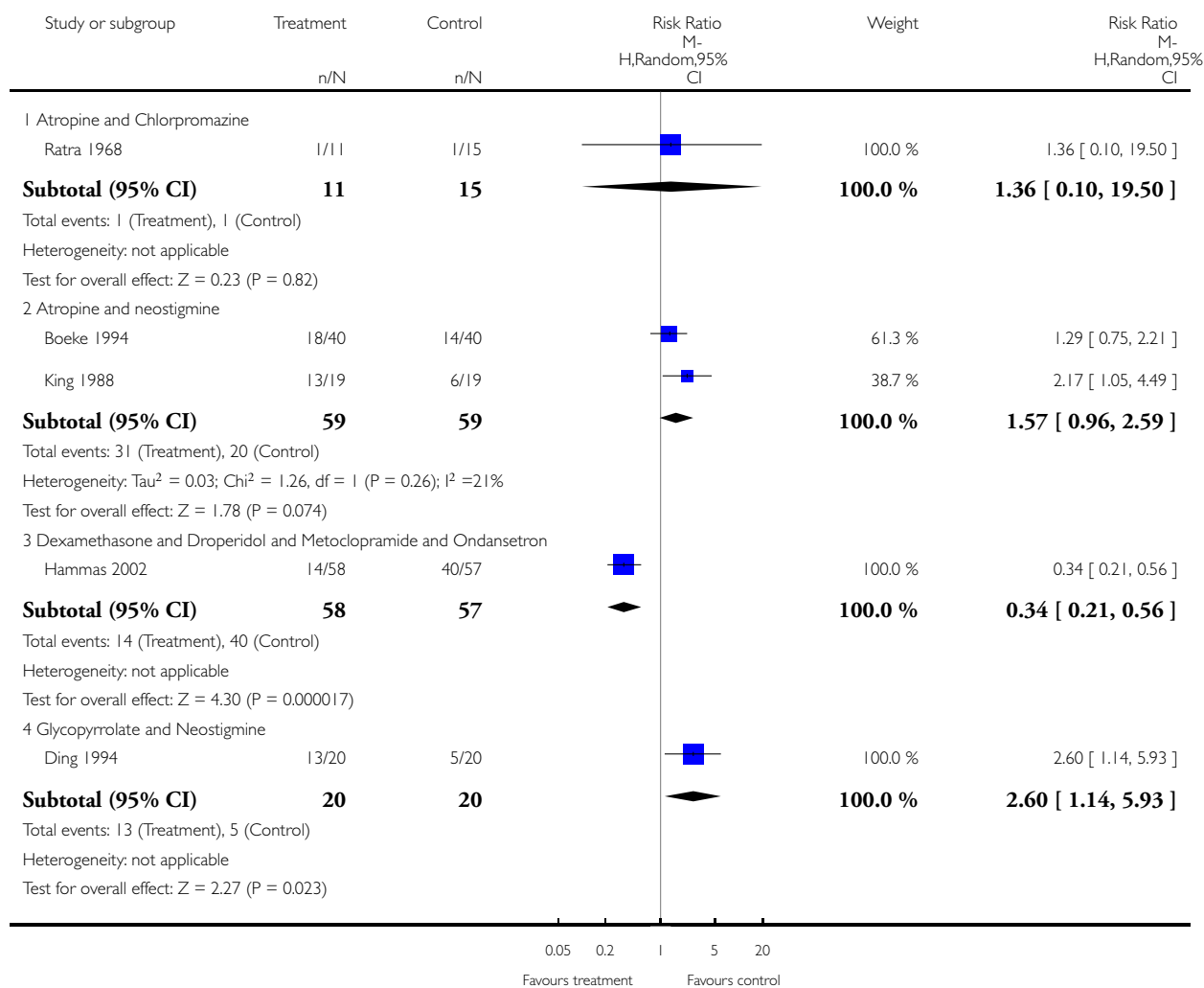


## Analysis 5.1. Comparison 5 PRIMARY ANALYSIS: No Treatment versus Drugs, Outcome 1 Nausea.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 5 PRIMARY ANALYSIS: No Treatment versus Drugs

Outcome: 1 Nausea

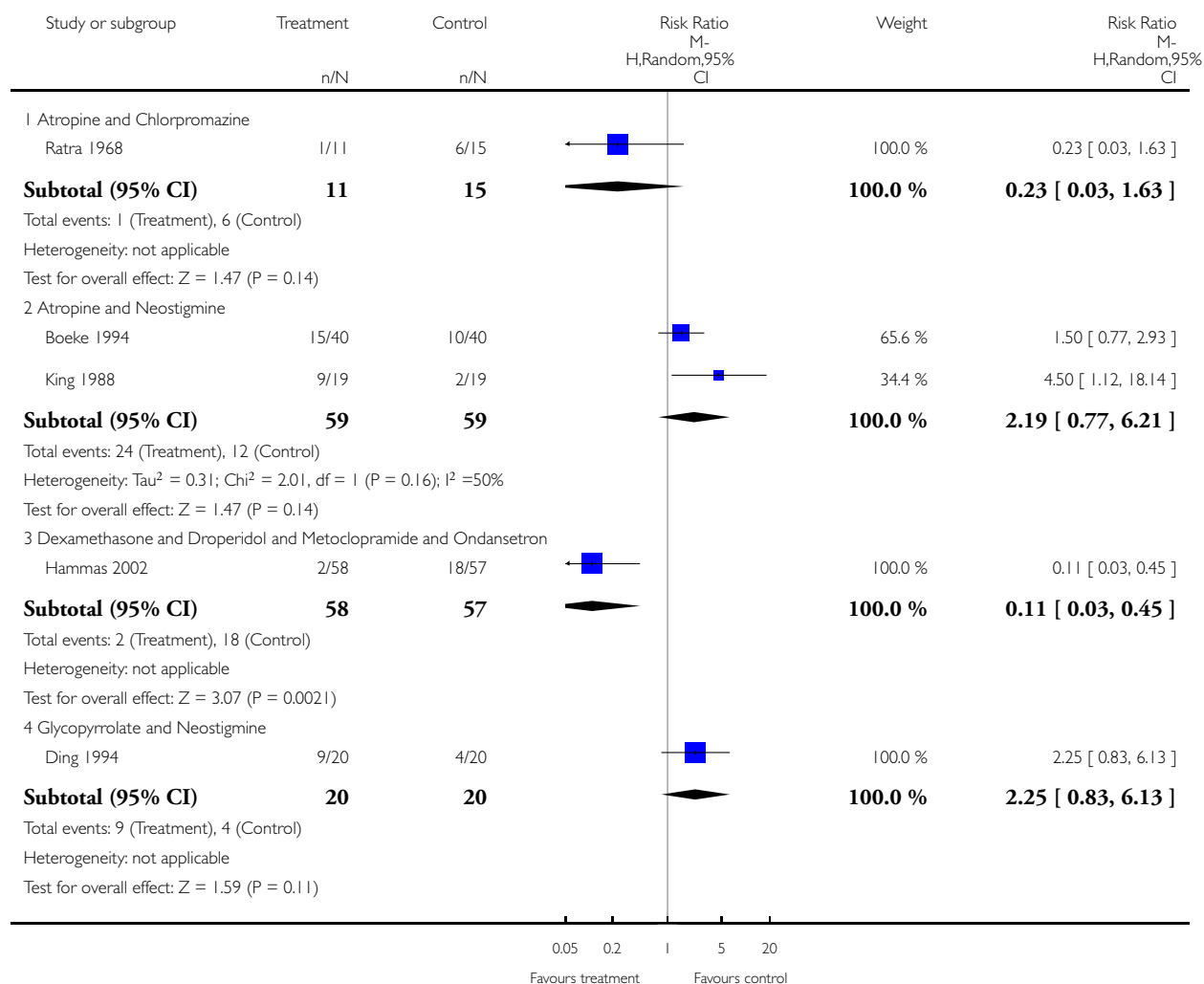


## Analysis 5.2. Comparison 5 PRIMARY ANALYSIS: No Treatment versus Drugs, Outcome 2 Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 5 PRIMARY ANALYSIS: No Treatment versus Drugs

Outcome: 2 Vomiting

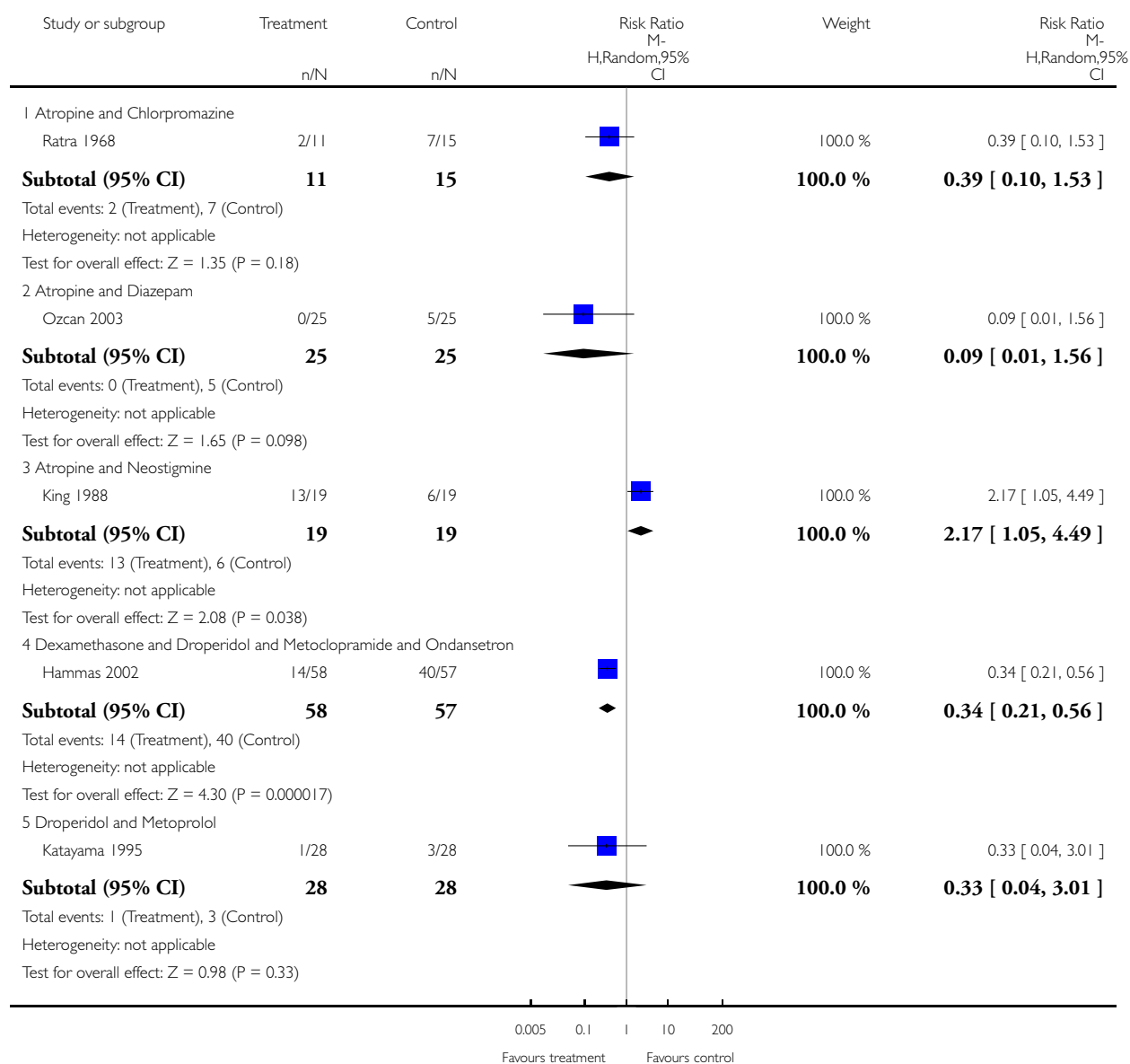


### Analysis 5.3. Comparison 5 PRIMARY ANALYSIS: No Treatment versus Drugs, Outcome 3 Nausea or Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 5 PRIMARY ANALYSIS: No Treatment versus Drugs

Outcome: 3 Nausea or Vomiting

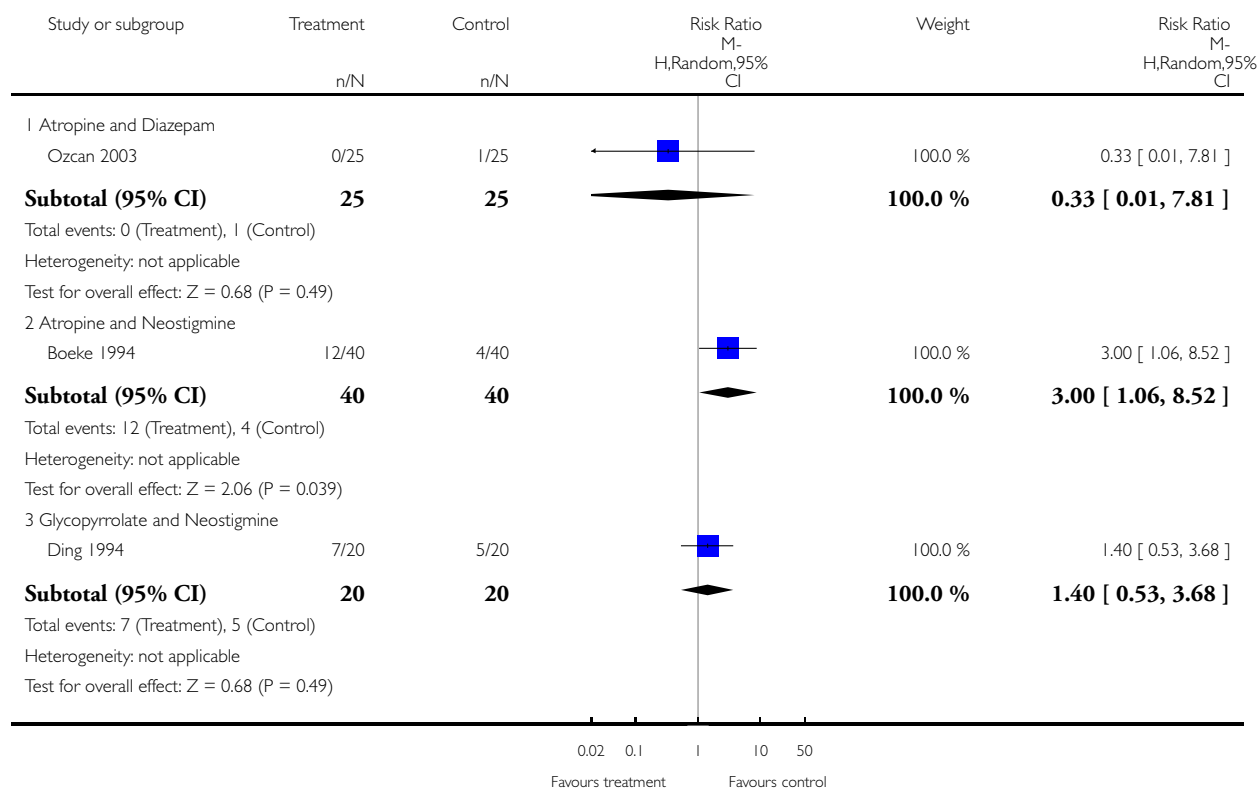


# **Analysis 5.4. Comparison 5 PRIMARY ANALYSIS: No Treatment versus Drugs, Outcome 4 Rescue antiemetic.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 5 PRIMARY ANALYSIS: No Treatment versus Drugs

Outcome: 4 Rescue antiemetic

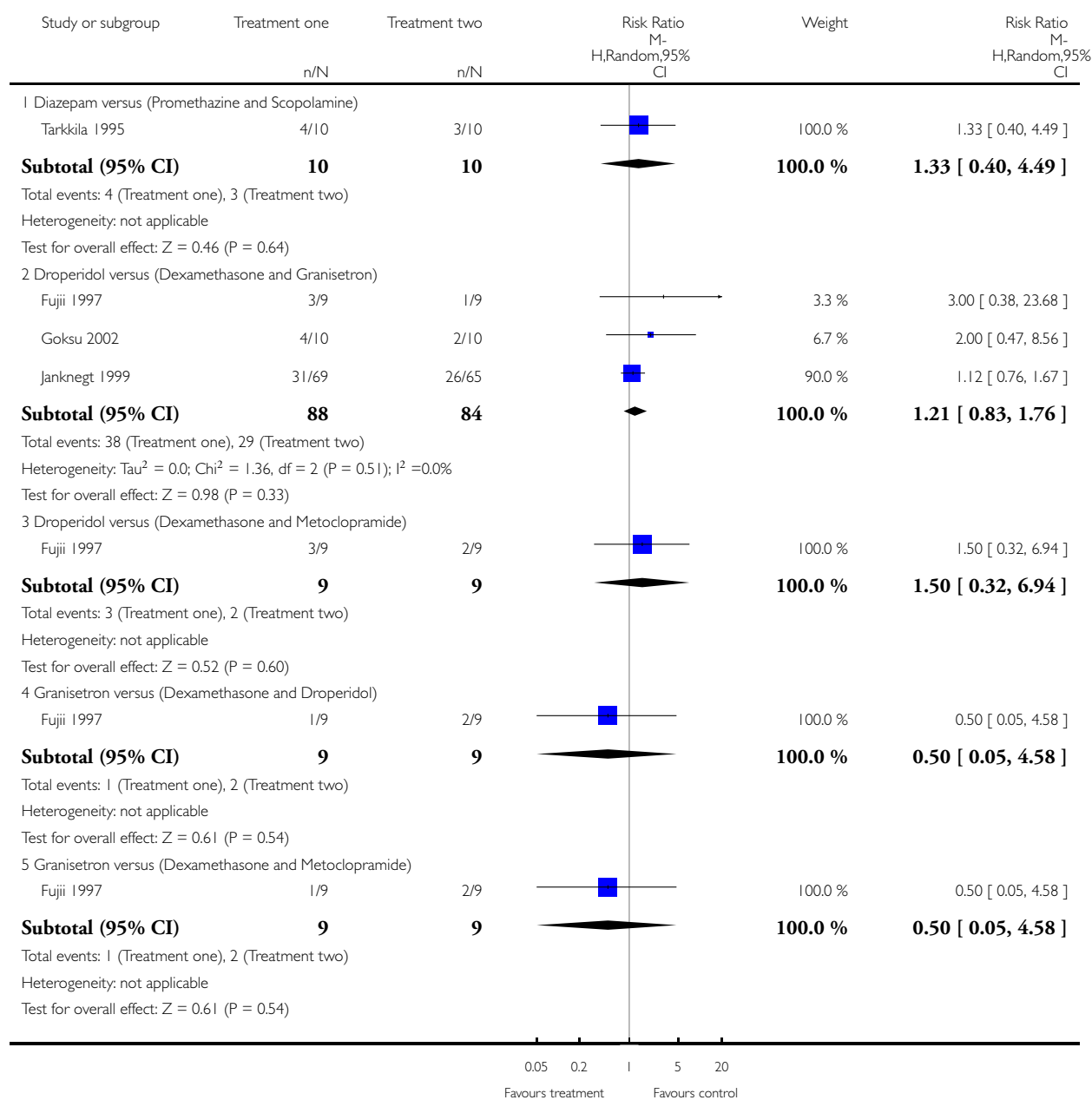


## Analysis 6.1. Comparison 6 PRIMARY ANALYSIS: Drugs versus Drugs, Outcome 1 Nausea.

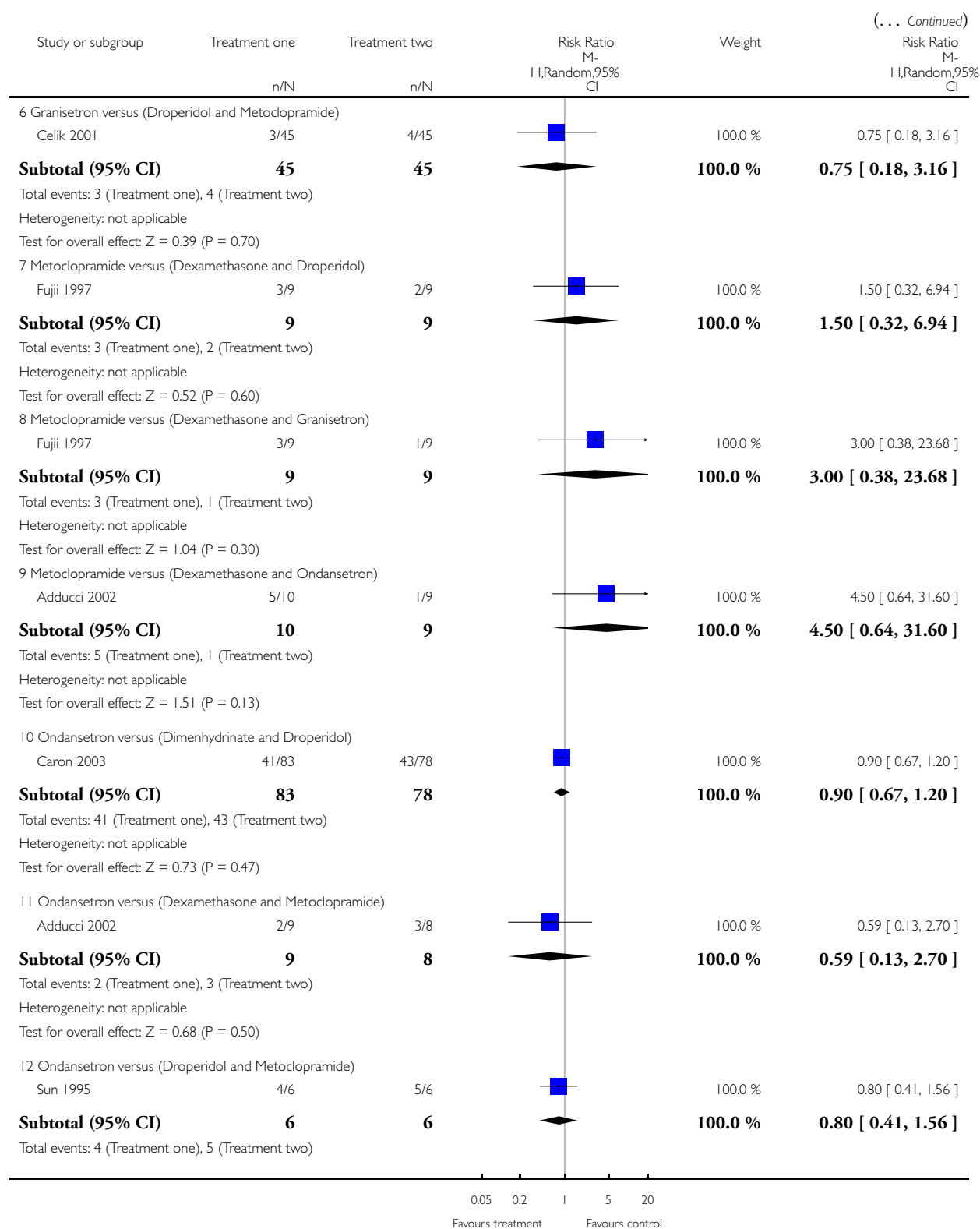
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 6 PRIMARY ANALYSIS: Drugs versus Drugs

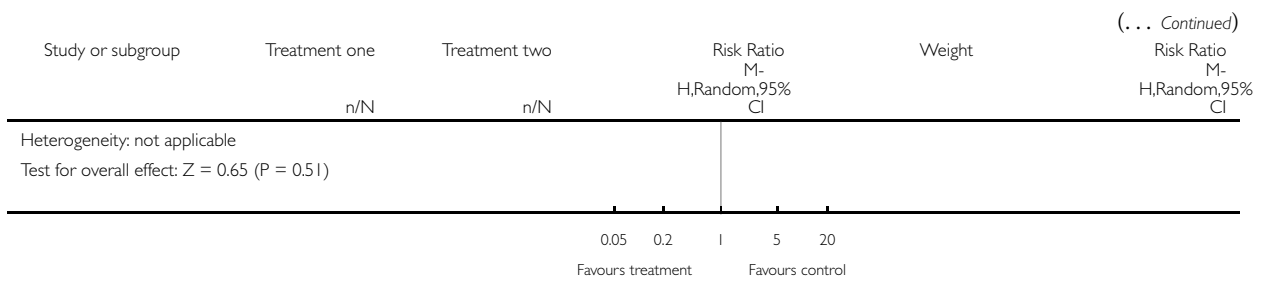
Outcome: 1 Nausea



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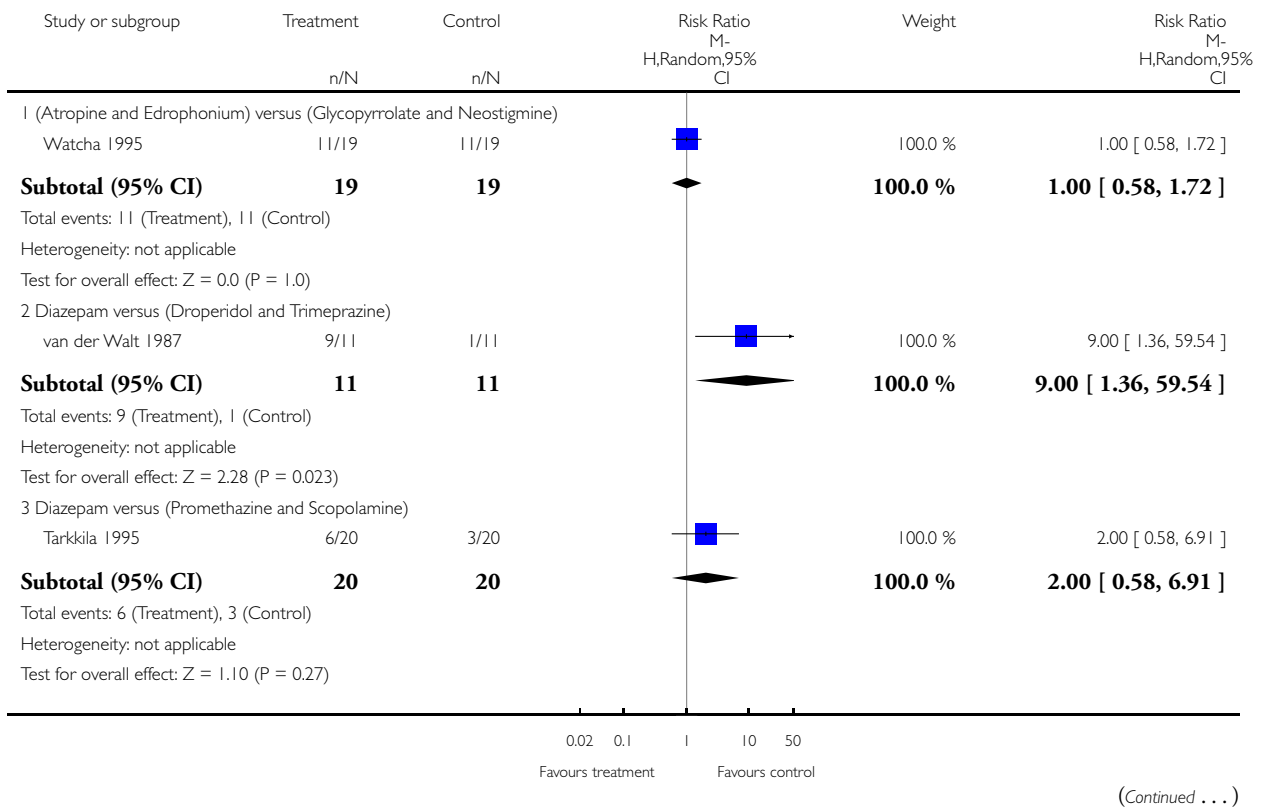


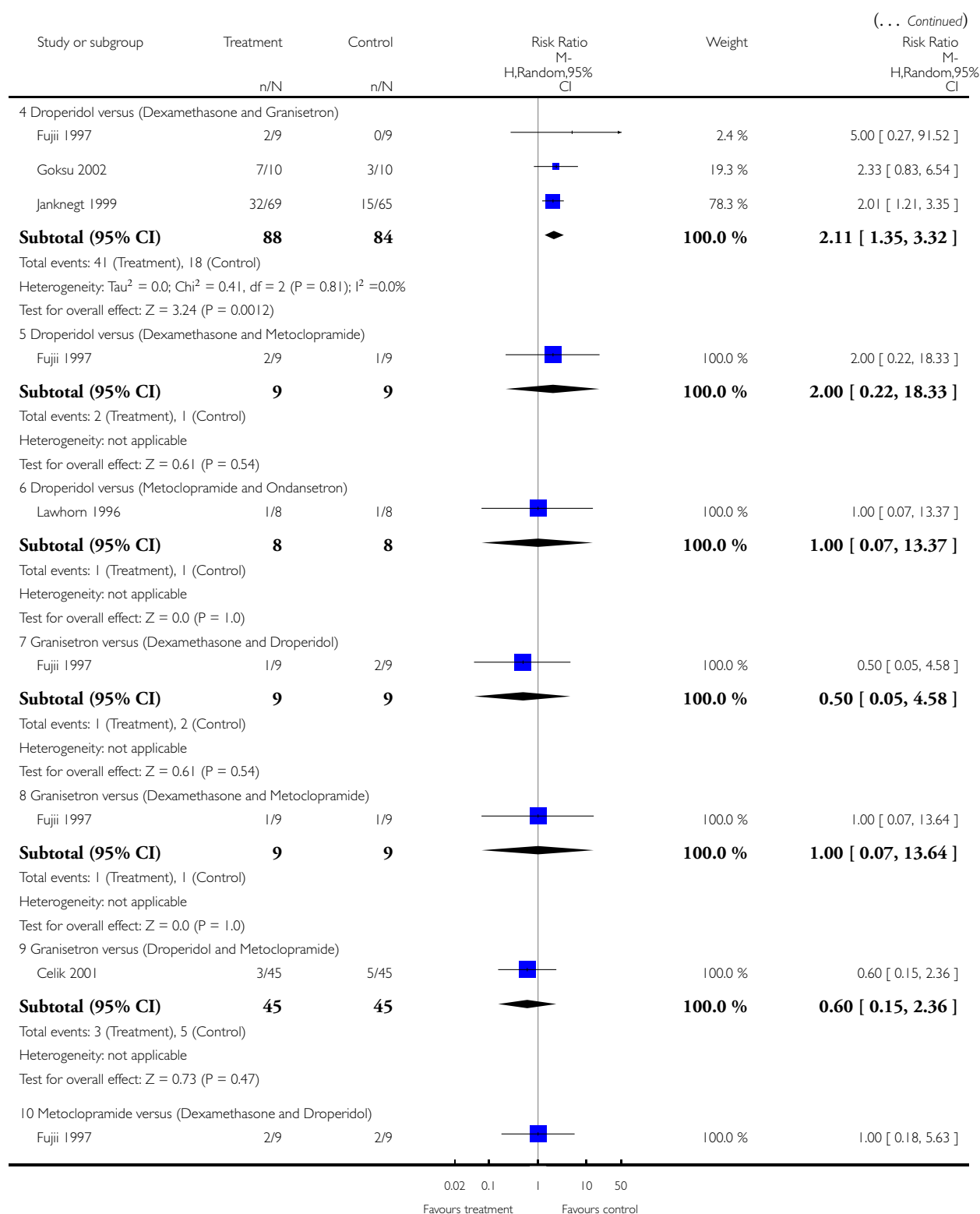
## Analysis 6.2. Comparison 6 PRIMARY ANALYSIS: Drugs versus Drugs, Outcome 2 Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 6 PRIMARY ANALYSIS: Drugs versus Drugs

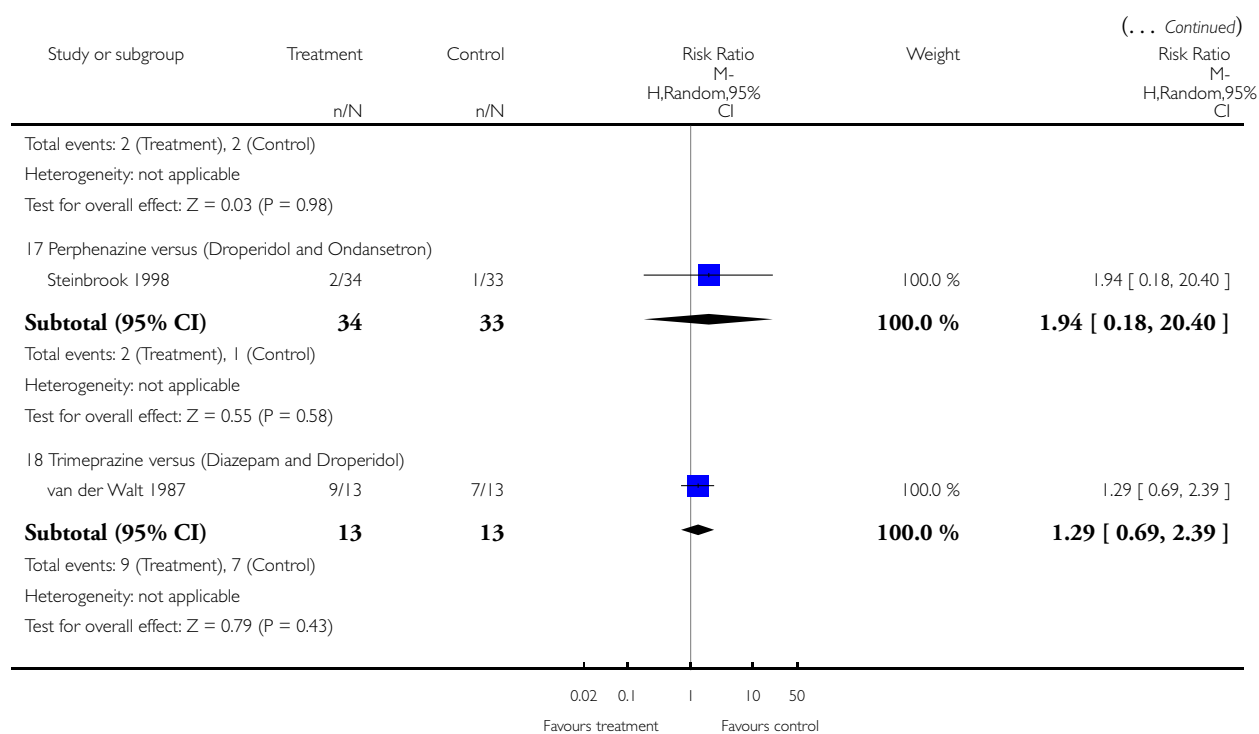
Outcome: 2 Vomiting









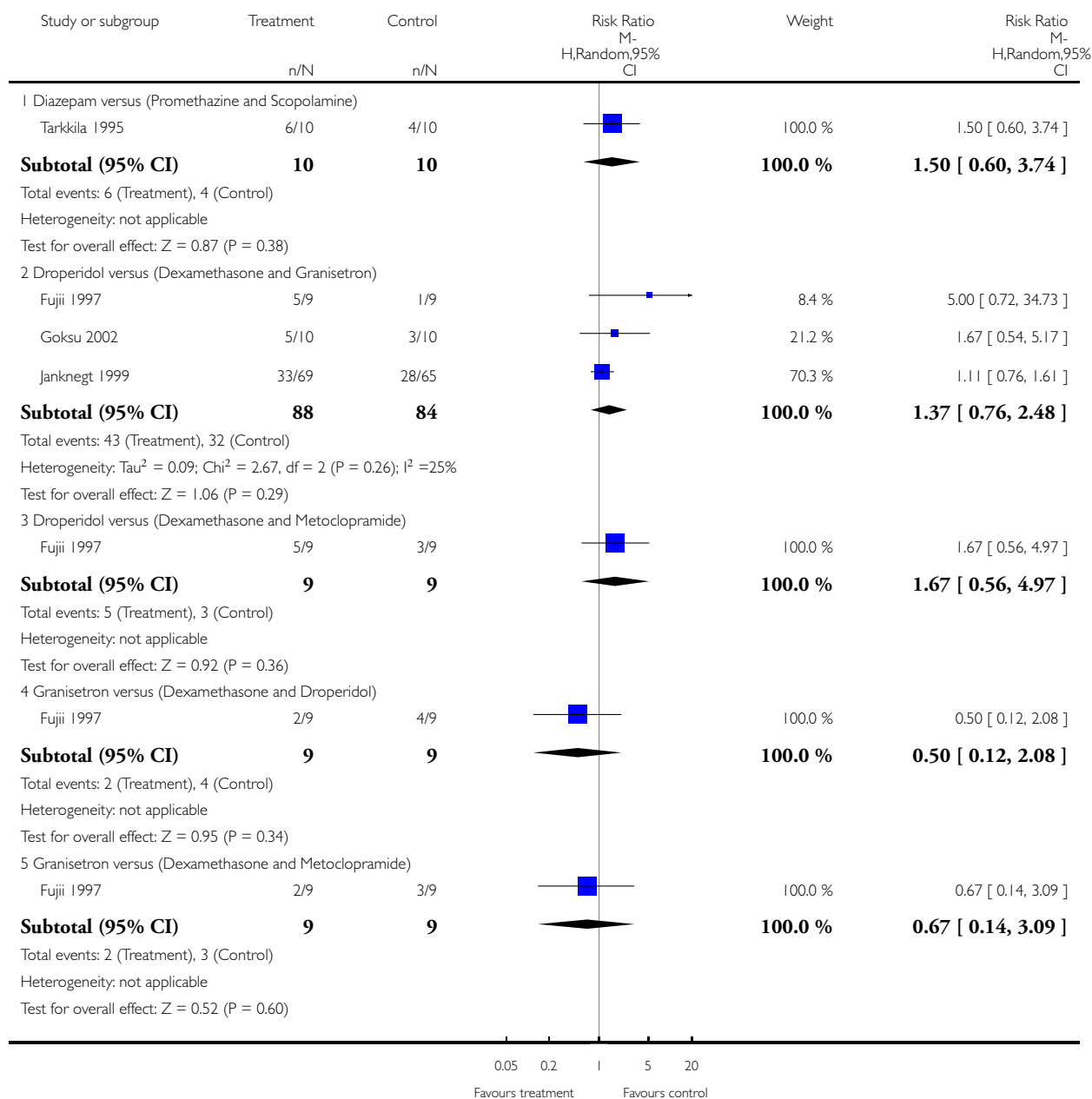


### Analysis 6.3. Comparison 6 PRIMARY ANALYSIS: Drugs versus Drugs, Outcome 3 Nausea or Vomiting.

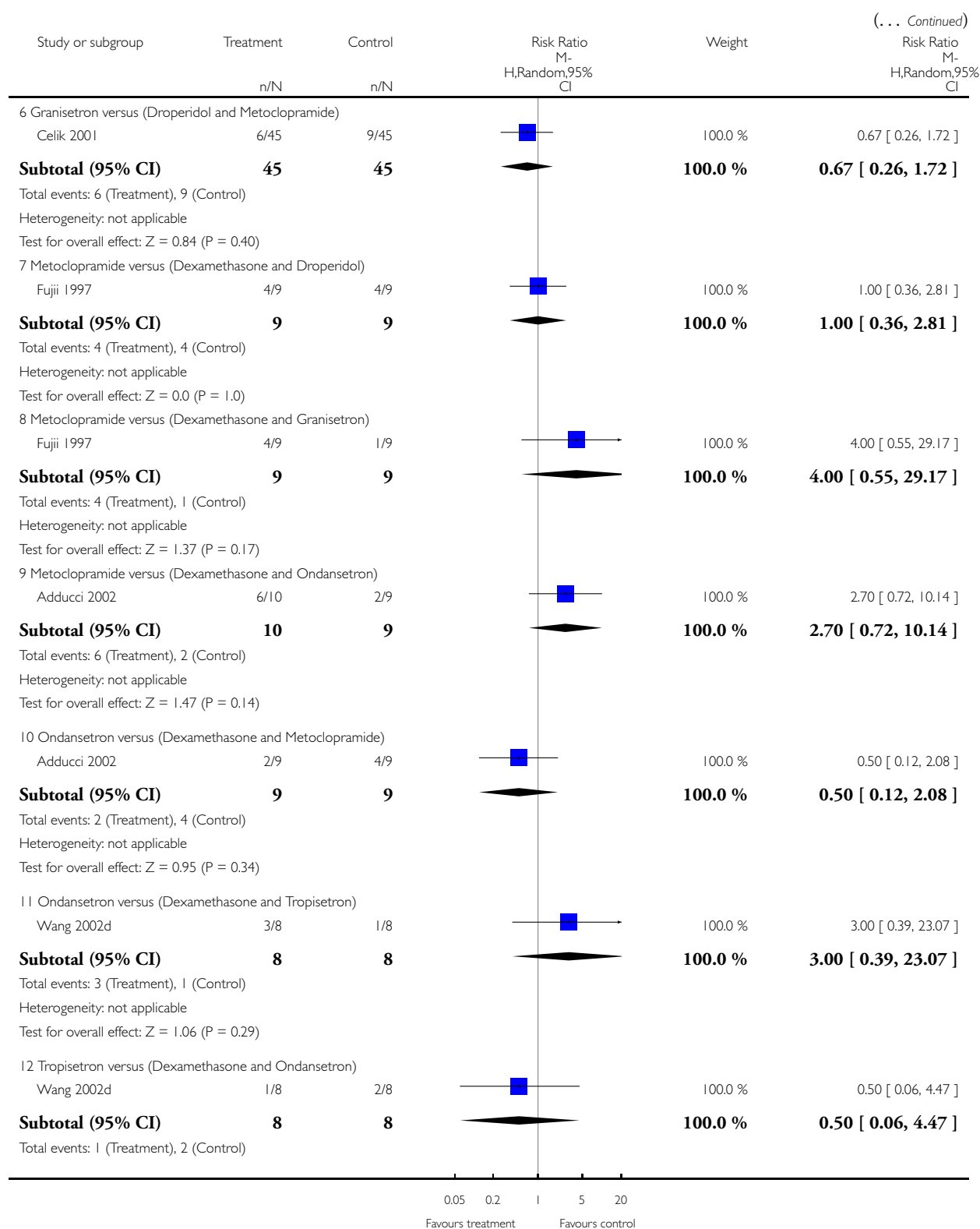
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 6 PRIMARY ANALYSIS: Drugs versus Drugs

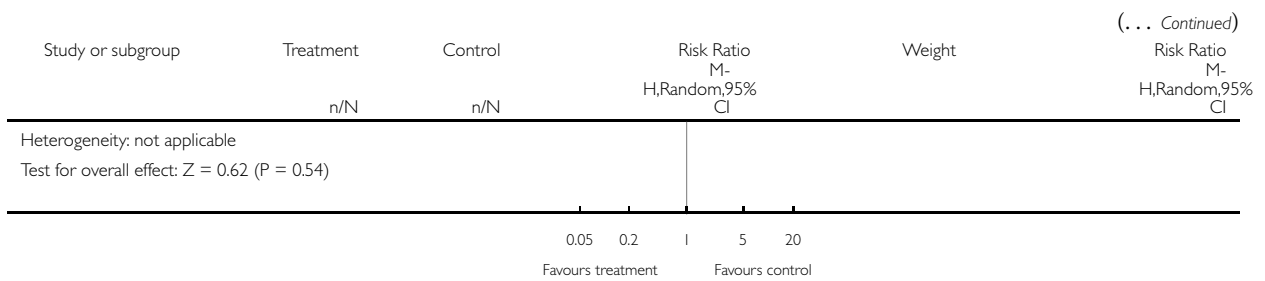
Outcome: 3 Nausea or Vomiting



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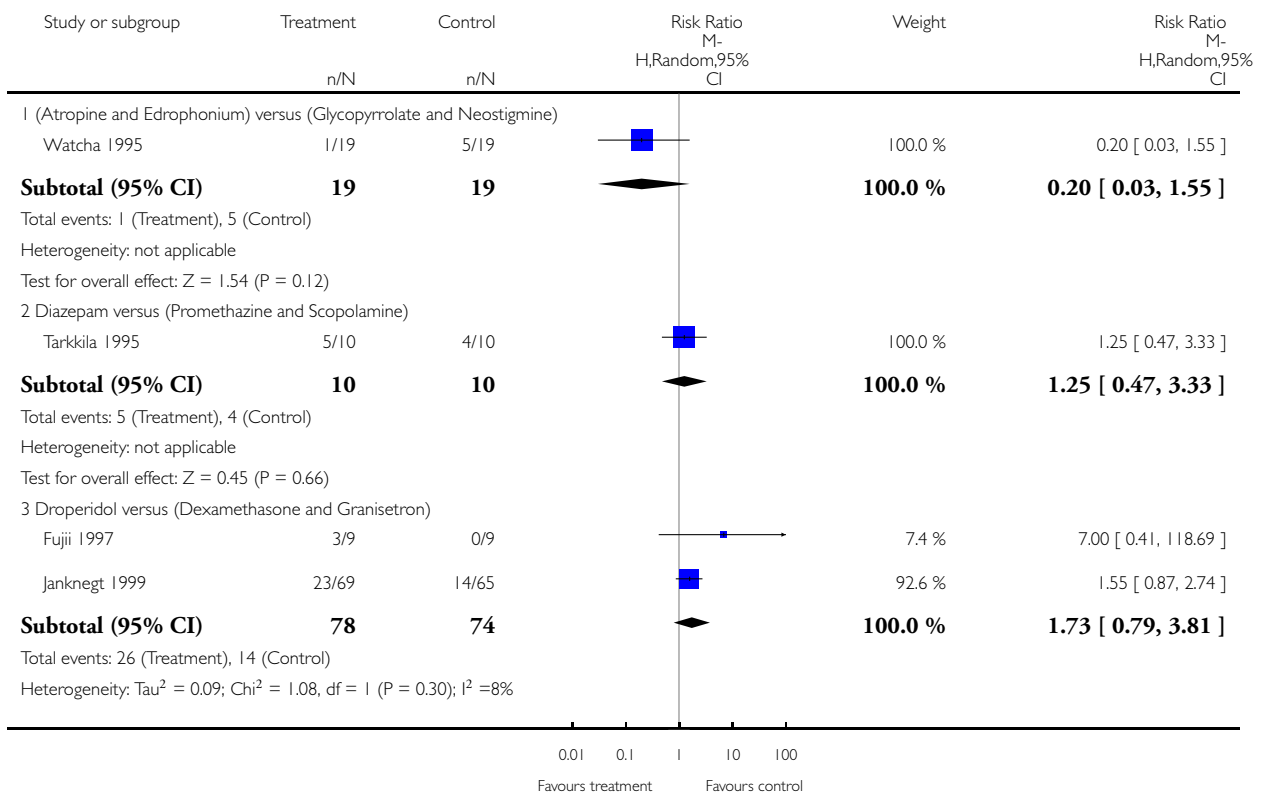


#### Analysis 6.4. Comparison 6 PRIMARY ANALYSIS: Drugs versus Drugs, Outcome 4 Rescue antiemetic.

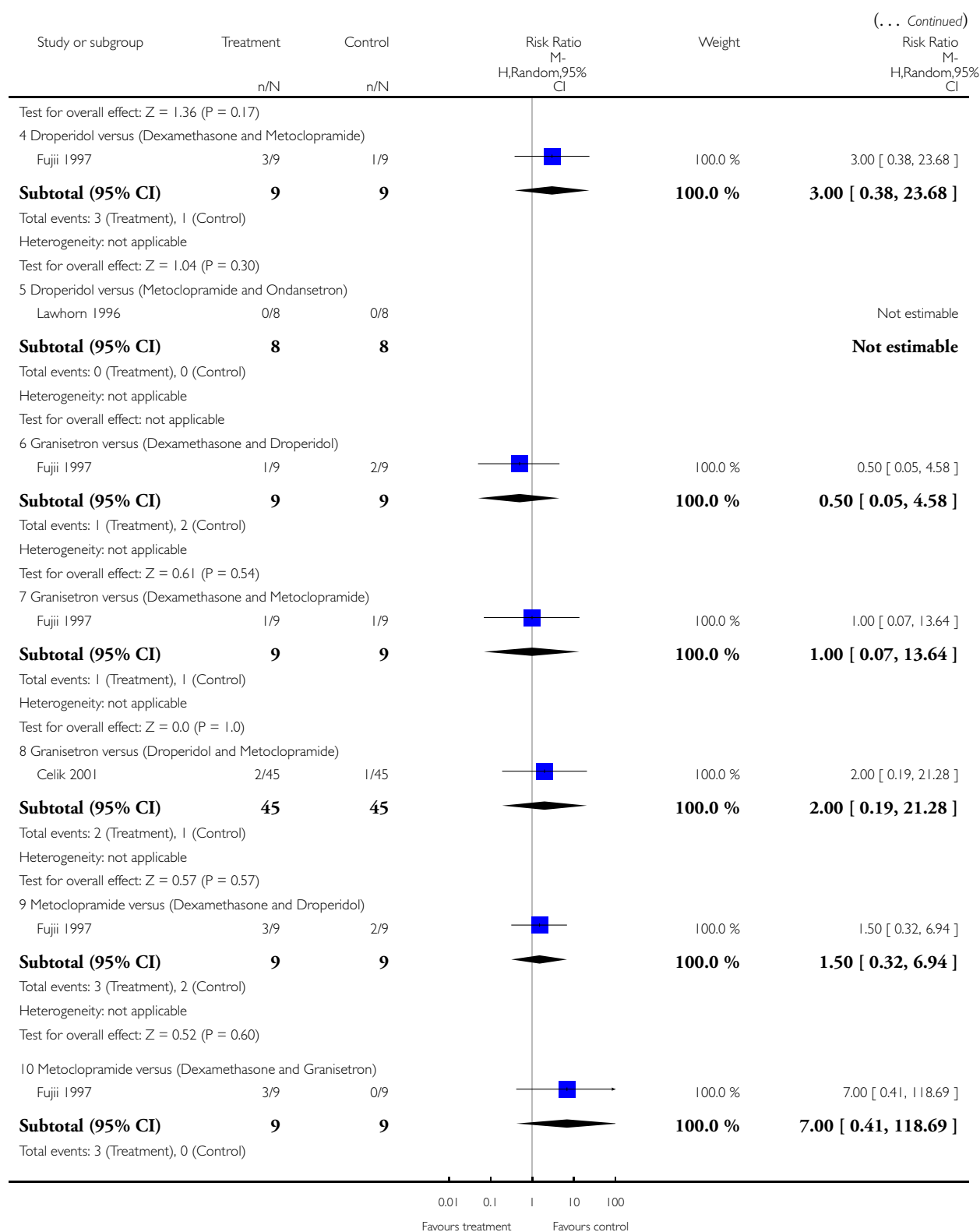
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 6 PRIMARY ANALYSIS: Drugs versus Drugs

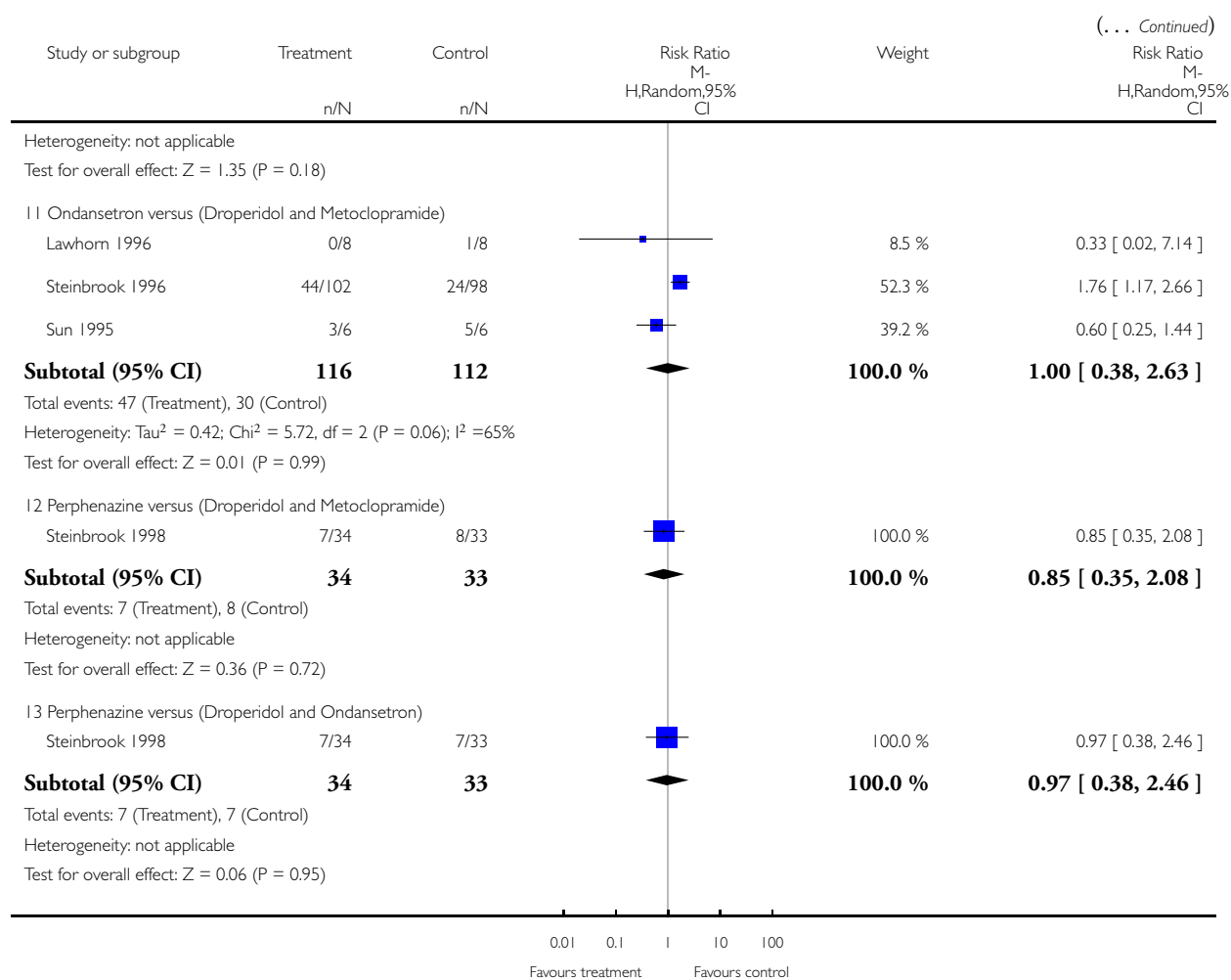
Outcome: 4 Rescue antiemetic



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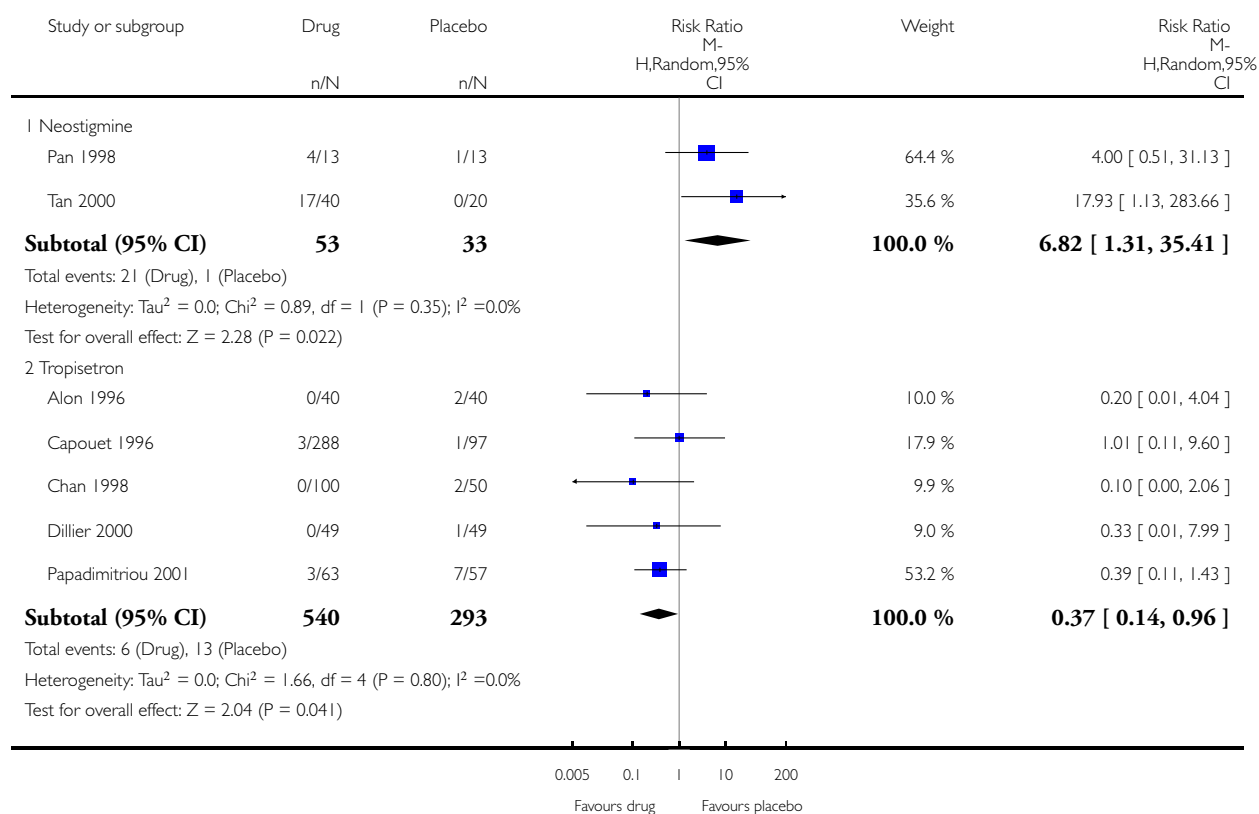


## Analysis 7.1. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 1 Dizziness or vertigo.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome: 1 Dizziness or vertigo



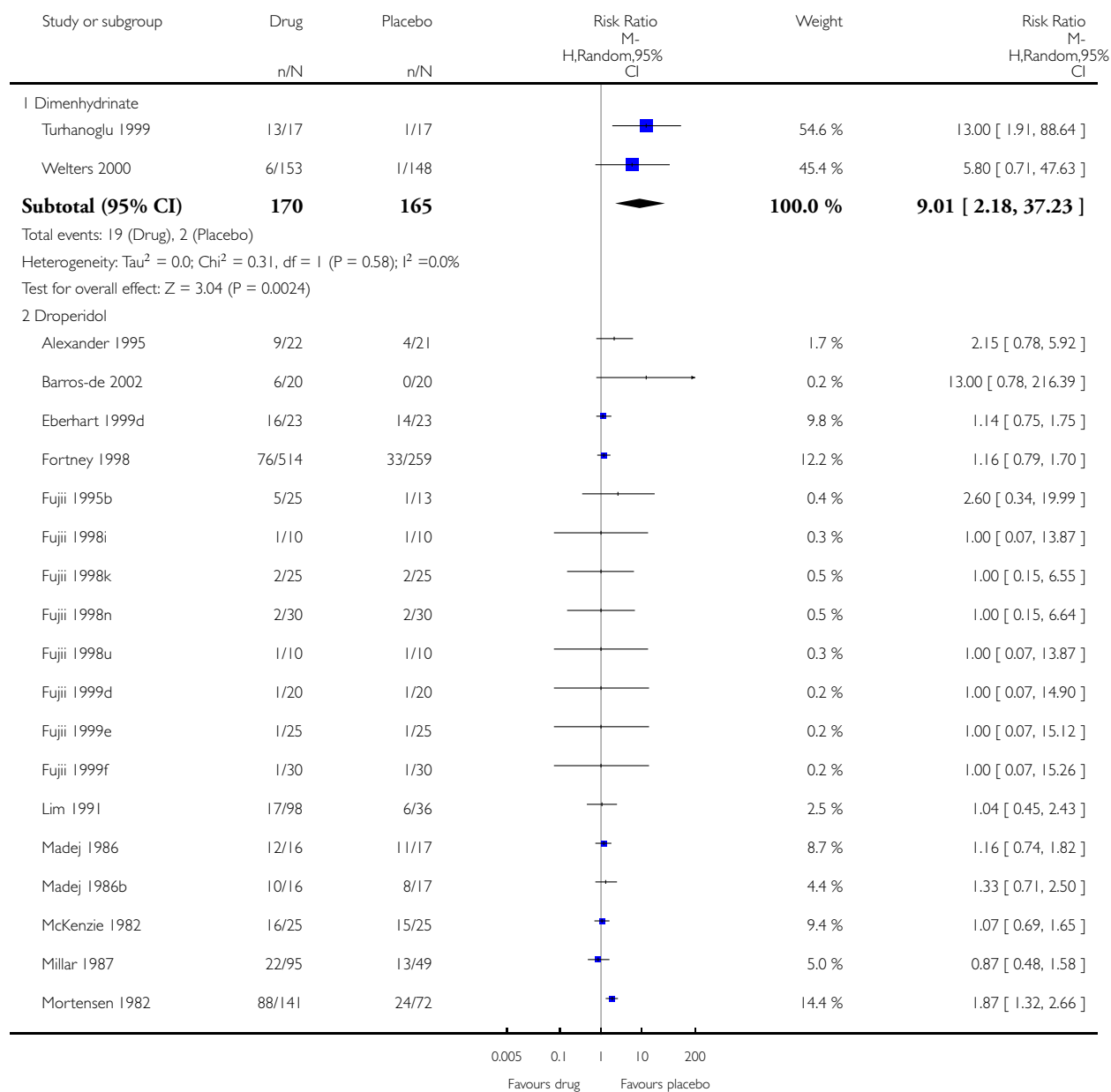


## Analysis 7.2. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 2 Drowsiness or sedation.

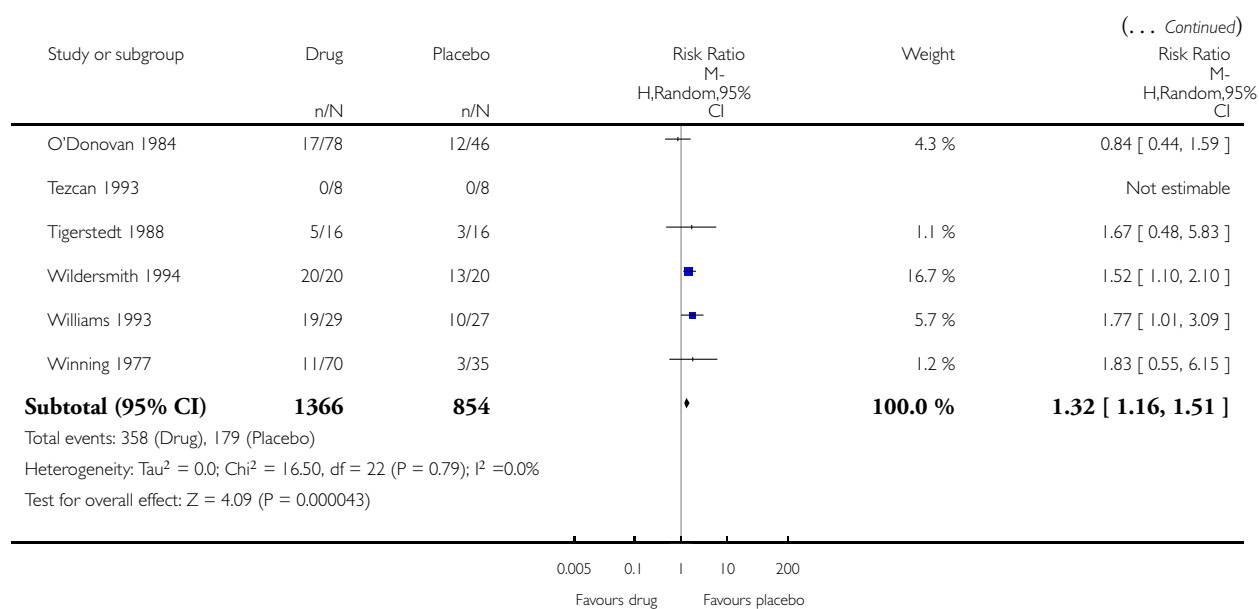
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome: 2 Drowsiness or sedation



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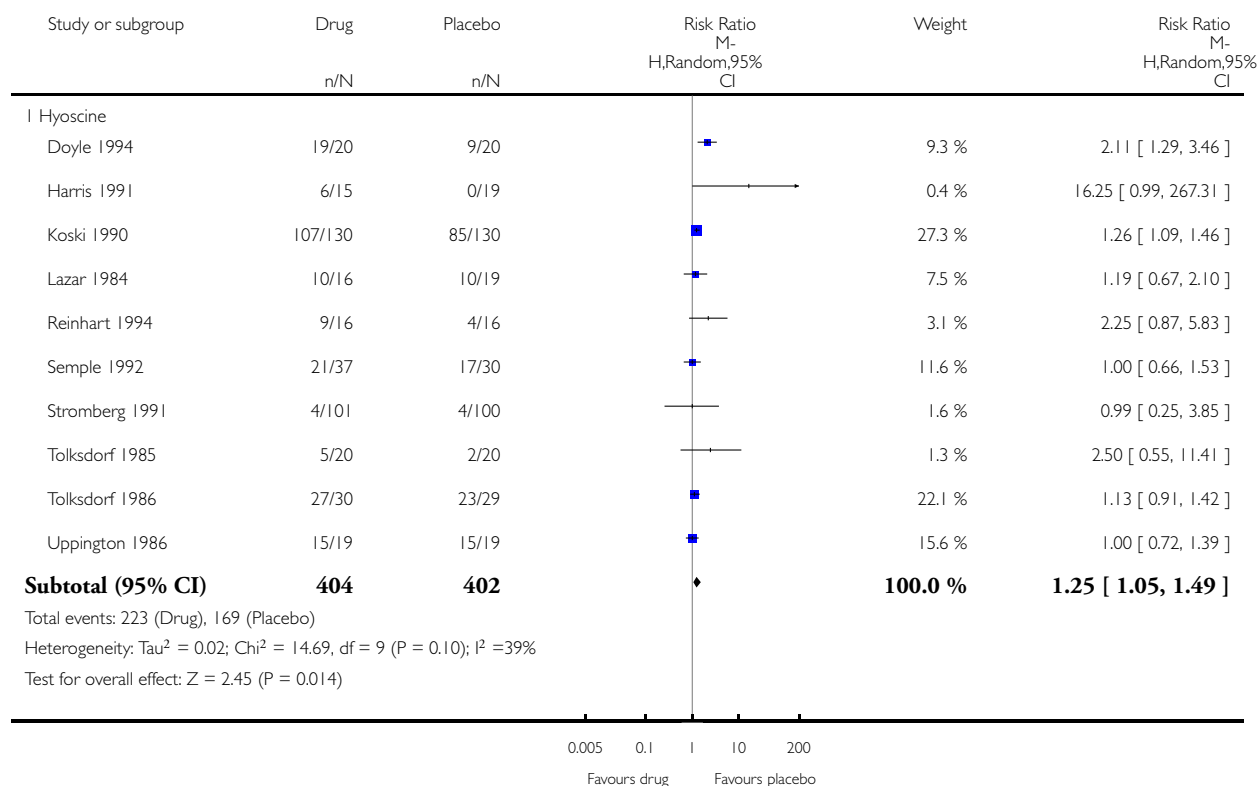


### Analysis 7.3. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 3 Dry mouth.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome: 3 Dry mouth

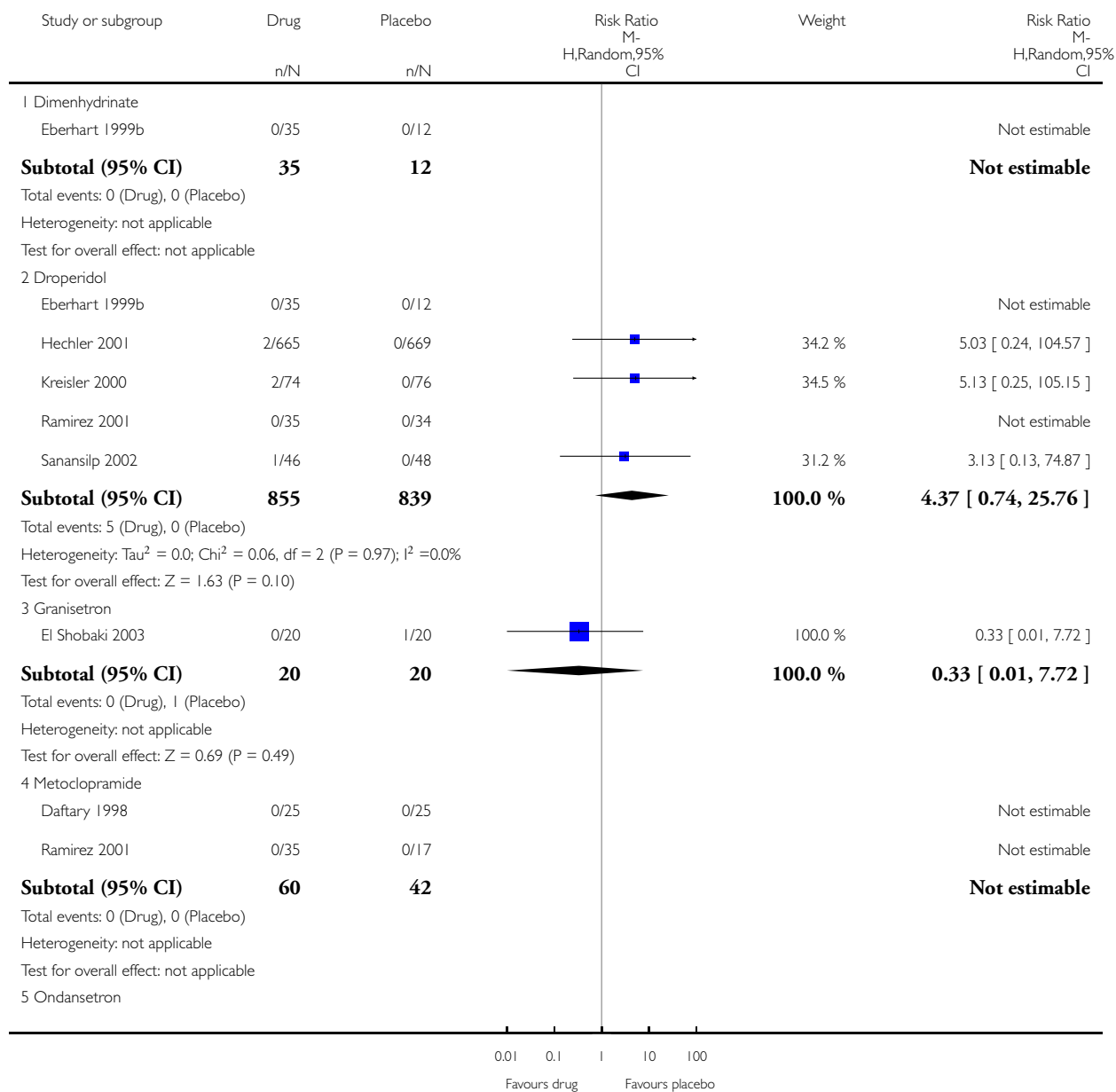


# **Analysis 7.4. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 4 Extrapyramidal reaction.**

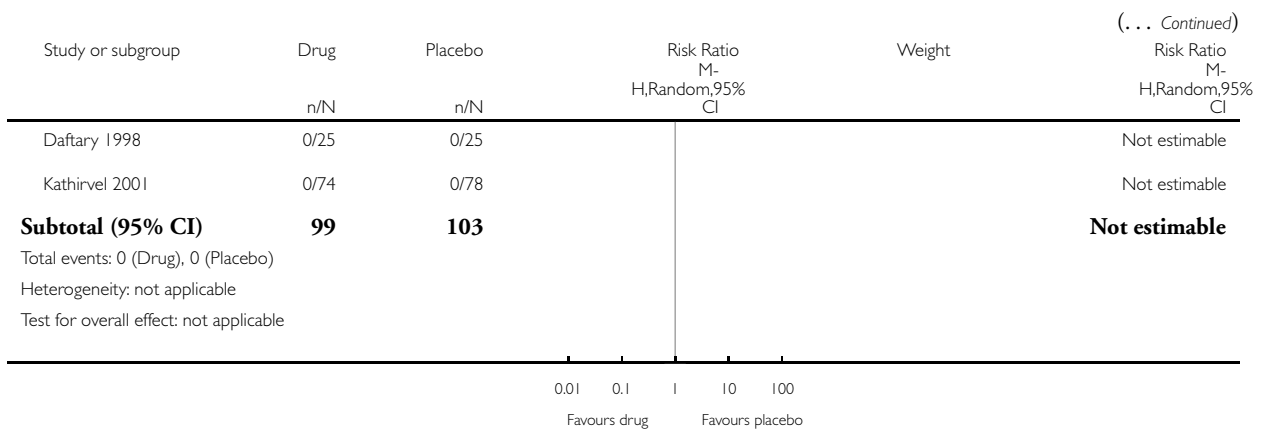
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome: 4 Extrapyramidal reaction



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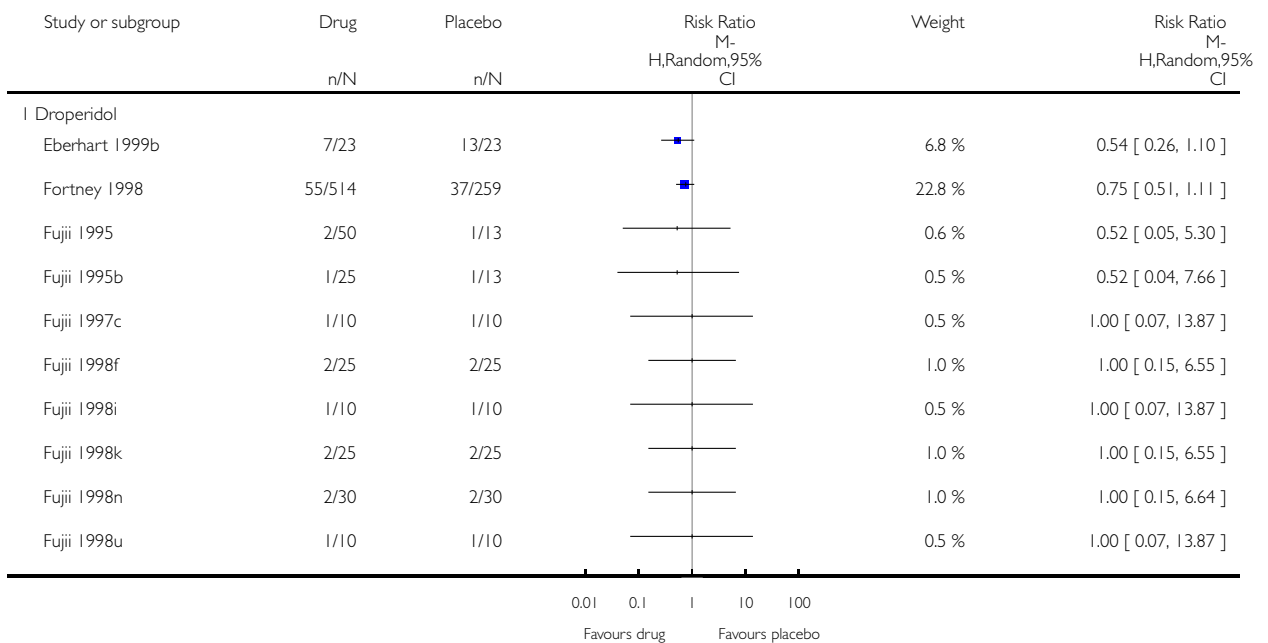


### Analysis 7.5. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 5 Headache.

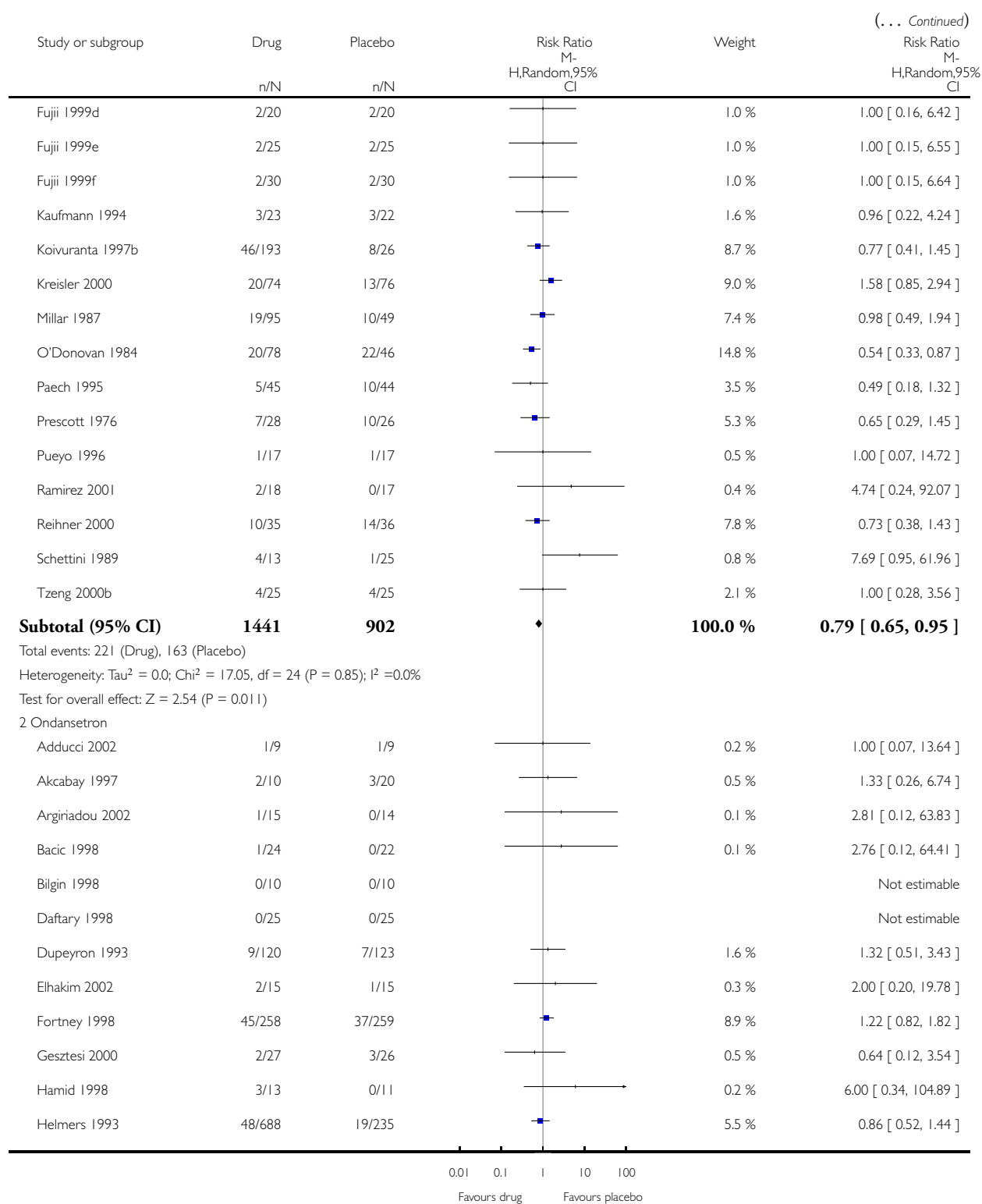
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

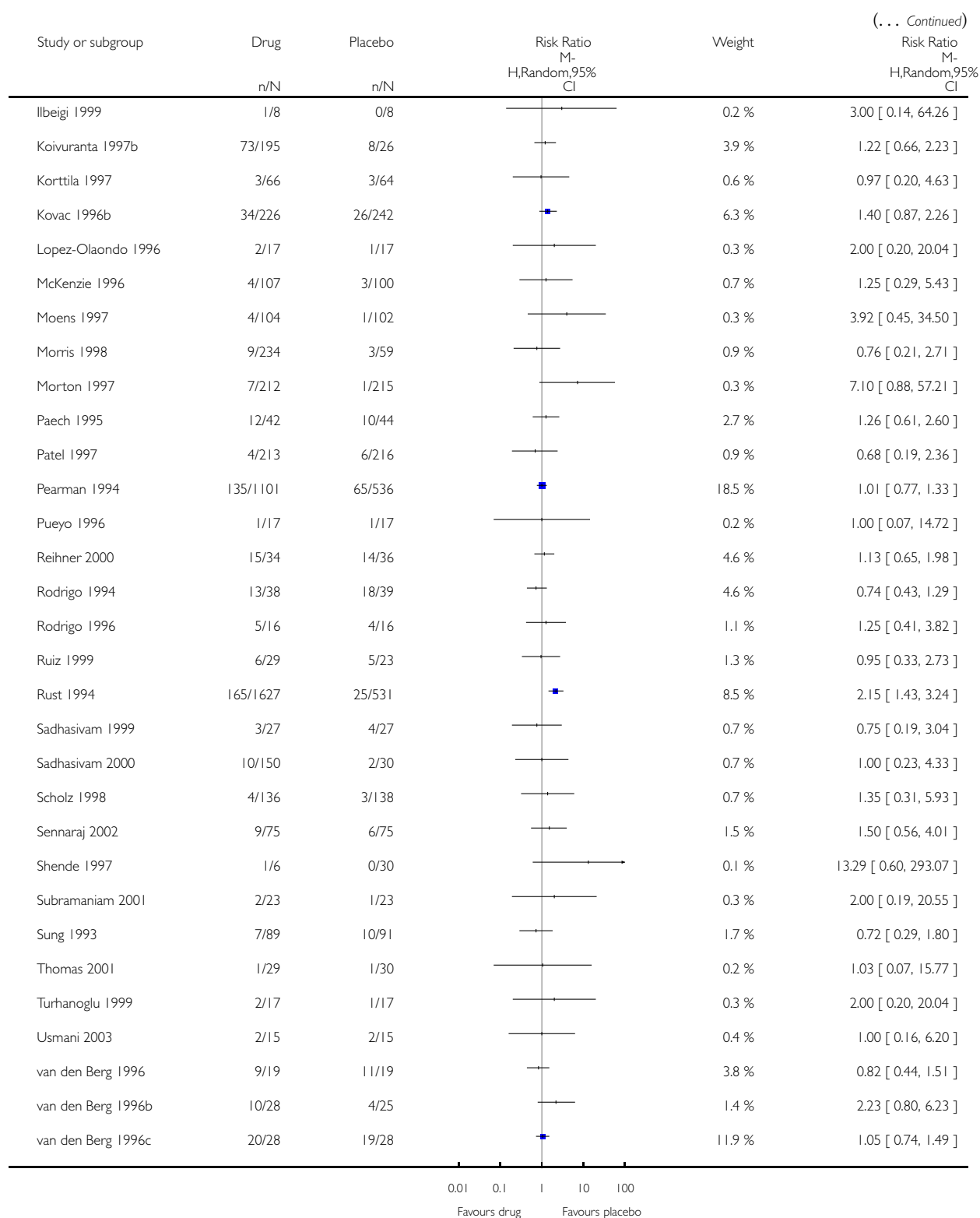
Outcome: 5 Headache



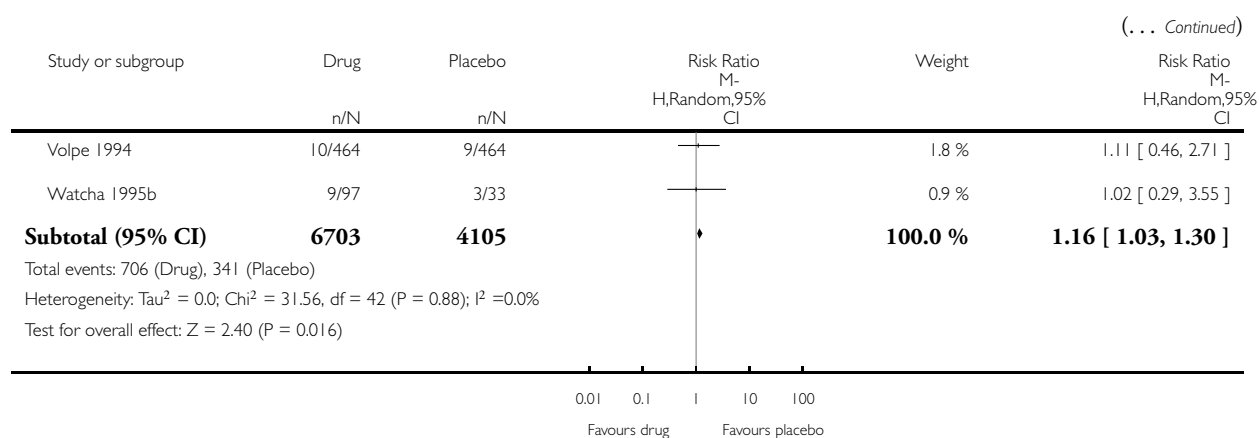
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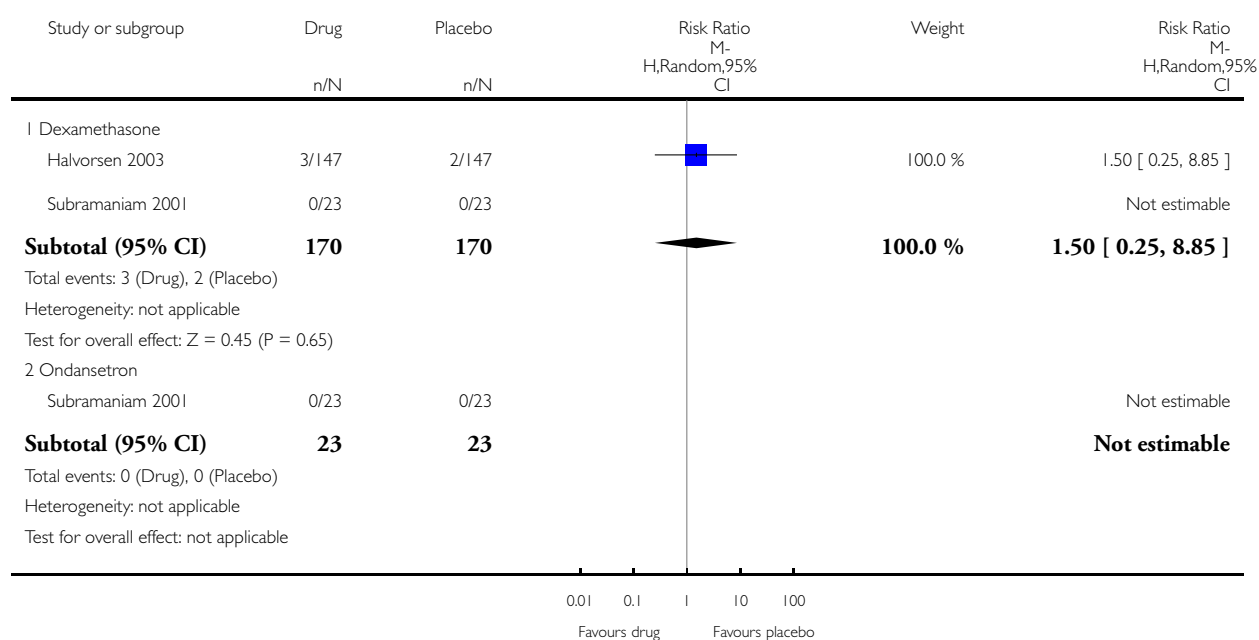


## Analysis 7.6. Comparison 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug, Outcome 6 Infection.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 7 PRIMARY ANALYSIS: Side effects; Placebo versus Drug

Outcome: 6 Infection



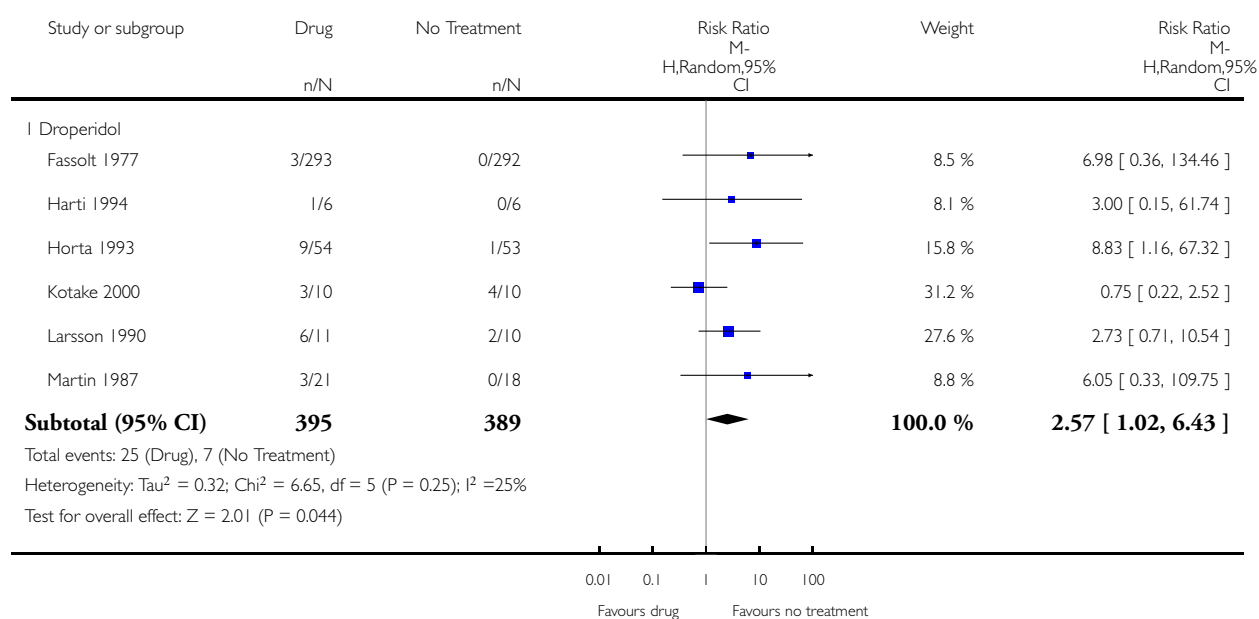


# **Analysis 8.1. Comparison 8 PRIMARY ANALYSIS: Side effects; No Treatment versus Drug, Outcome 1 Drowsiness or sedation.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 8 PRIMARY ANALYSIS: Side effects; No Treatment versus Drug

Outcome: 1 Drowsiness or sedation

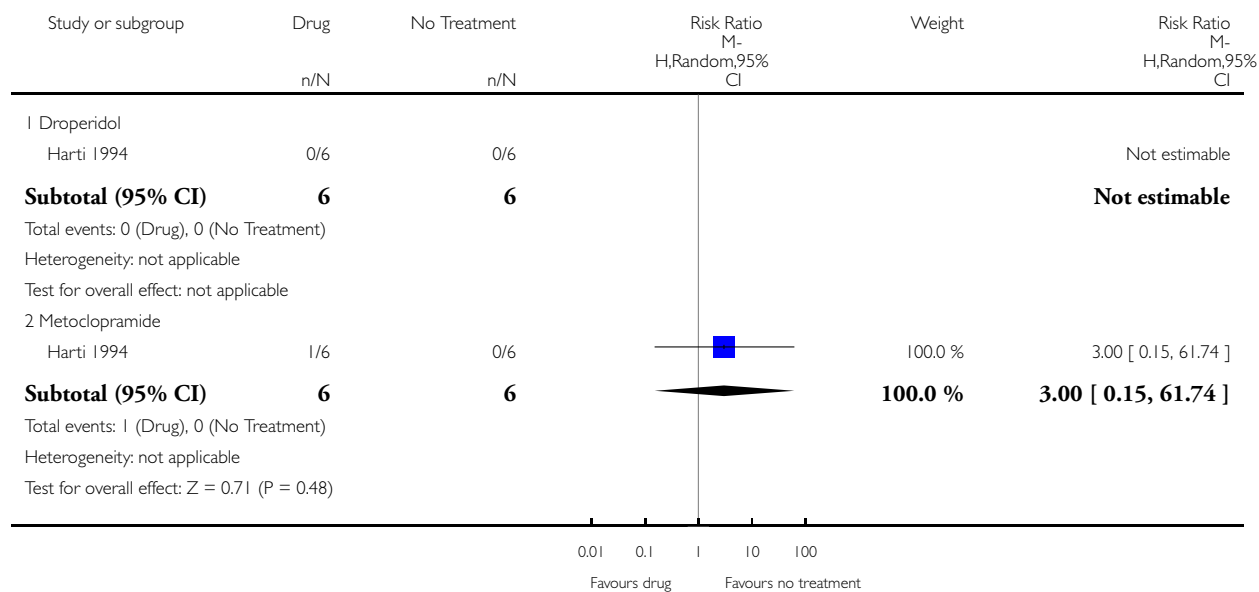


## Analysis 8.2. Comparison 8 PRIMARY ANALYSIS: Side effects; No Treatment versus Drug, Outcome 2 Extrapyramidal reaction.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 8 PRIMARY ANALYSIS: Side effects; No Treatment versus Drug

Outcome: 2 Extrapyramidal reaction

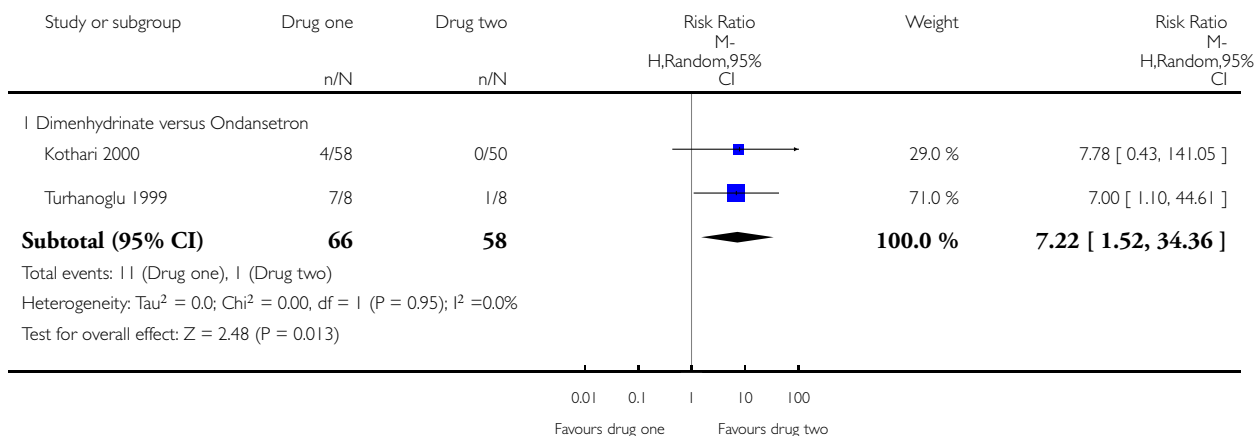


# **Analysis 9.1. Comparison 9 PRIMARY ANALYSIS: Side effects; Drug versus Drug, Outcome 1 Drowsiness or sedation.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 9 PRIMARY ANALYSIS: Side effects; Drug versus Drug

Outcome: 1 Drowsiness or sedation

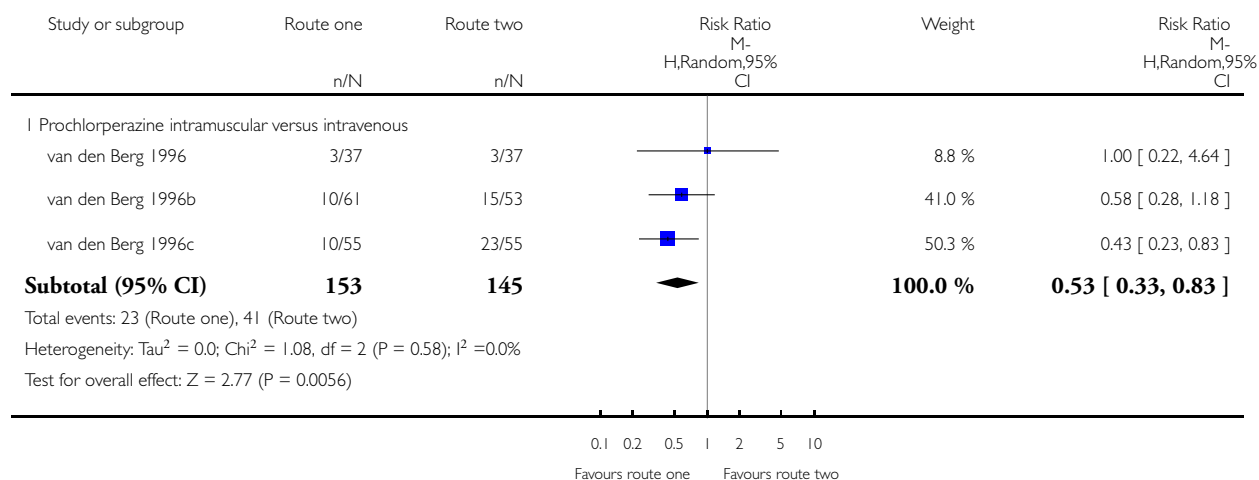


## Analysis 10.1. Comparison 10 SECONDARY ANALYSIS: Route versus Route, Outcome 1 Nausea.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 10 SECONDARY ANALYSIS: Route versus Route

Outcome: 1 Nausea

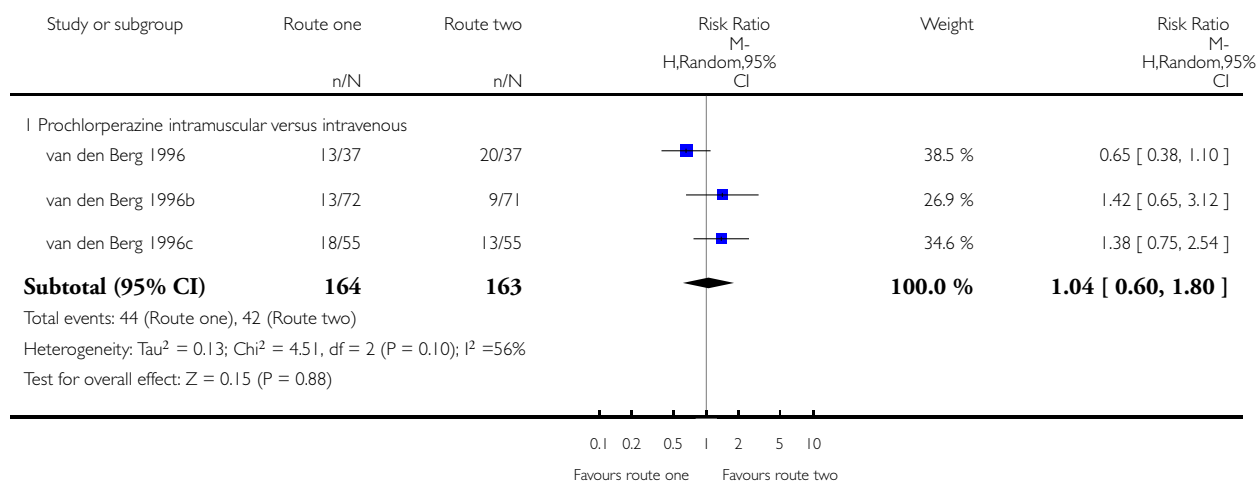


## Analysis 10.2. Comparison 10 SECONDARY ANALYSIS: Route versus Route, Outcome 2 Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 10 SECONDARY ANALYSIS: Route versus Route

Outcome: 2 Vomiting

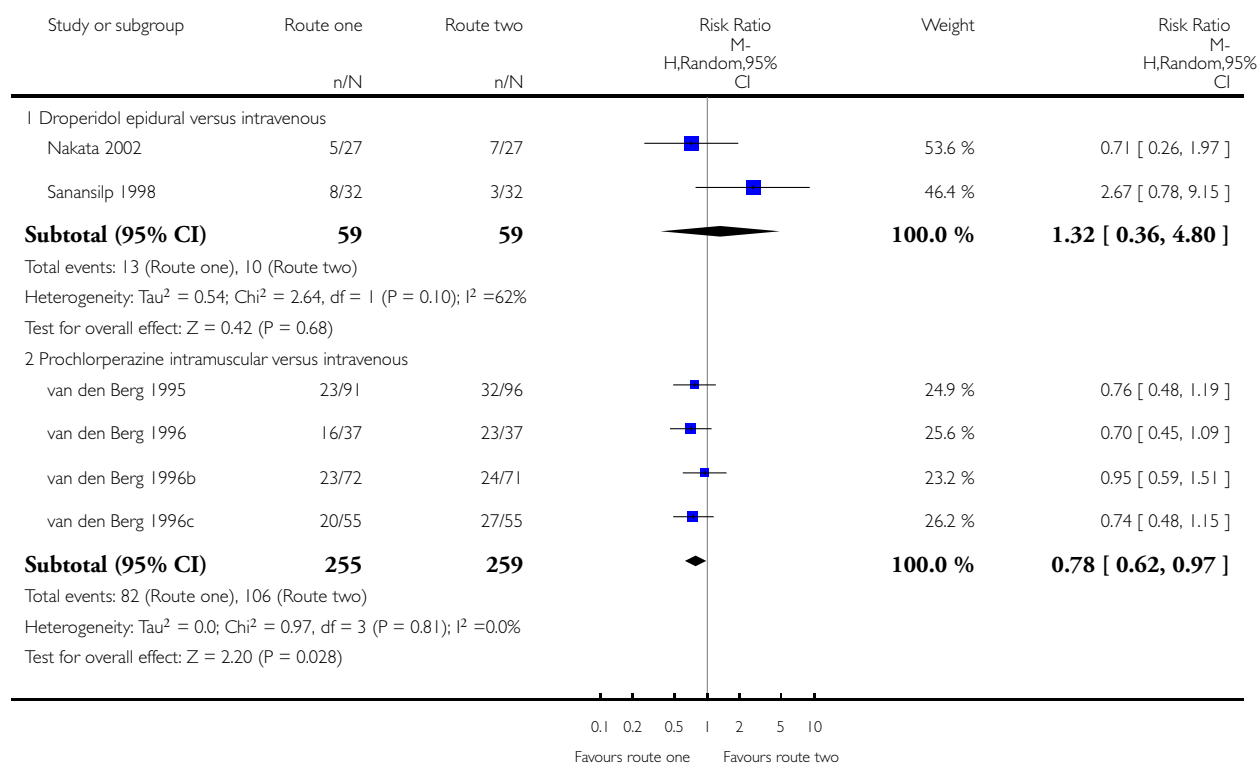


### Analysis 10.3. Comparison 10 SECONDARY ANALYSIS: Route versus Route, Outcome 3 Nausea or Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 10 SECONDARY ANALYSIS: Route versus Route

Outcome: 3 Nausea or Vomiting

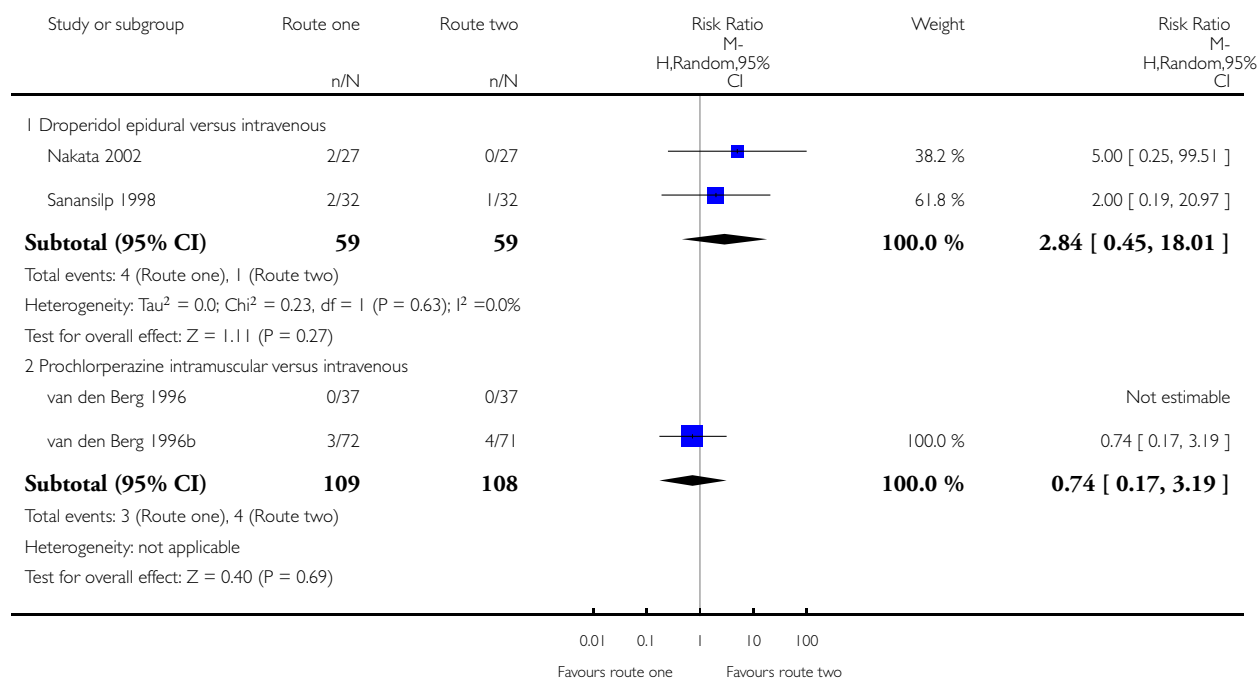


# **Analysis 10.4. Comparison 10 SECONDARY ANALYSIS: Route versus Route, Outcome 4 Rescue antiemetic.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 10 SECONDARY ANALYSIS: Route versus Route

Outcome: 4 Rescue antiemetic

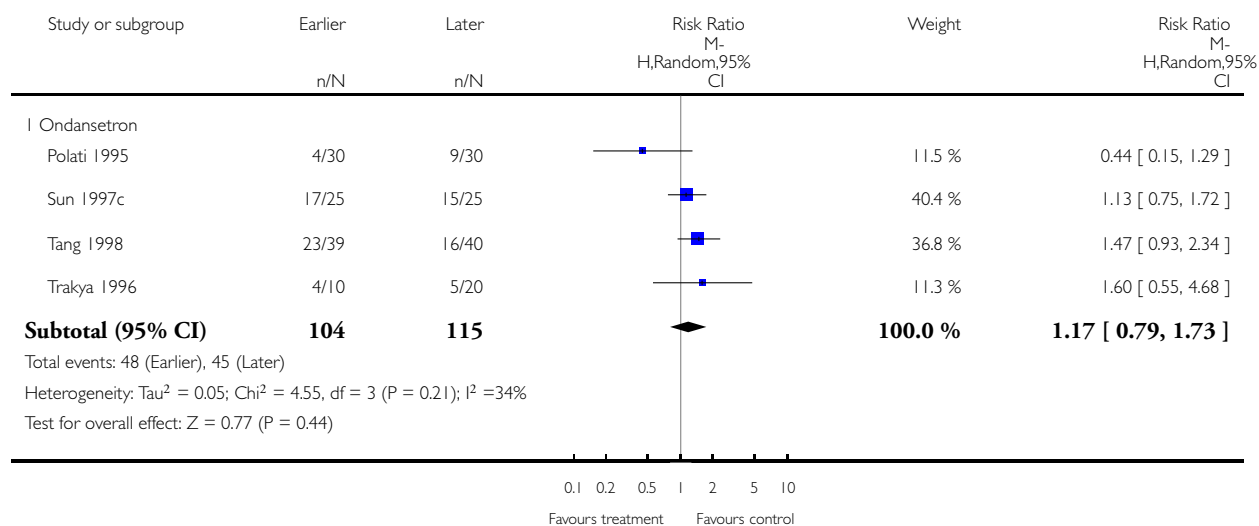


### Analysis 11.1. Comparison 11 SECONDARY ANALYSIS: Timing versus Timing, Outcome 1 Nausea.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 11 SECONDARY ANALYSIS: Timing versus Timing

Outcome: 1 Nausea



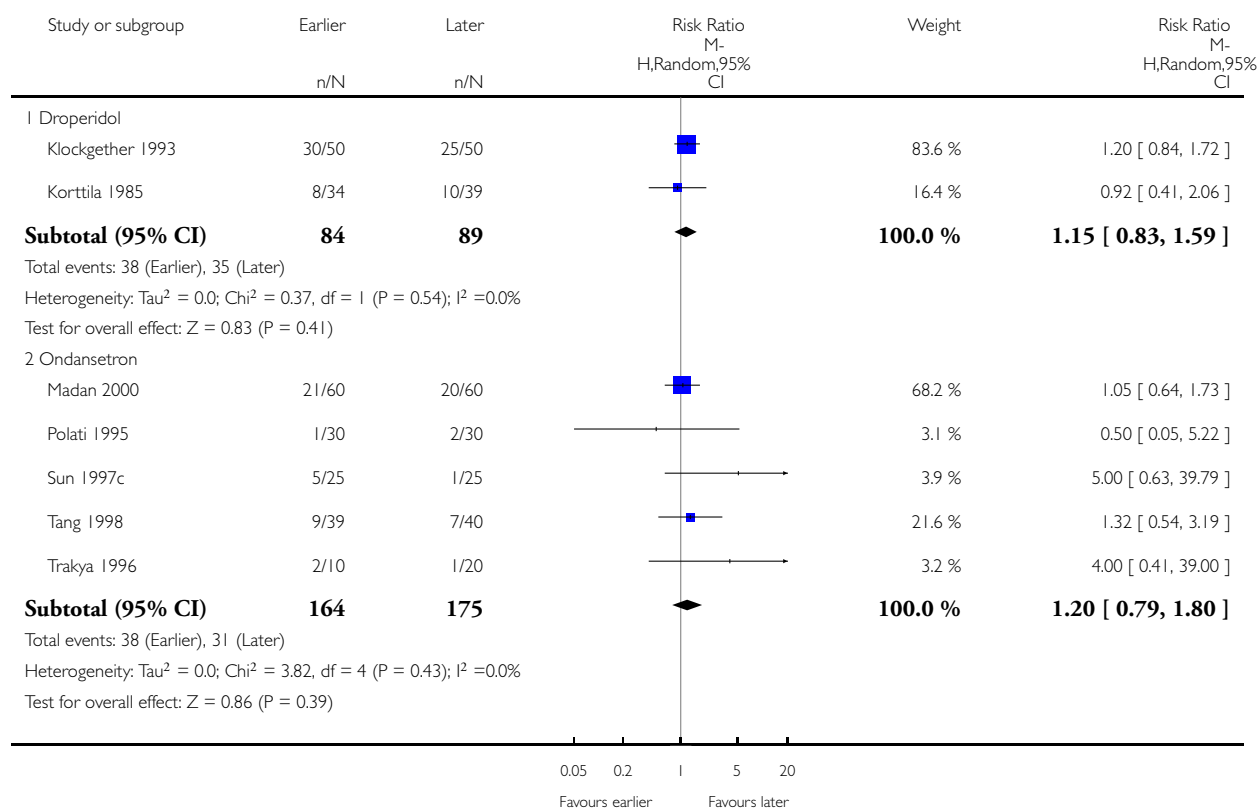


## Analysis 11.2. Comparison 11 SECONDARY ANALYSIS: Timing versus Timing, Outcome 2 Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 11 SECONDARY ANALYSIS: Timing versus Timing

Outcome: 2 Vomiting

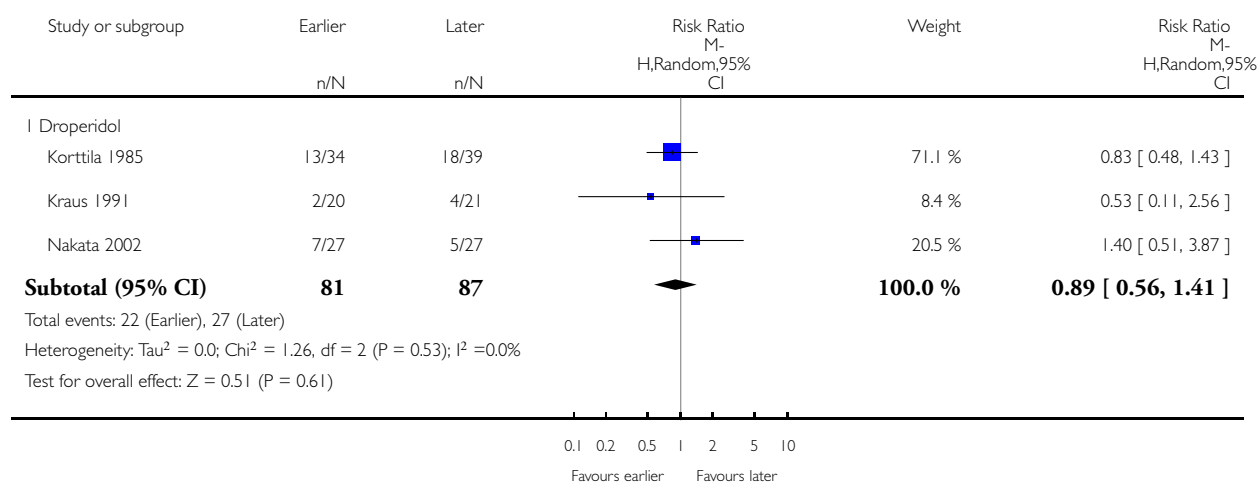


### Analysis 11.3. Comparison 11 SECONDARY ANALYSIS: Timing versus Timing, Outcome 3 Nausea or Vomiting.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 11 SECONDARY ANALYSIS: Timing versus Timing

Outcome: 3 Nausea or Vomiting

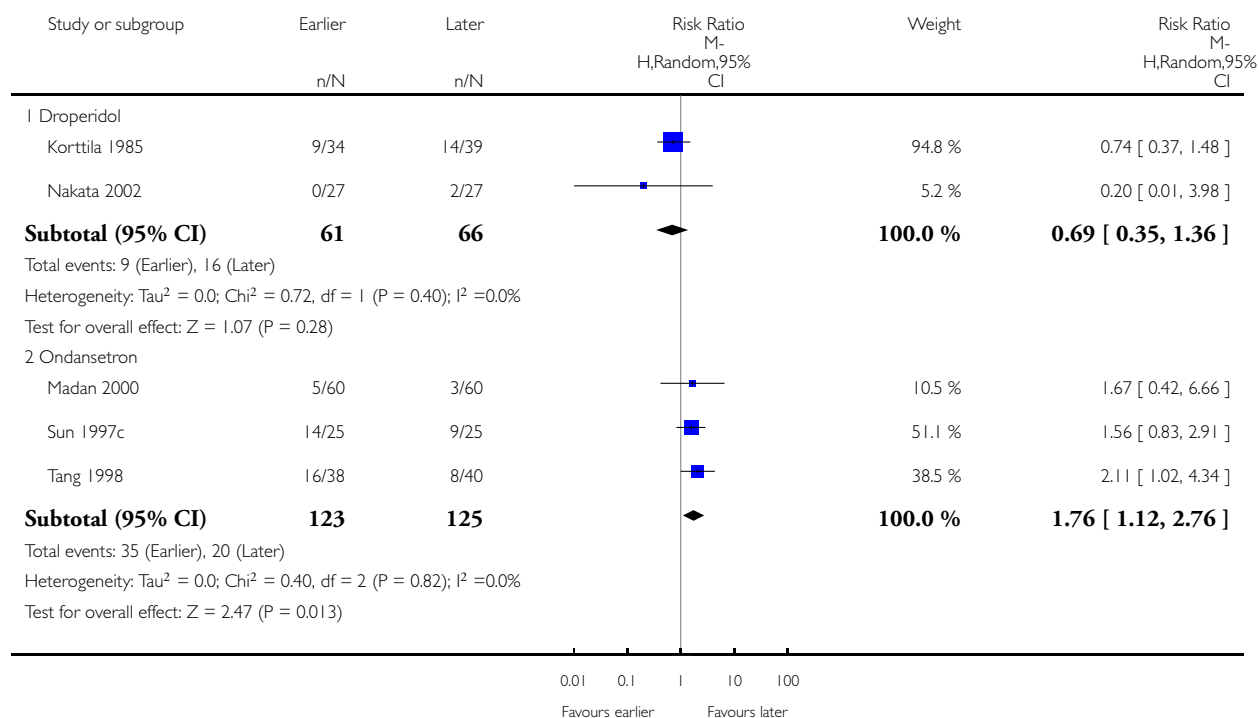


# **Analysis 11.4. Comparison 11 SECONDARY ANALYSIS: Timing versus Timing, Outcome 4 Rescue antiemetic.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 11 SECONDARY ANALYSIS: Timing versus Timing

Outcome: 4 Rescue antiemetic

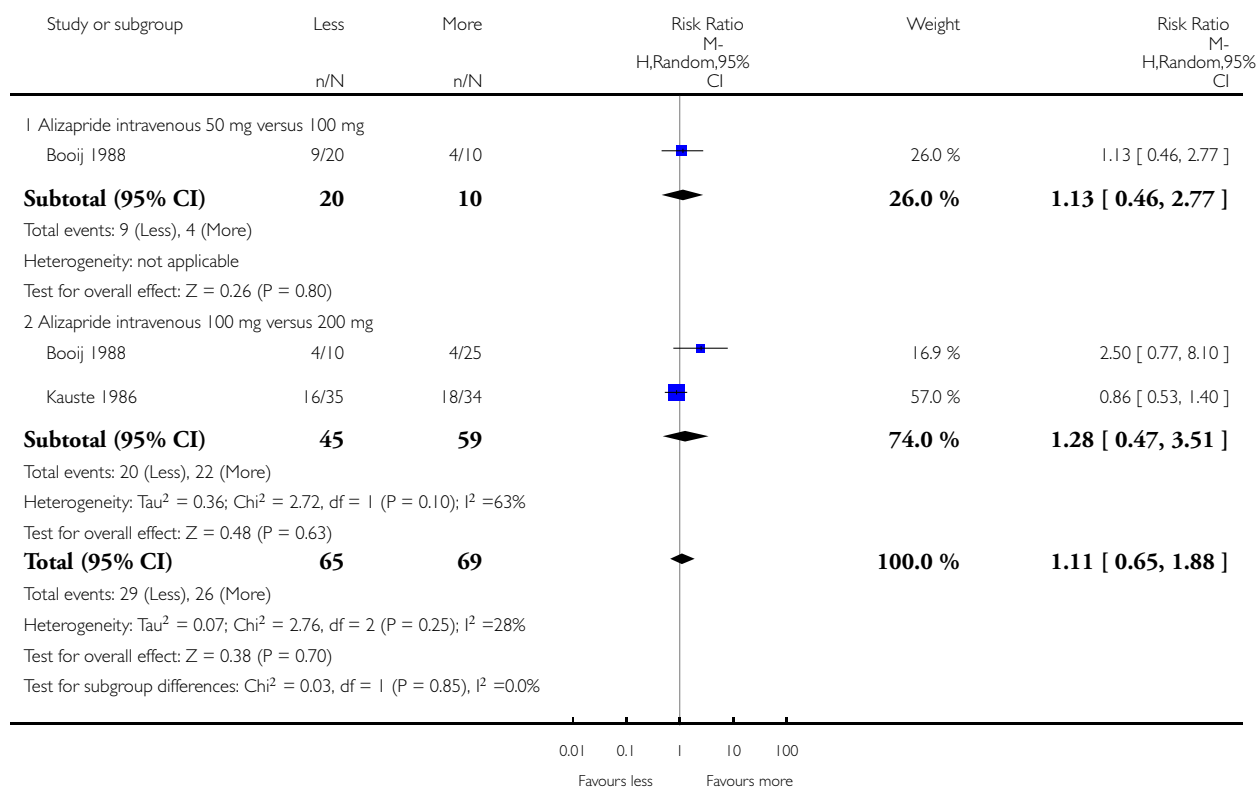


## Analysis 12.1. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 1 Nausea alizapride.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 1 Nausea alizapride

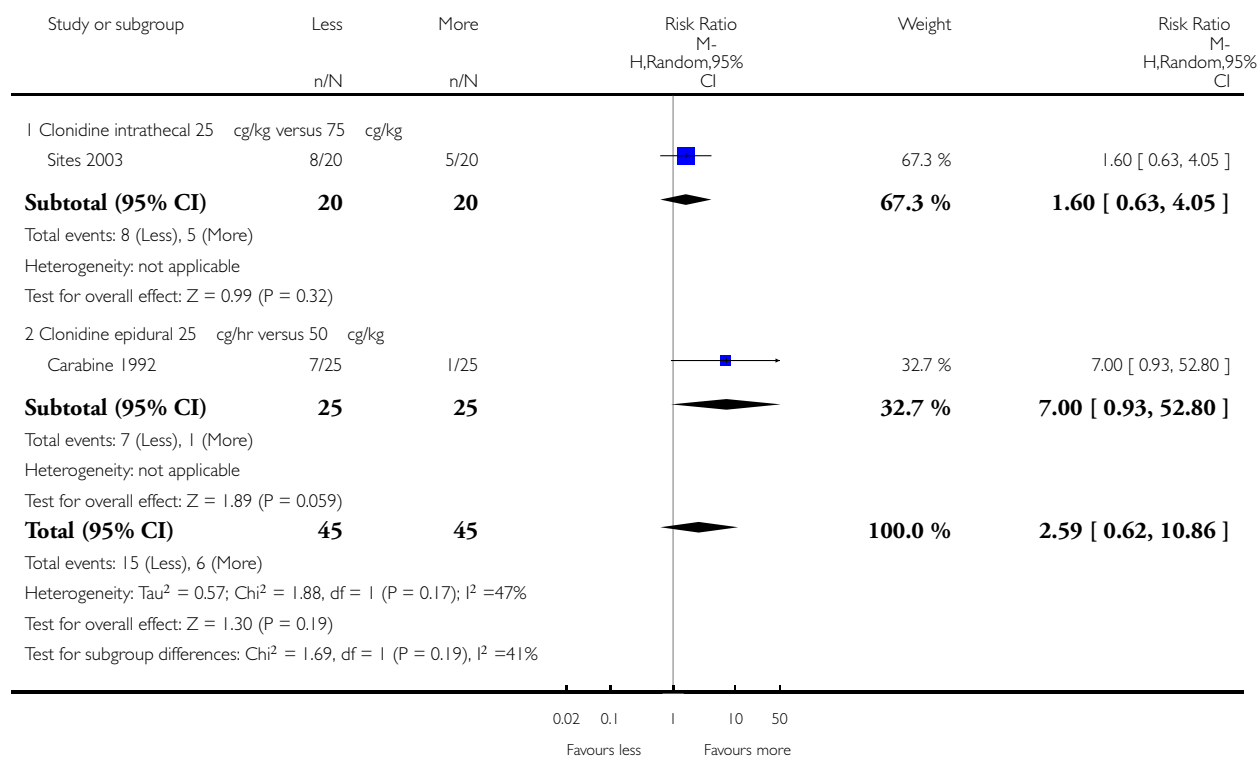


## Analysis 12.2. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 2 Nausea clonidine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 2 Nausea clonidine

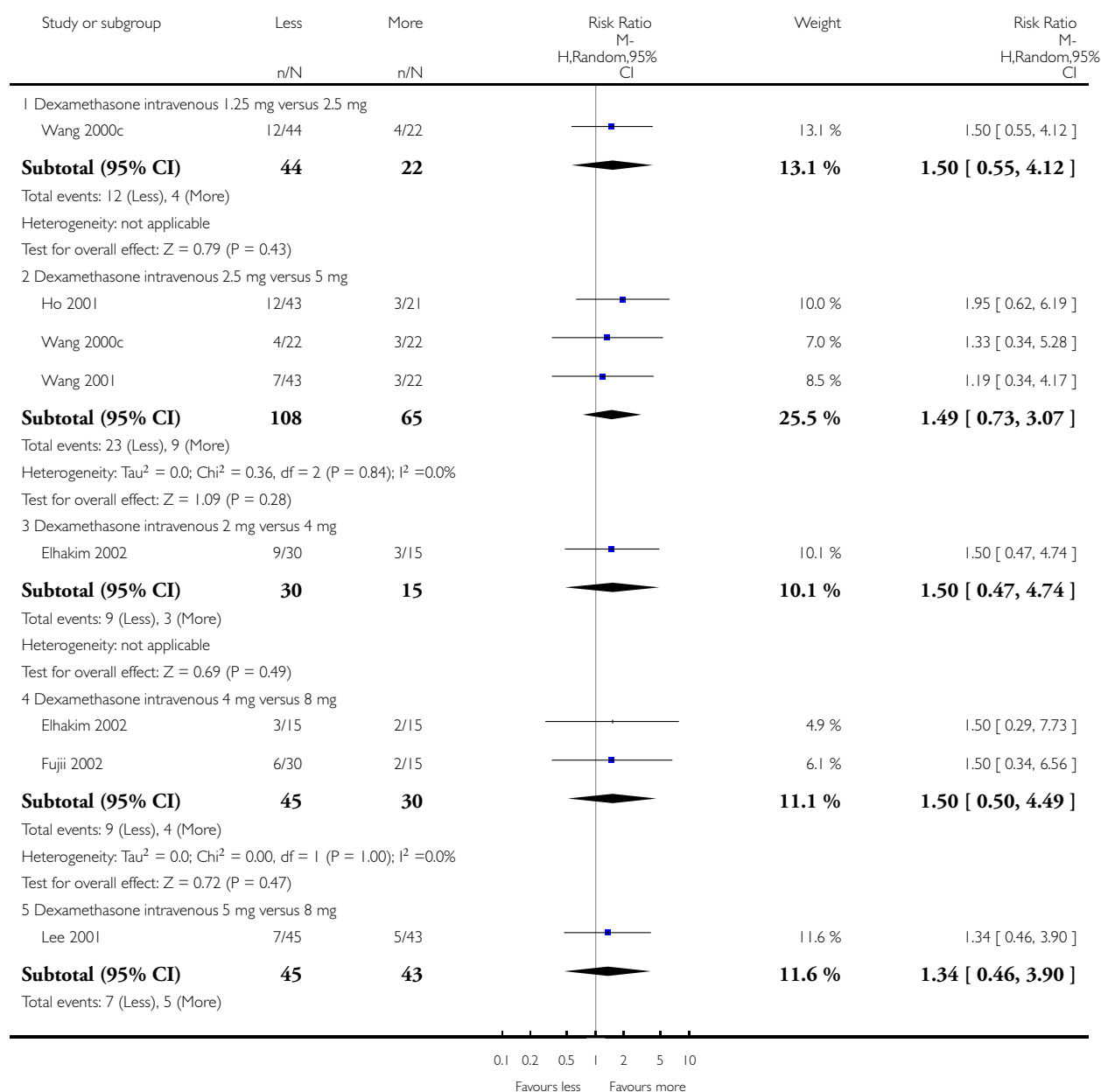


### Analysis 12.3. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 3 Nausea dexamethasone.

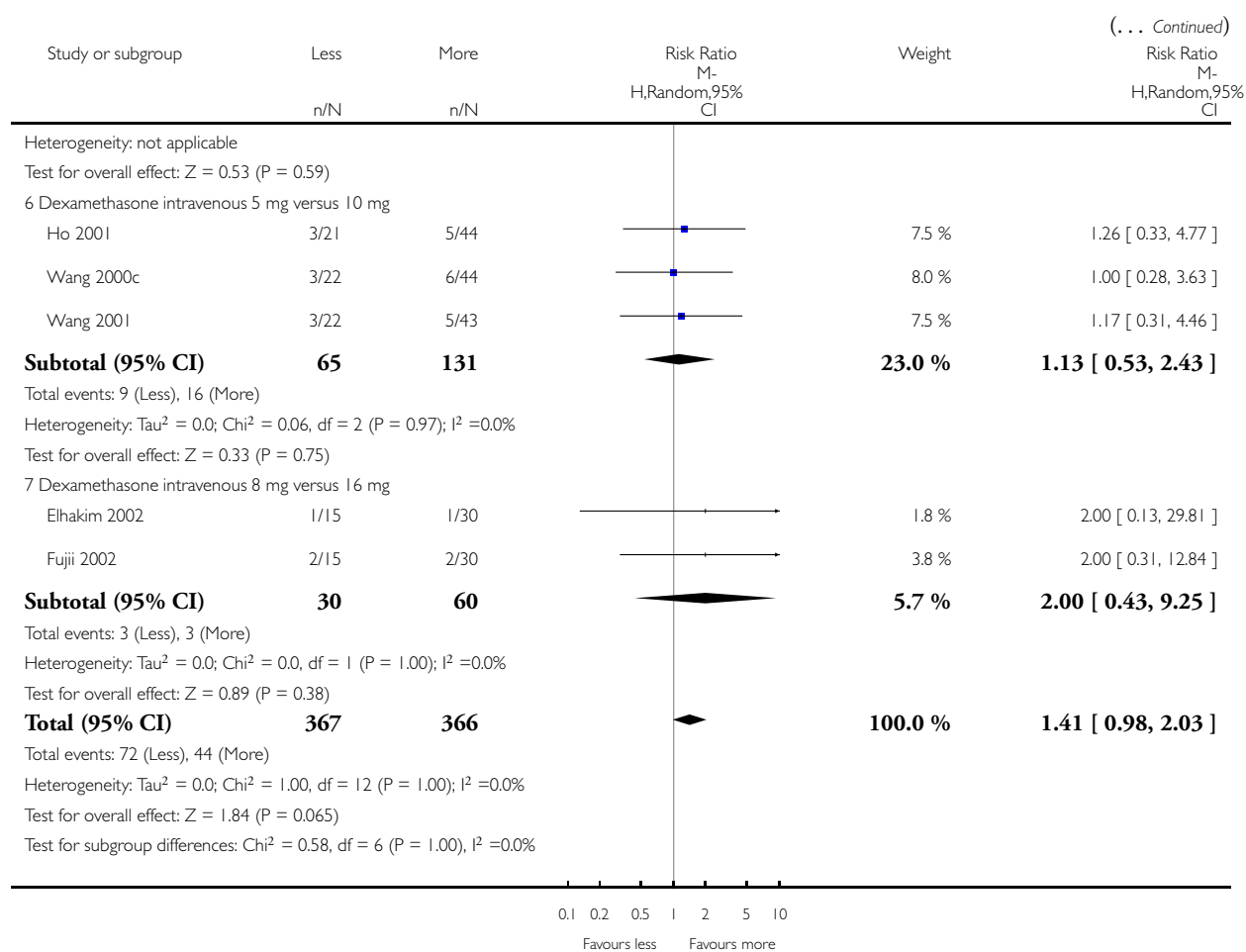
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 3 Nausea dexamethasone



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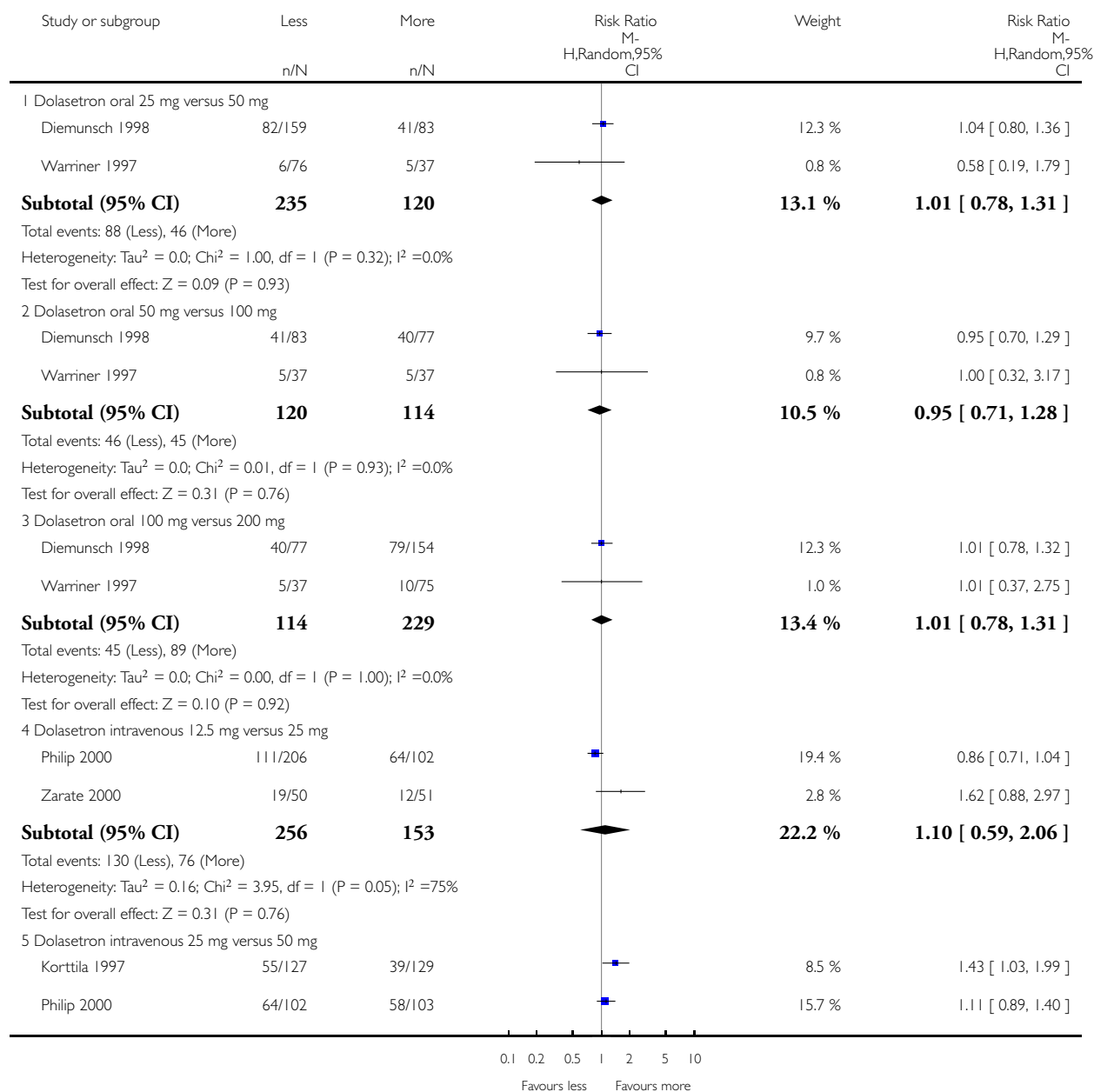


## Analysis 12.4. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 4 Nausea dolasetron.

Review: Drugs for preventing postoperative nausea and vomiting

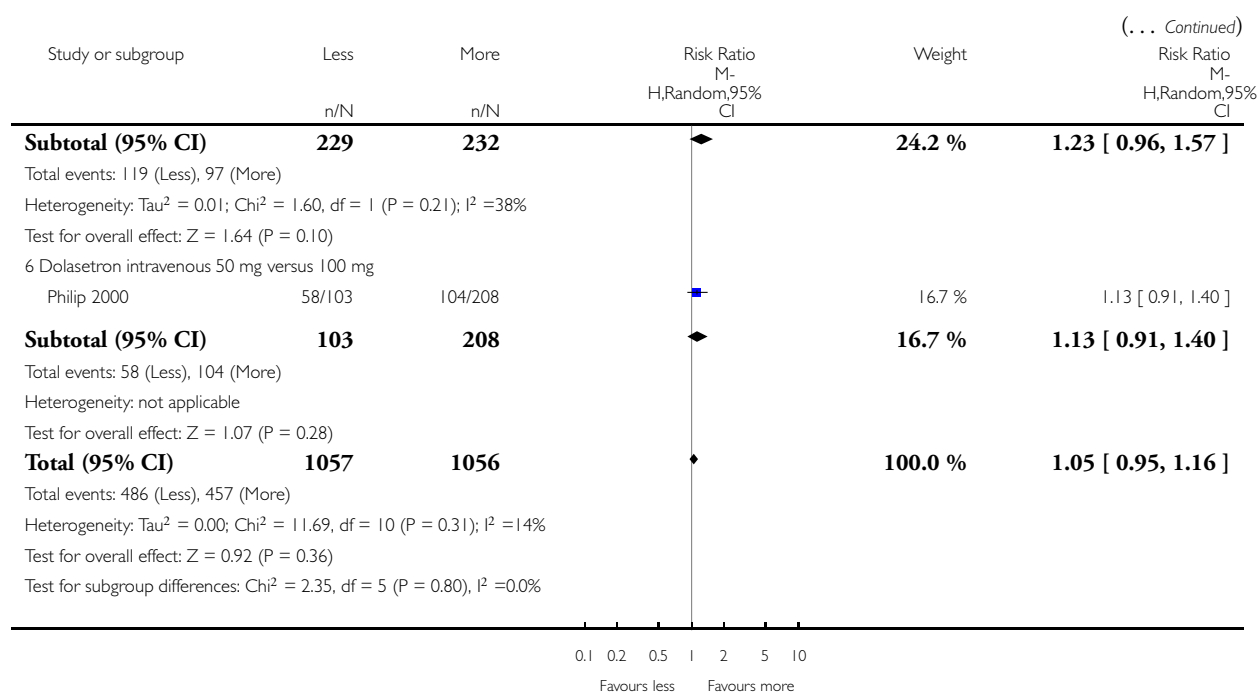
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 4 Nausea dolasetron



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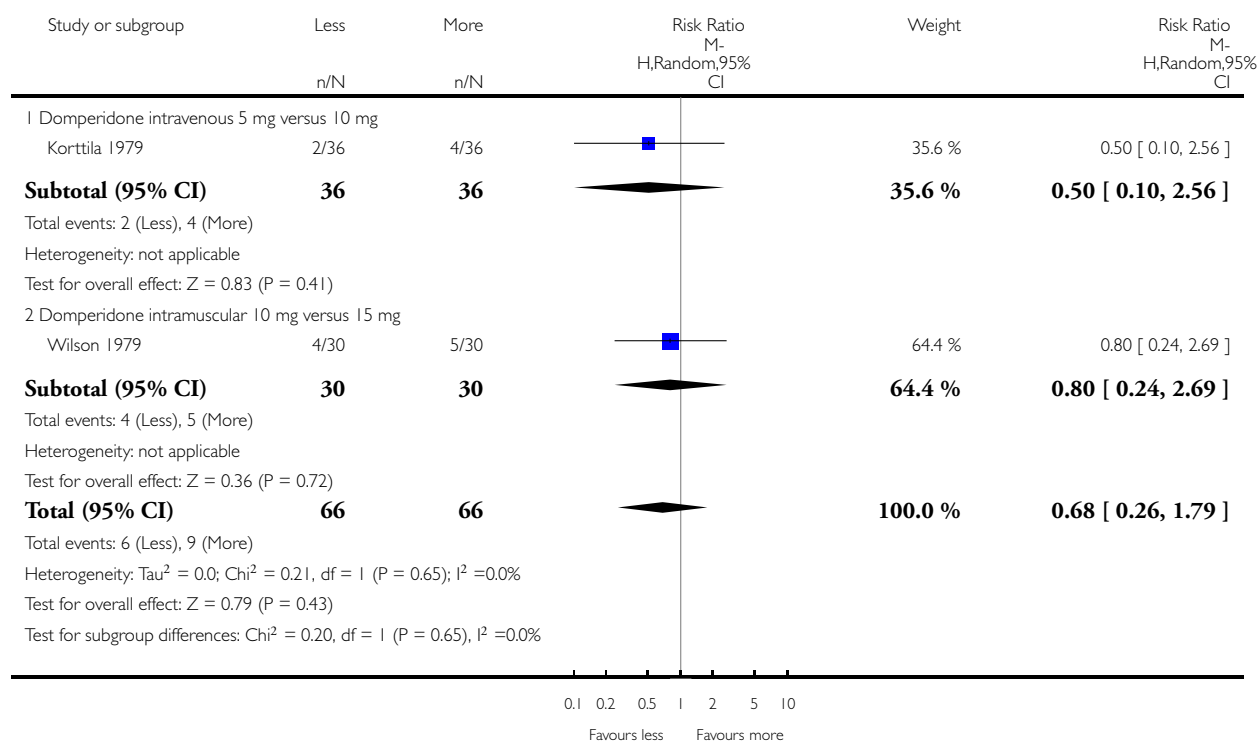


## Analysis 12.5. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 5 Nausea domperidone.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 5 Nausea domperidone

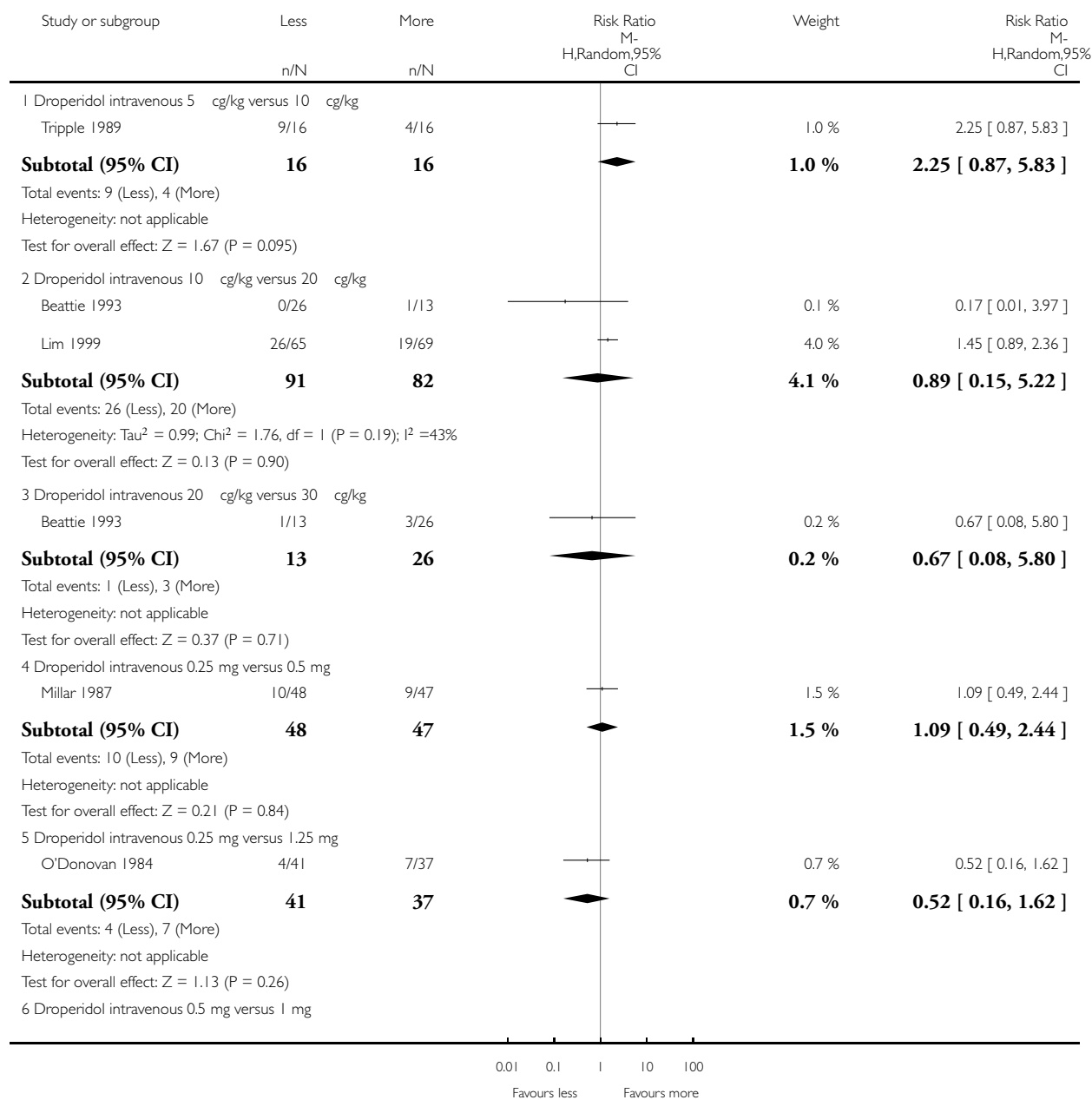


## Analysis 12.6. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 6 Nausea droperidol.

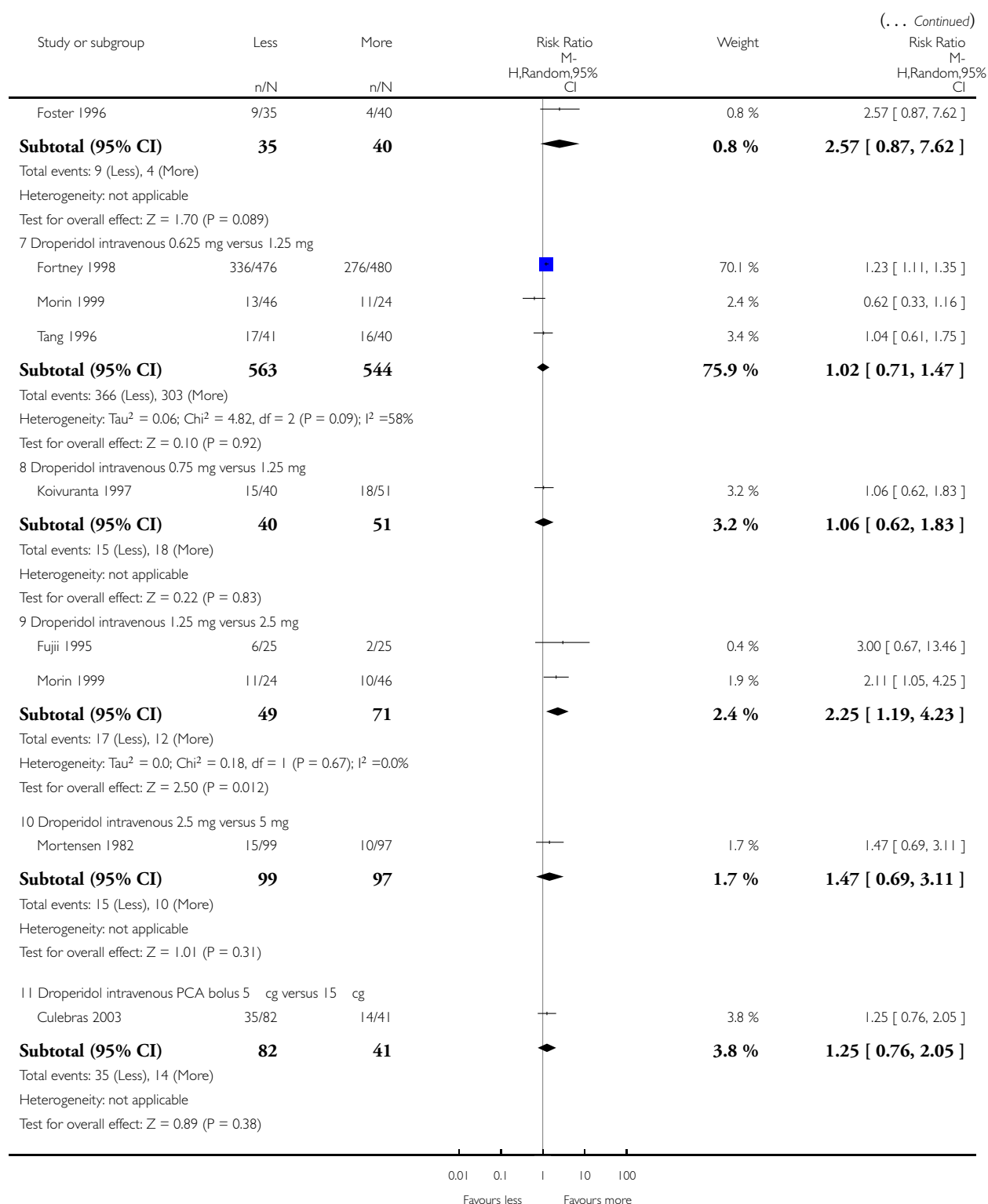
Review: Drugs for preventing postoperative nausea and vomiting

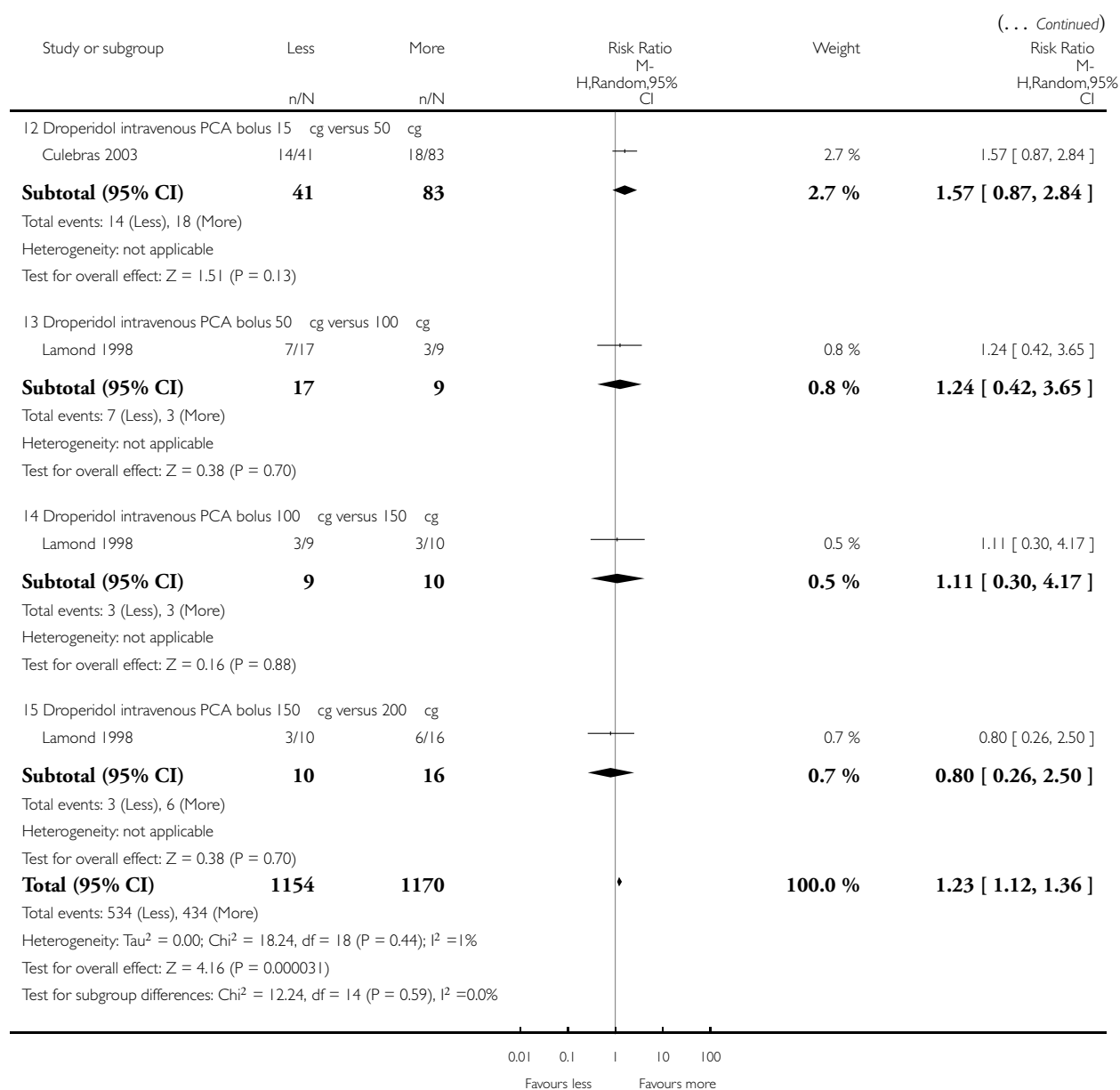
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 6 Nausea droperidol



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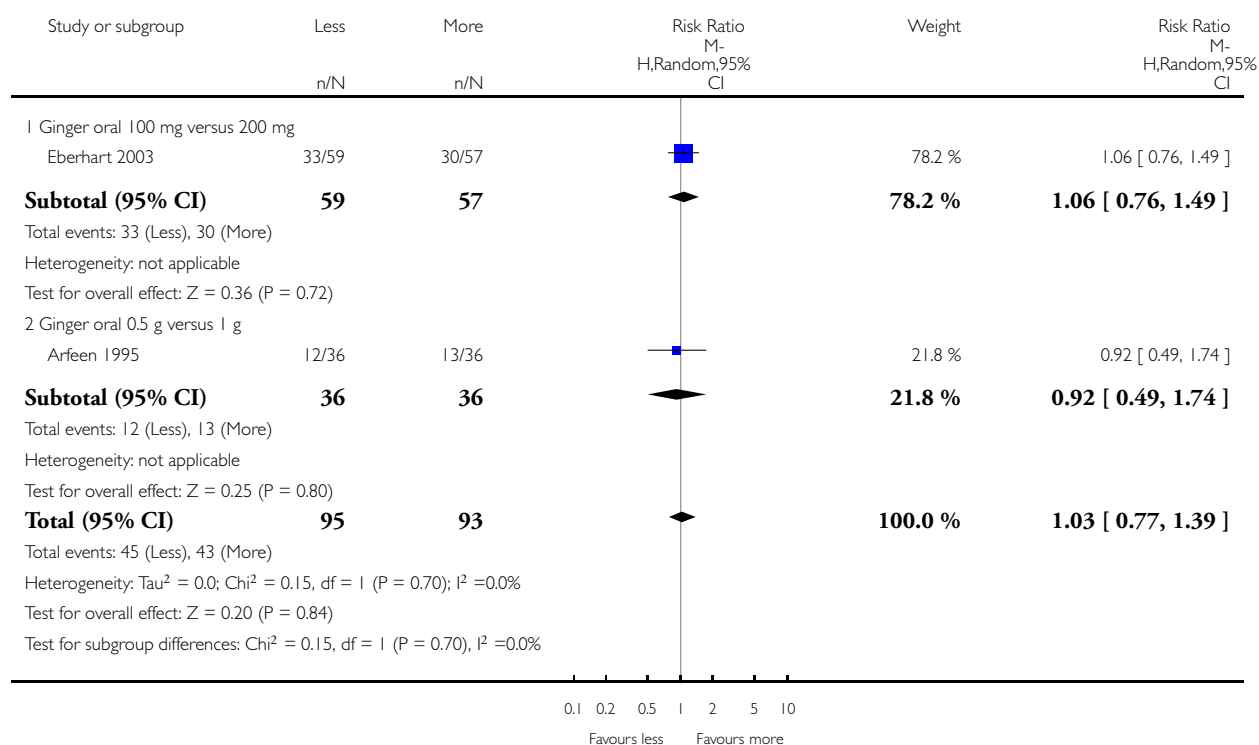


## Analysis 12.7. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 7 Nausea ginger.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 7 Nausea ginger

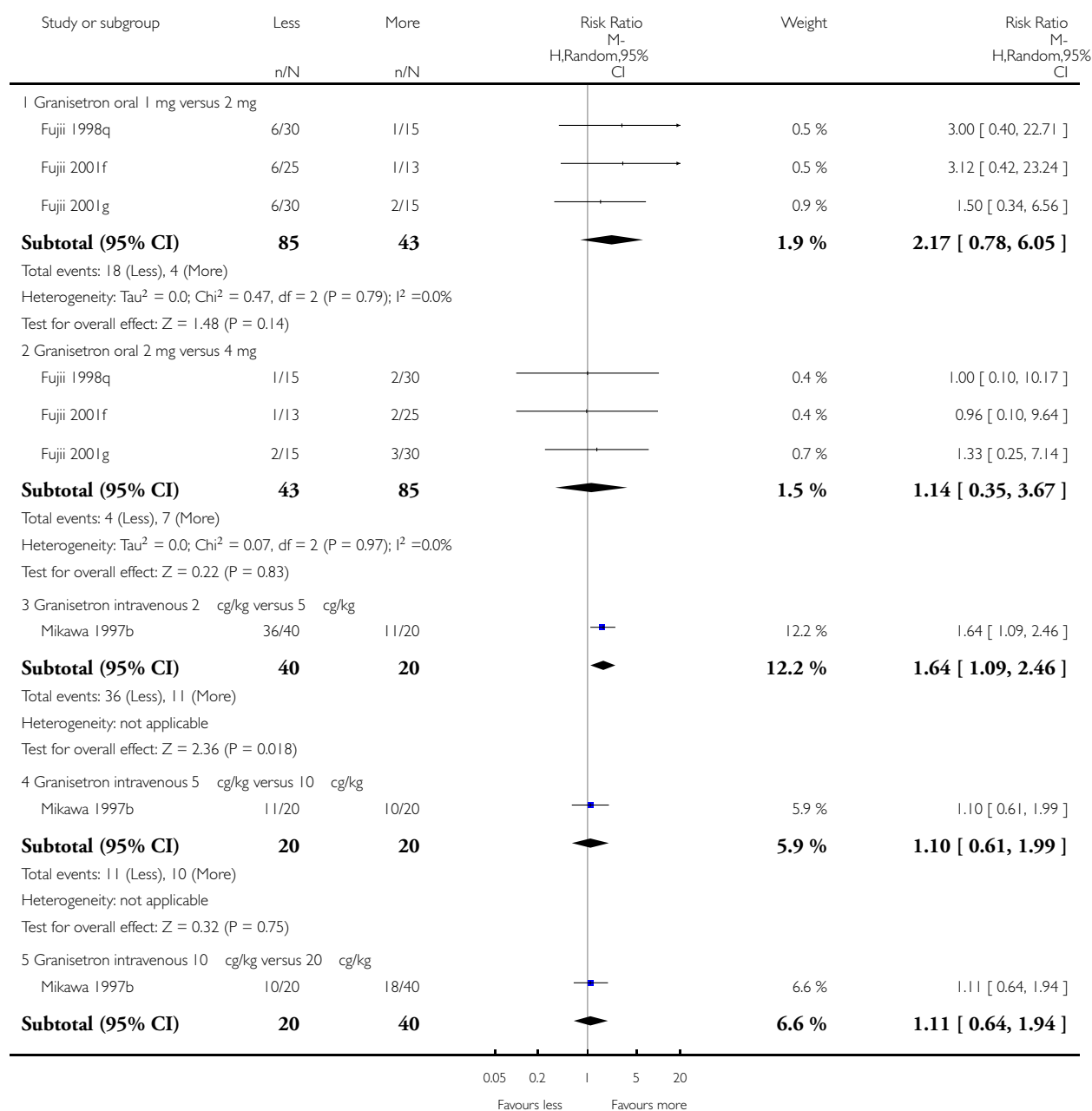


## Analysis 12.8. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 8 Nausea granisetron.

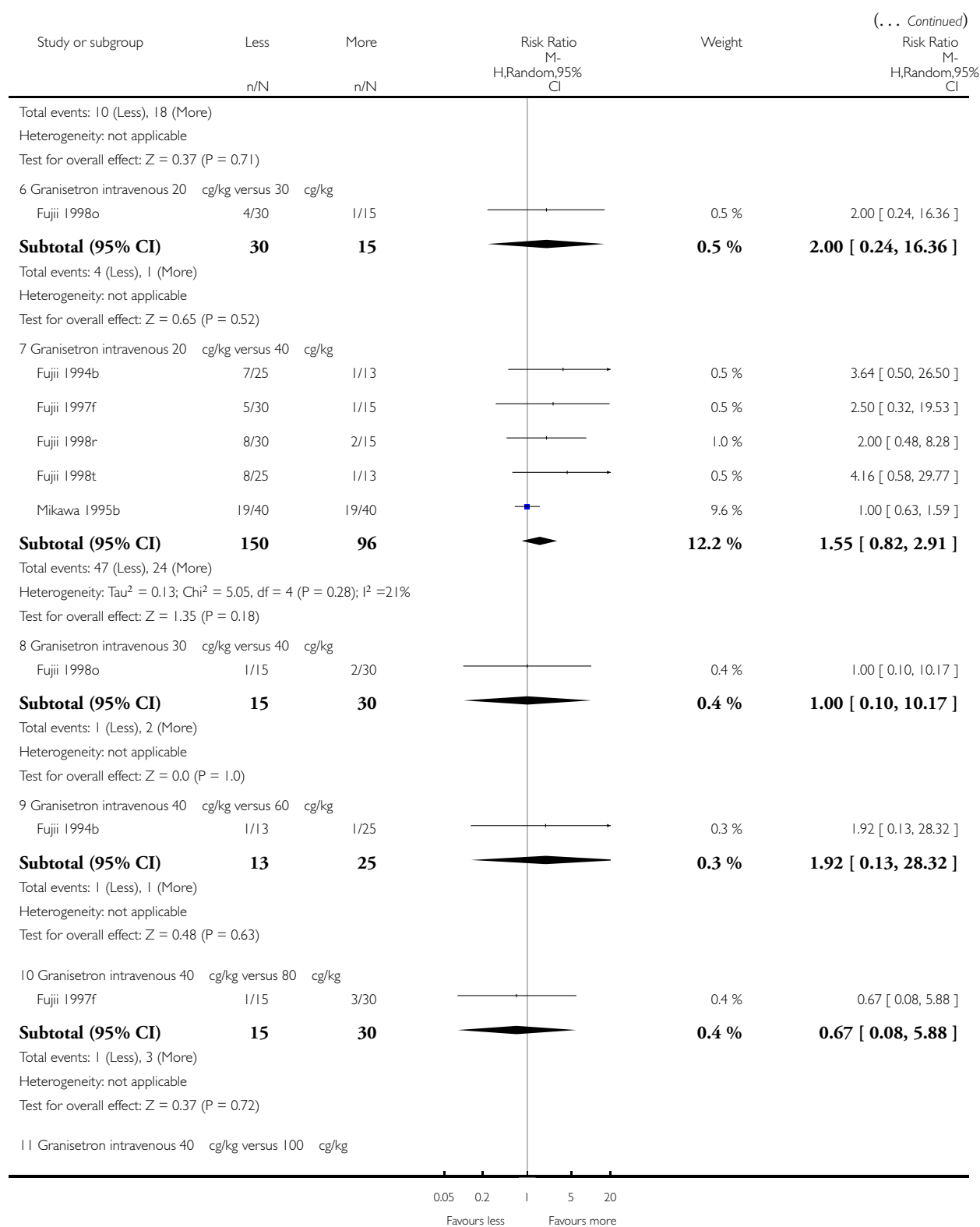
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

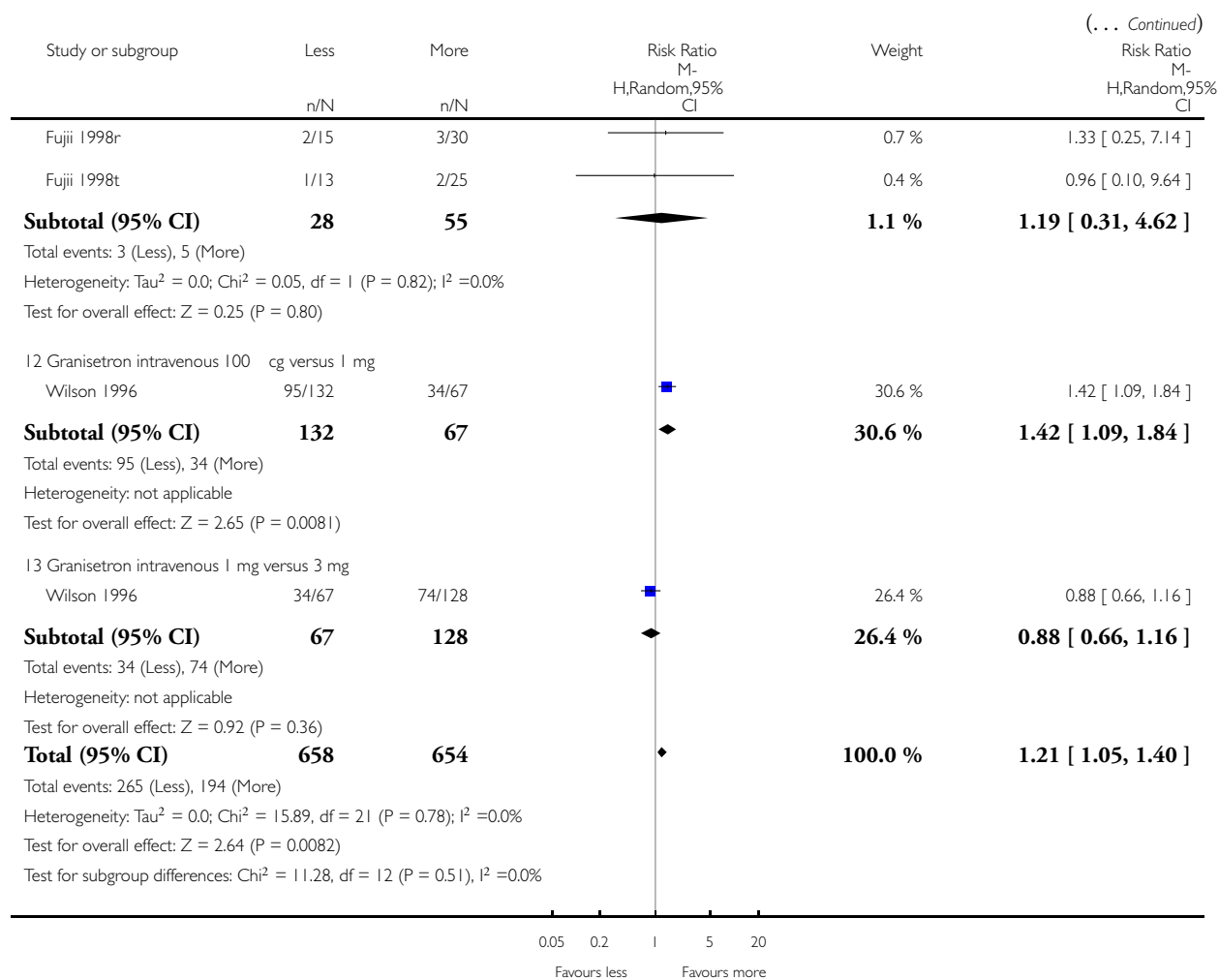
Outcome: 8 Nausea granisetron



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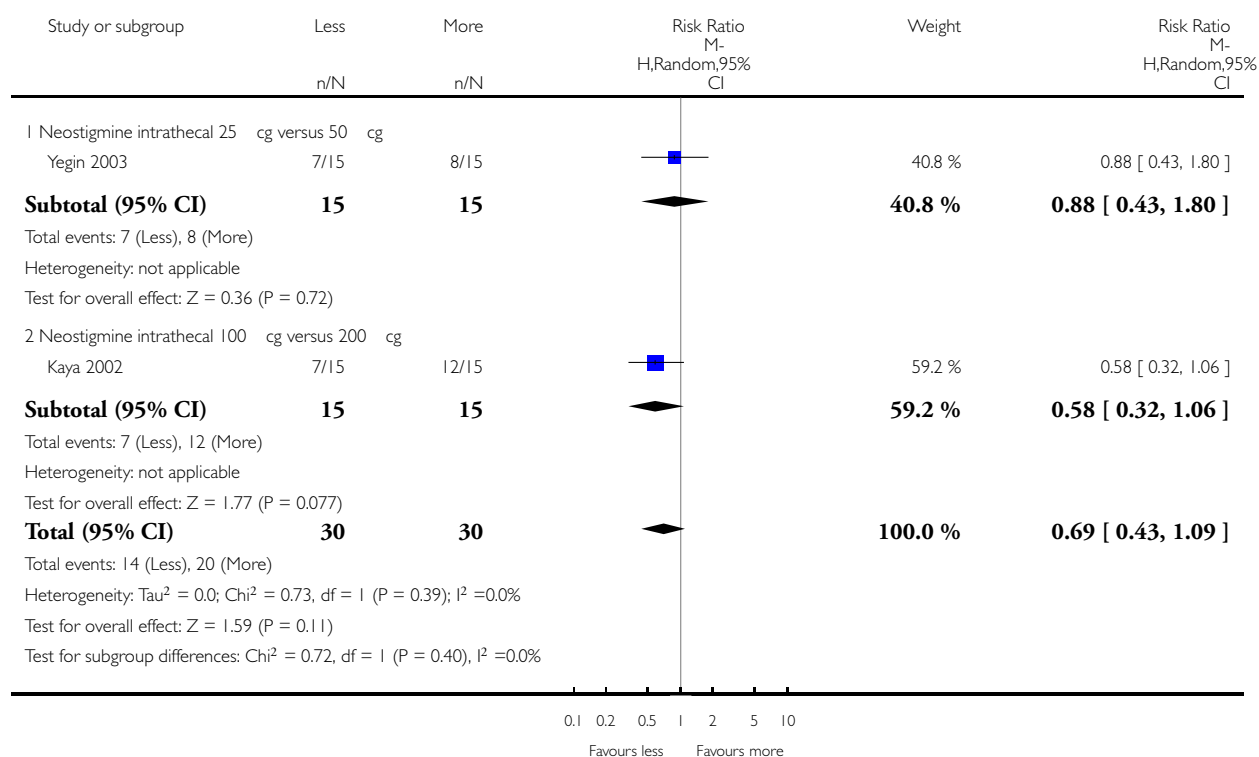


## Analysis 12.9. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 9 Nausea neostigmine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 9 Nausea neostigmine

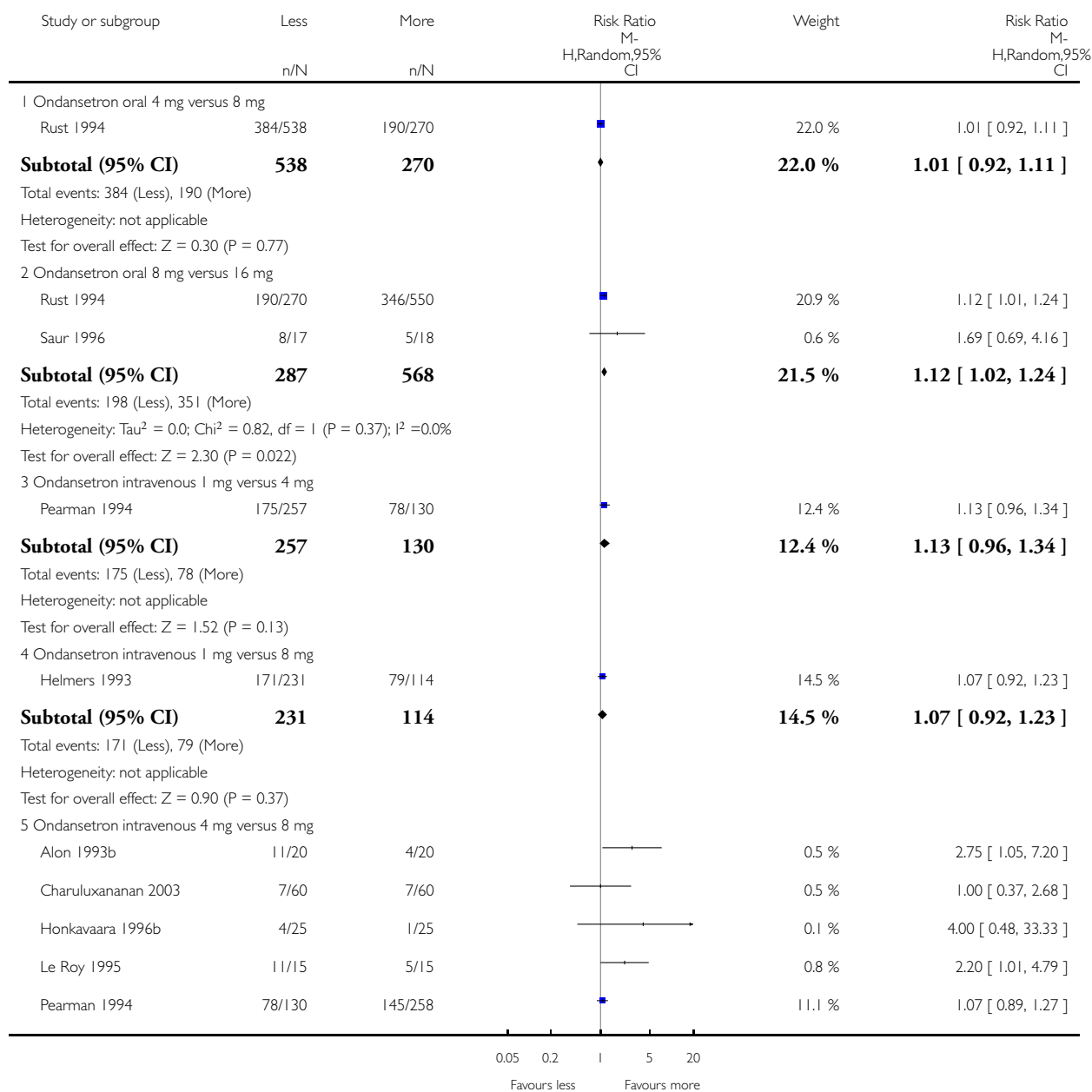


# **Analysis 12.10. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 10 Nausea ondansetron.**

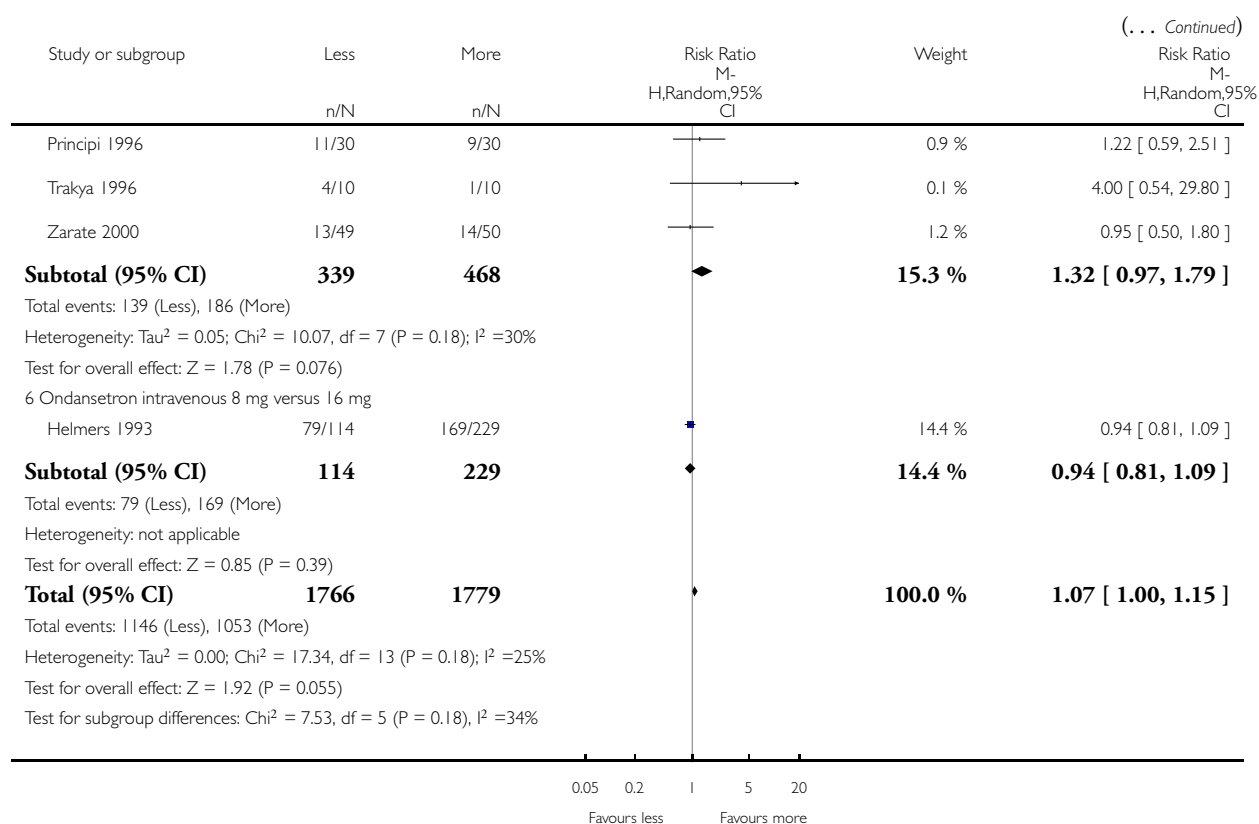
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 10 Nausea ondansetron



(Continued ...)

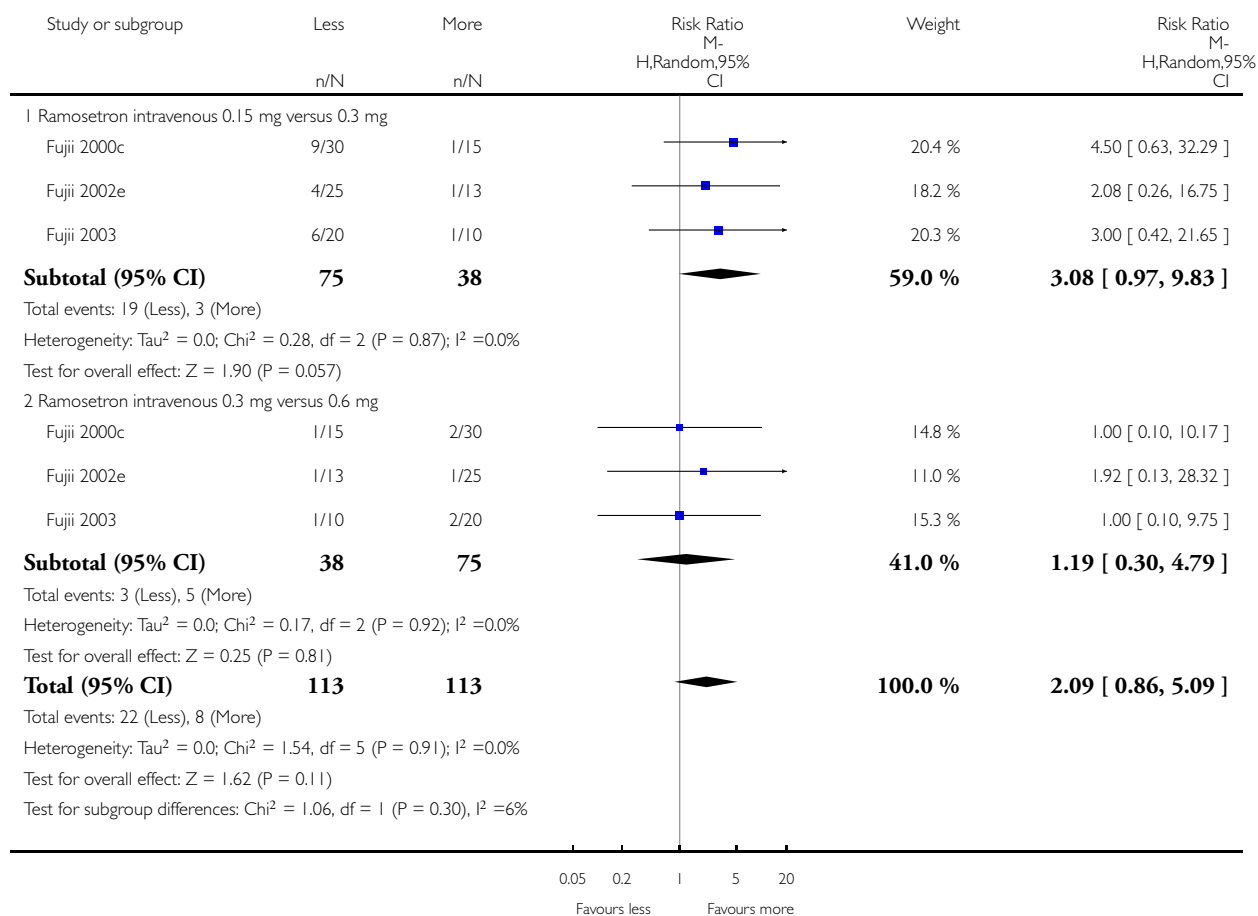


## Analysis 12.11. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 11 Nausea ramosetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 11 Nausea ramosetron

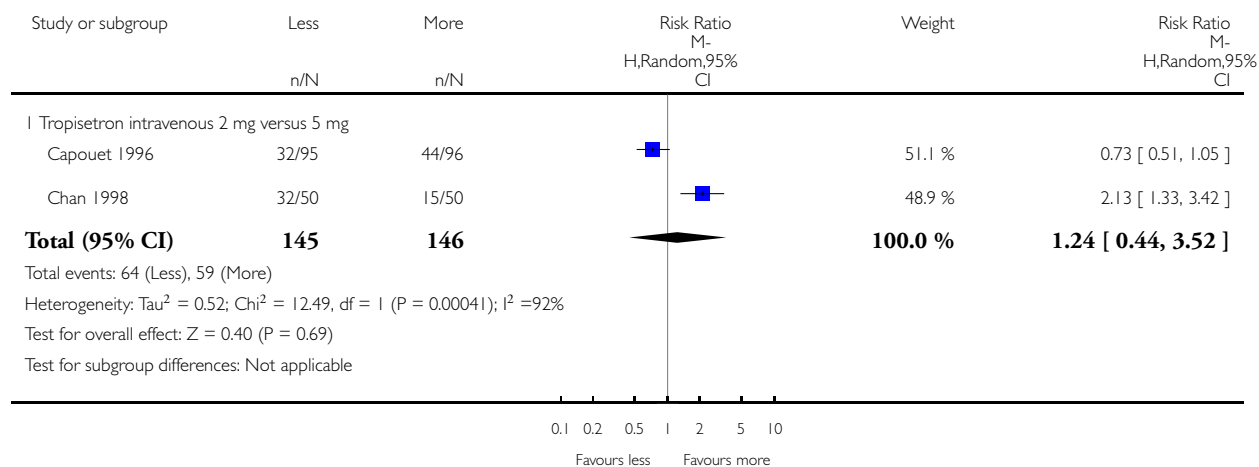


## Analysis 12.12. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 12 Nausea tropisetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 12 Nausea tropisetron

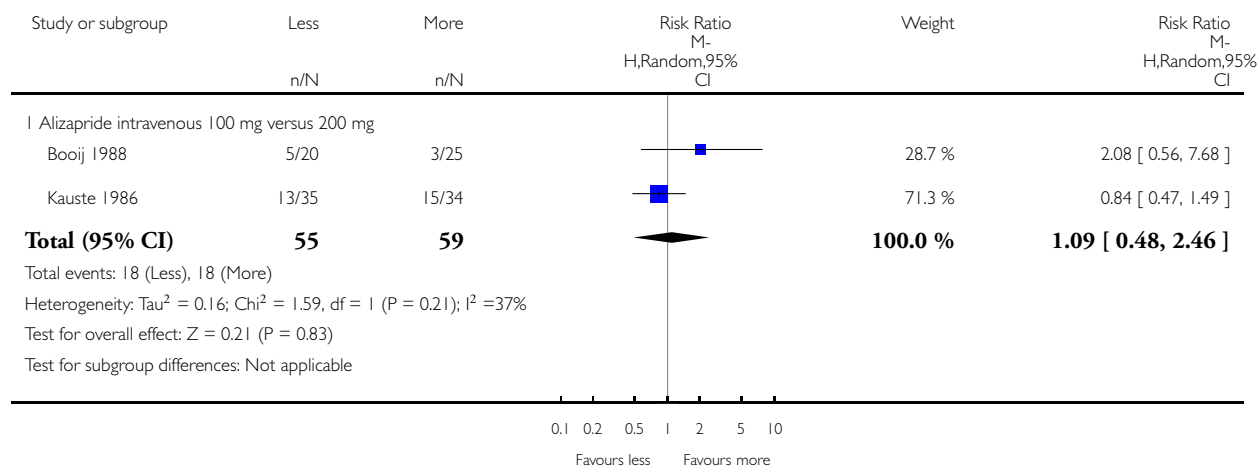


### Analysis 12.13. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 13 Vomiting alizapride.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 13 Vomiting alizapride

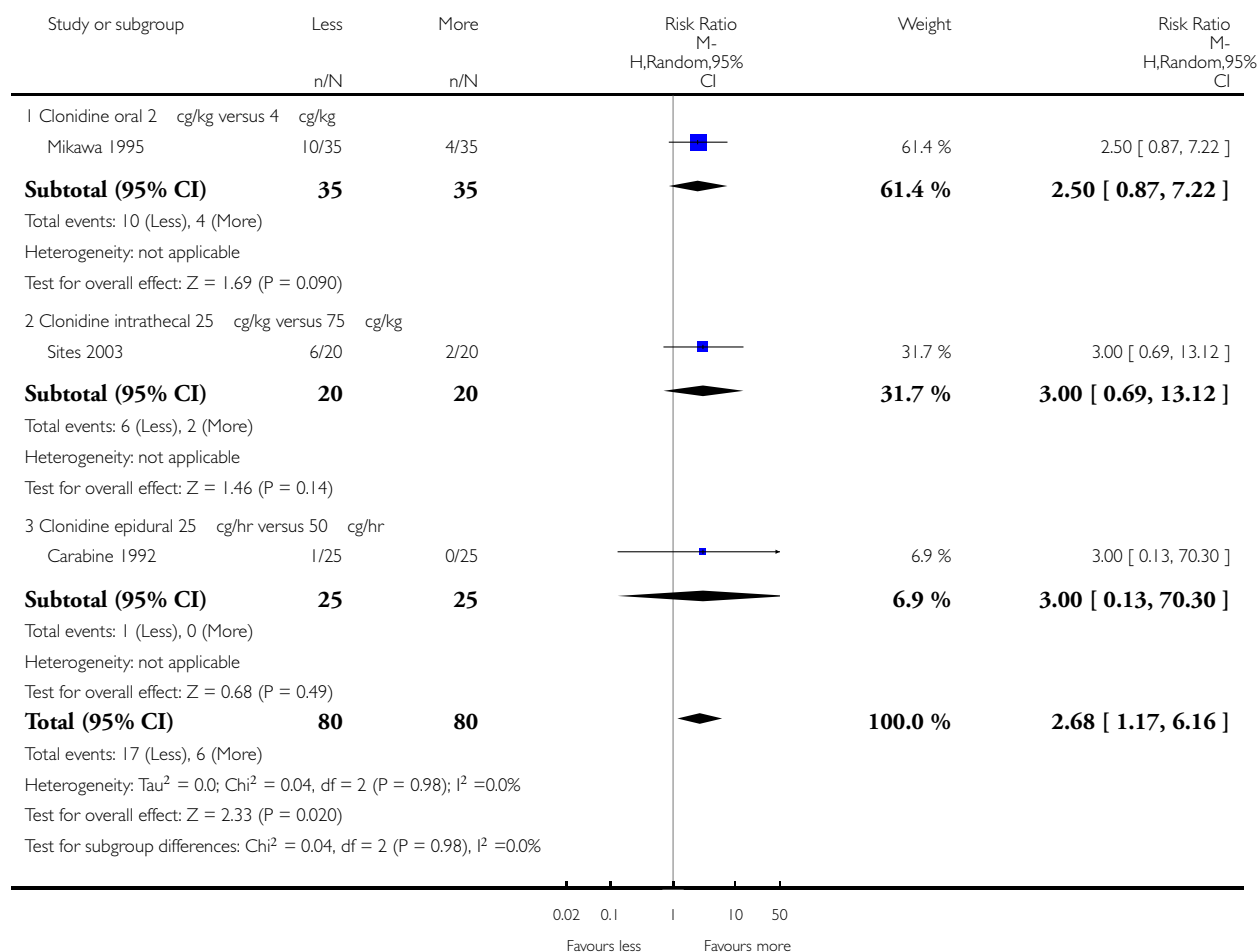


## Analysis 12.14. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 14 Vomiting clonidine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 14 Vomiting clonidine



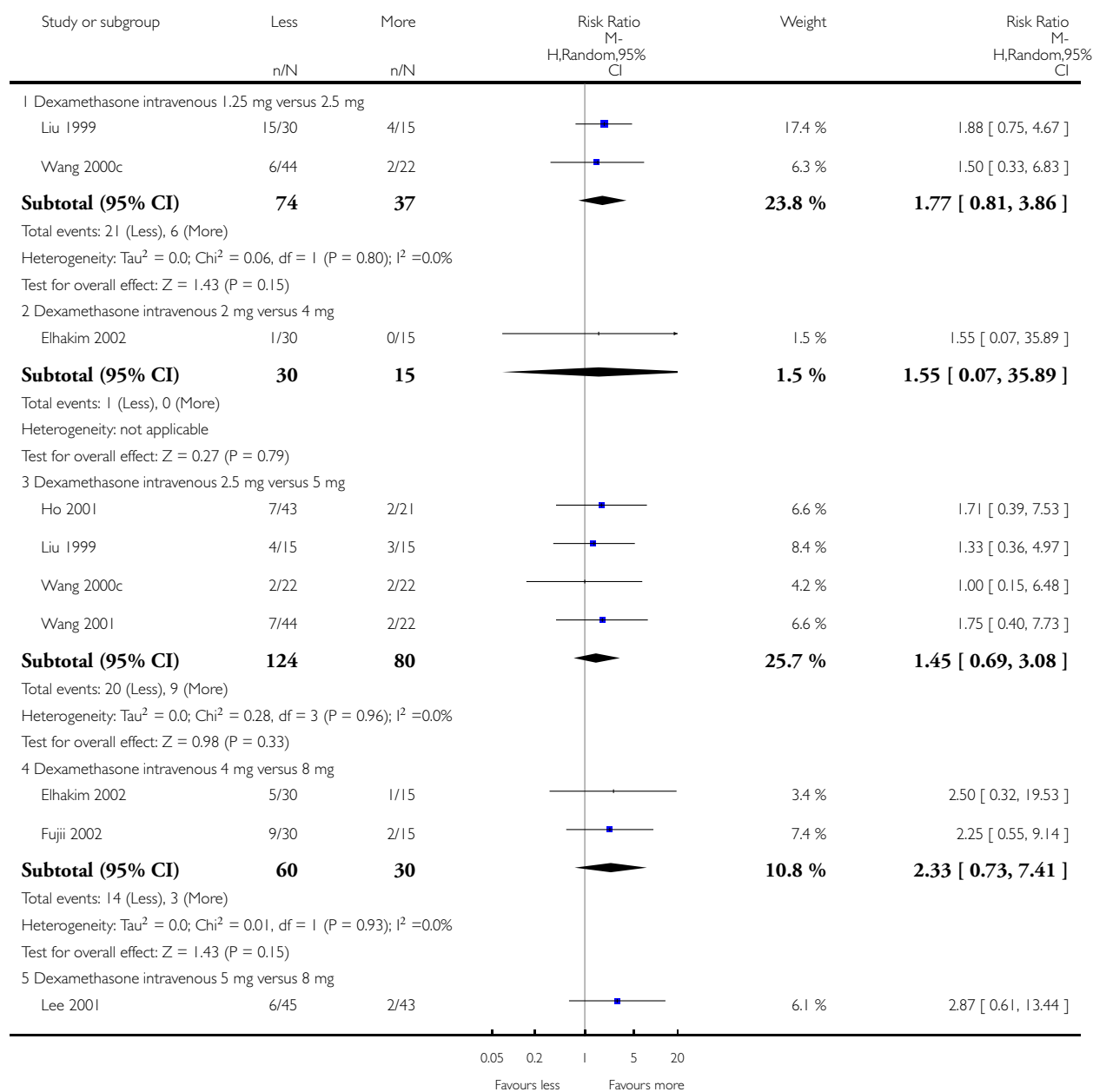


# **Analysis 12.15. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 15 Vomiting dexamethasone.**

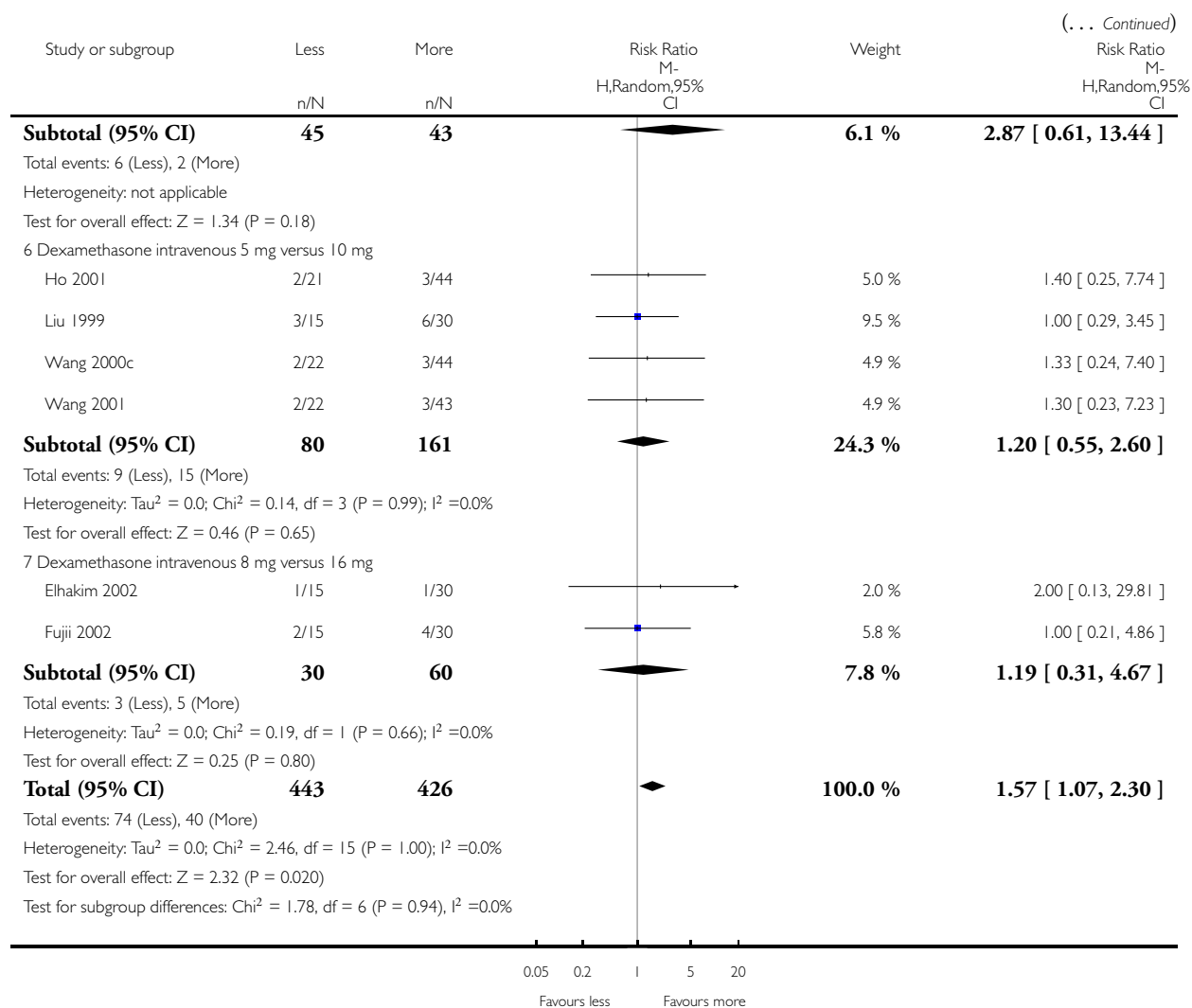
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 15 Vomiting dexamethasone



(Continued ...)

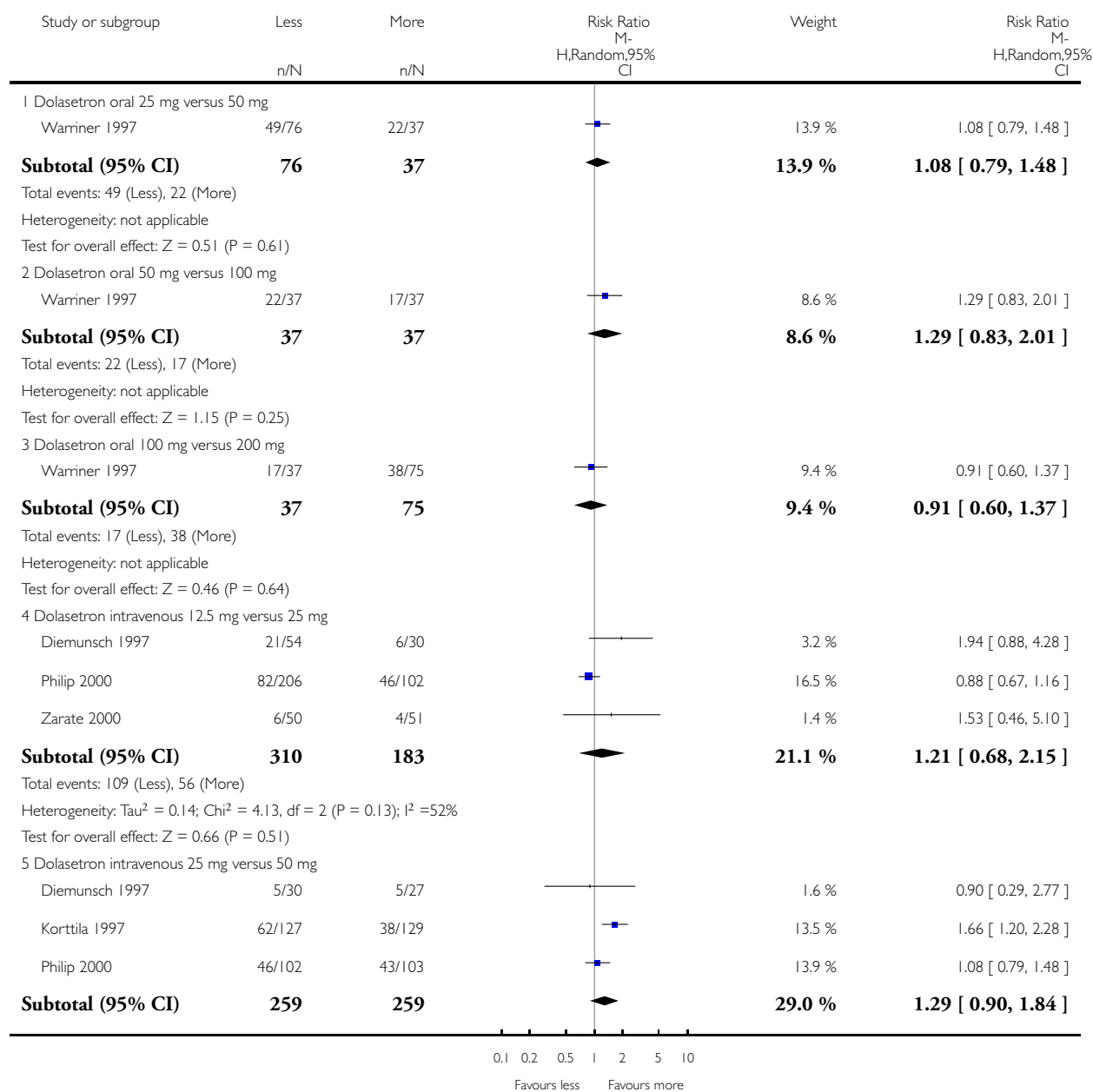


## Analysis 12.16. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 16 Vomiting dolasetron.

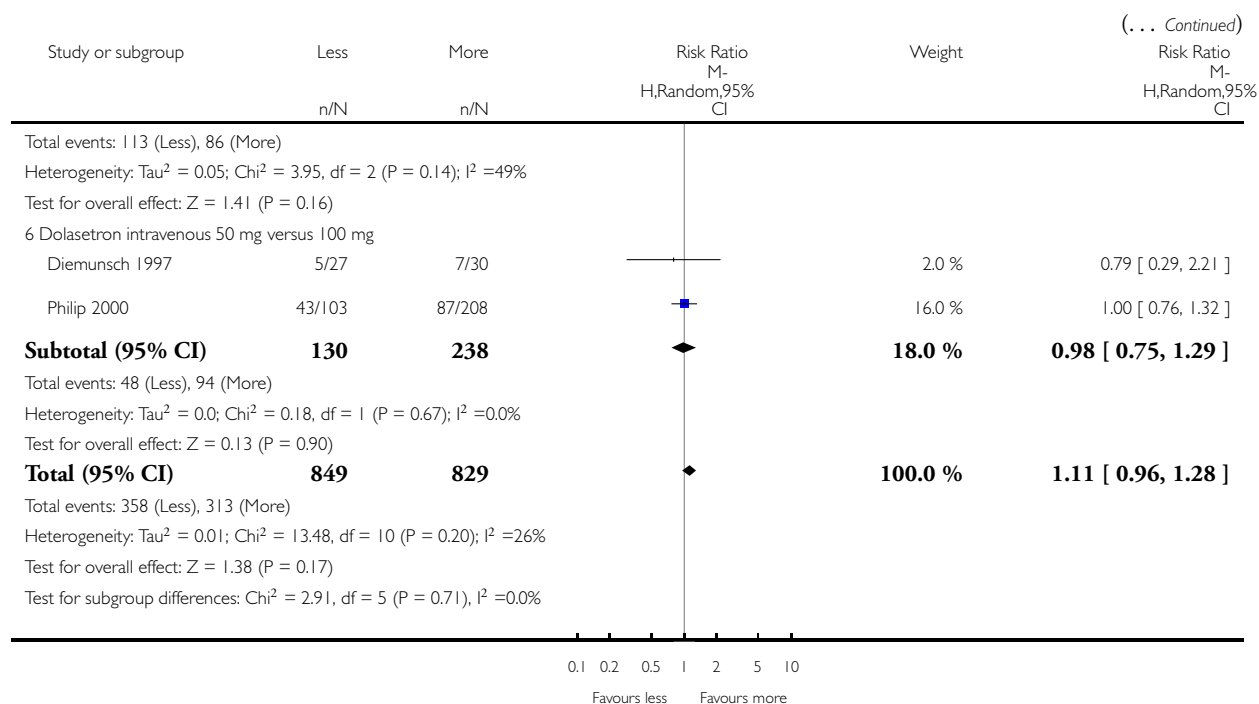
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 16 Vomiting dolasetron



(Continued ...)

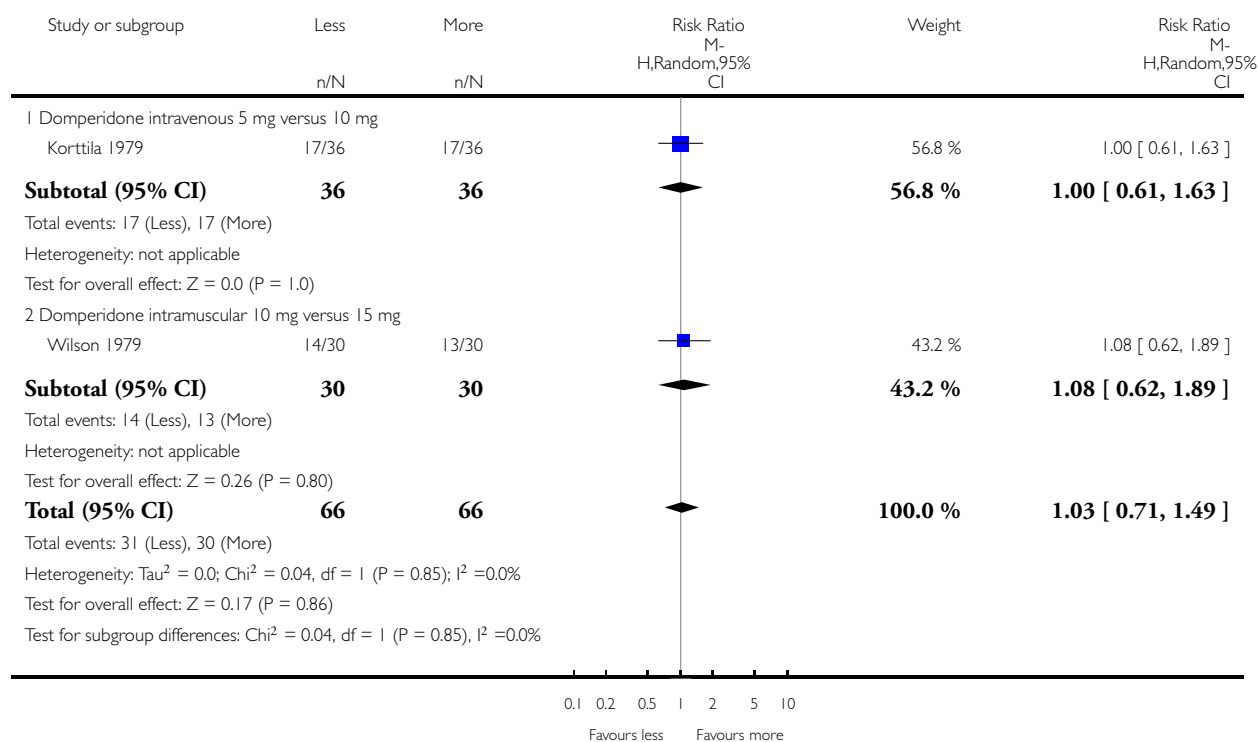


## Analysis 12.17. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 17 Vomiting domperidone.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 17 Vomiting domperidone

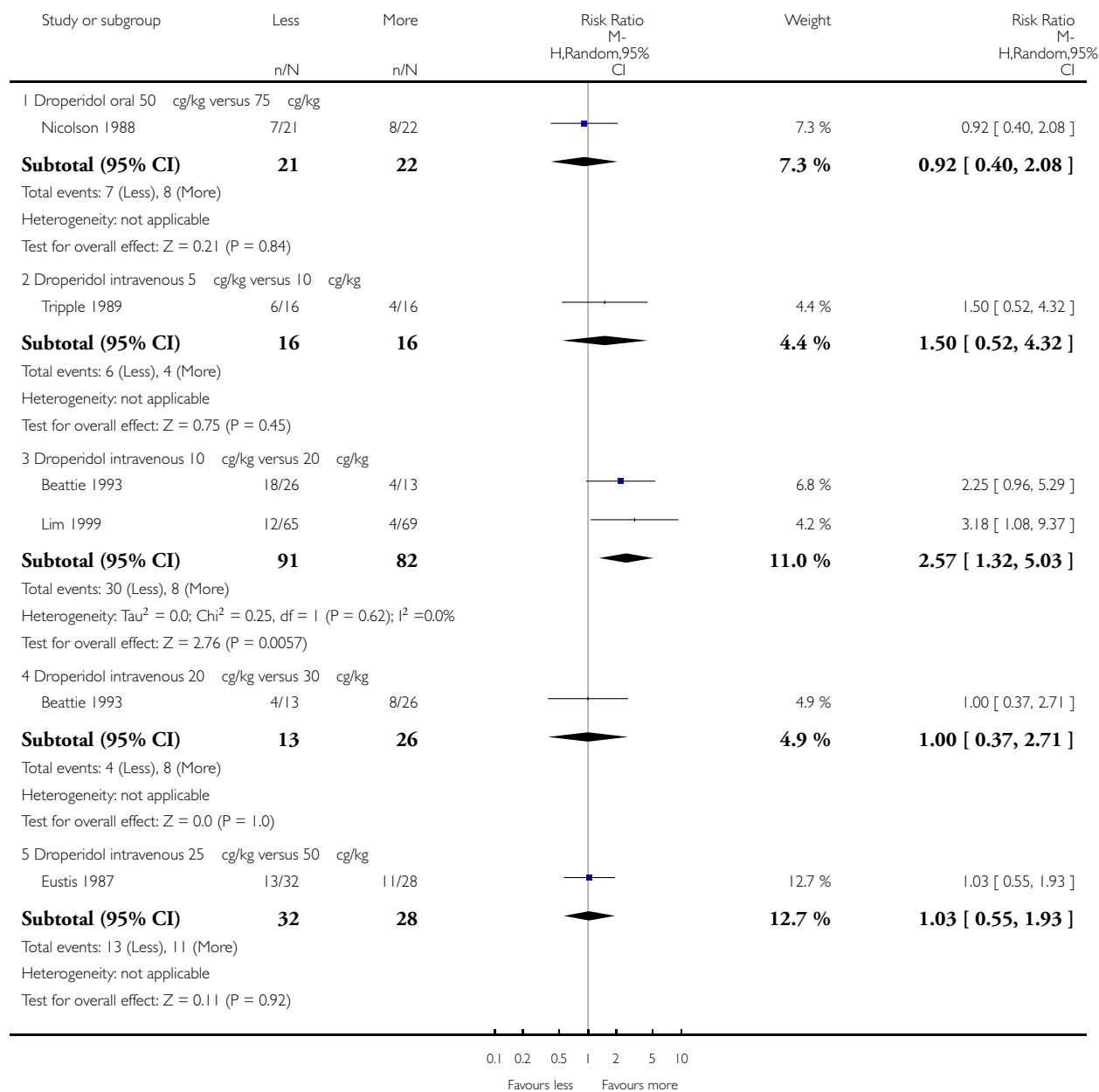


## Analysis 12.18. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 18 Vomiting droperidol.

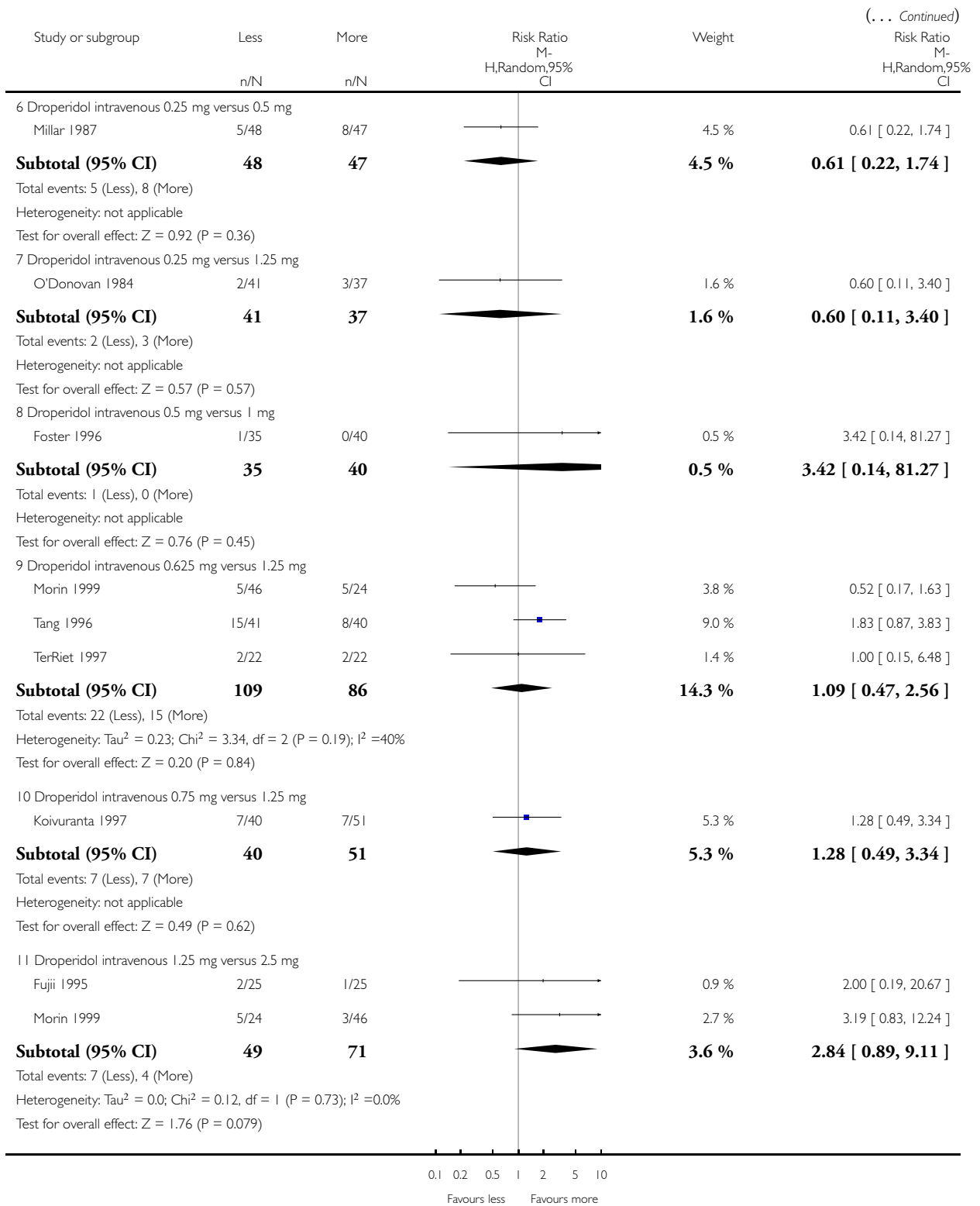
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

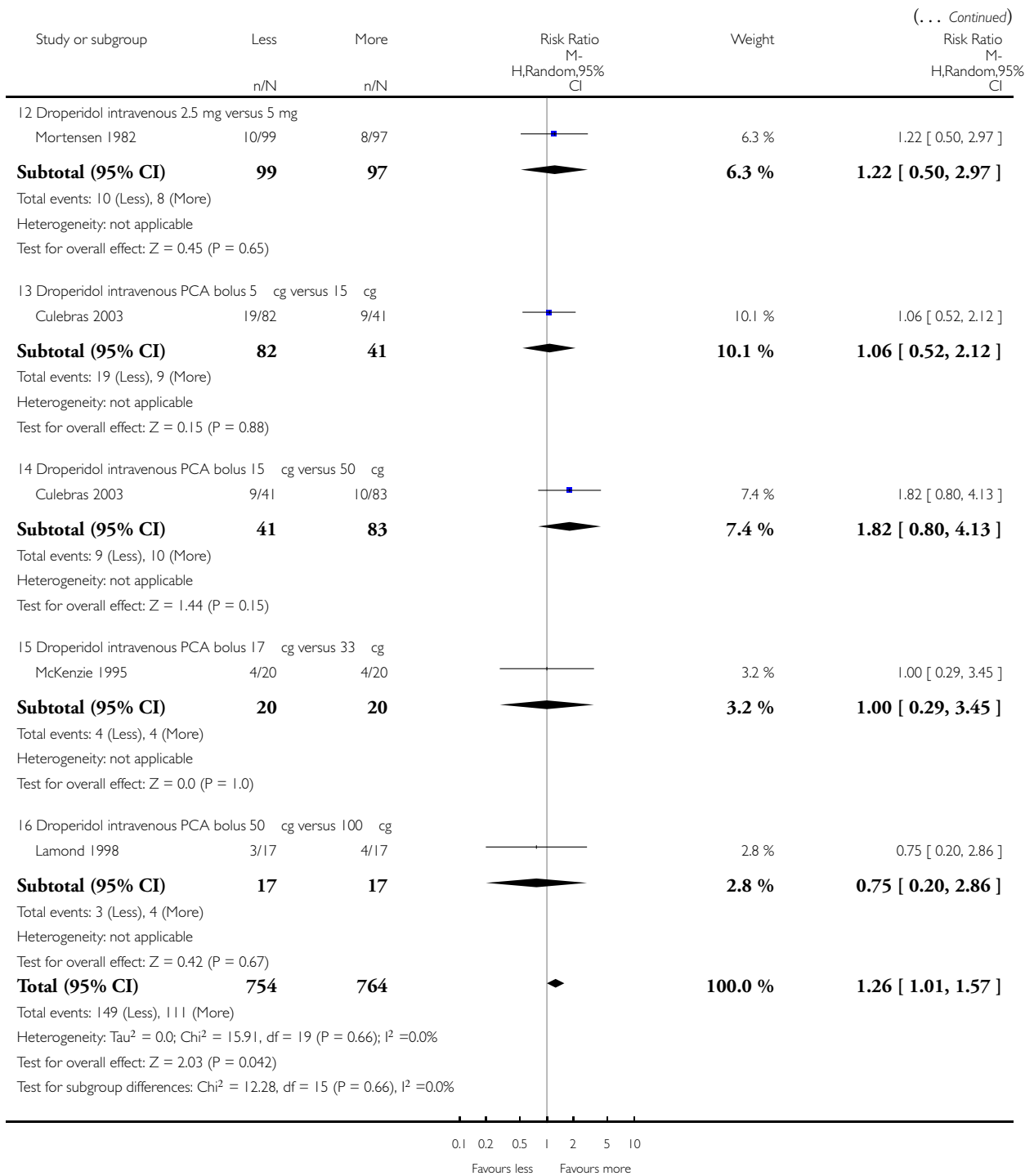
Outcome: 18 Vomiting droperidol



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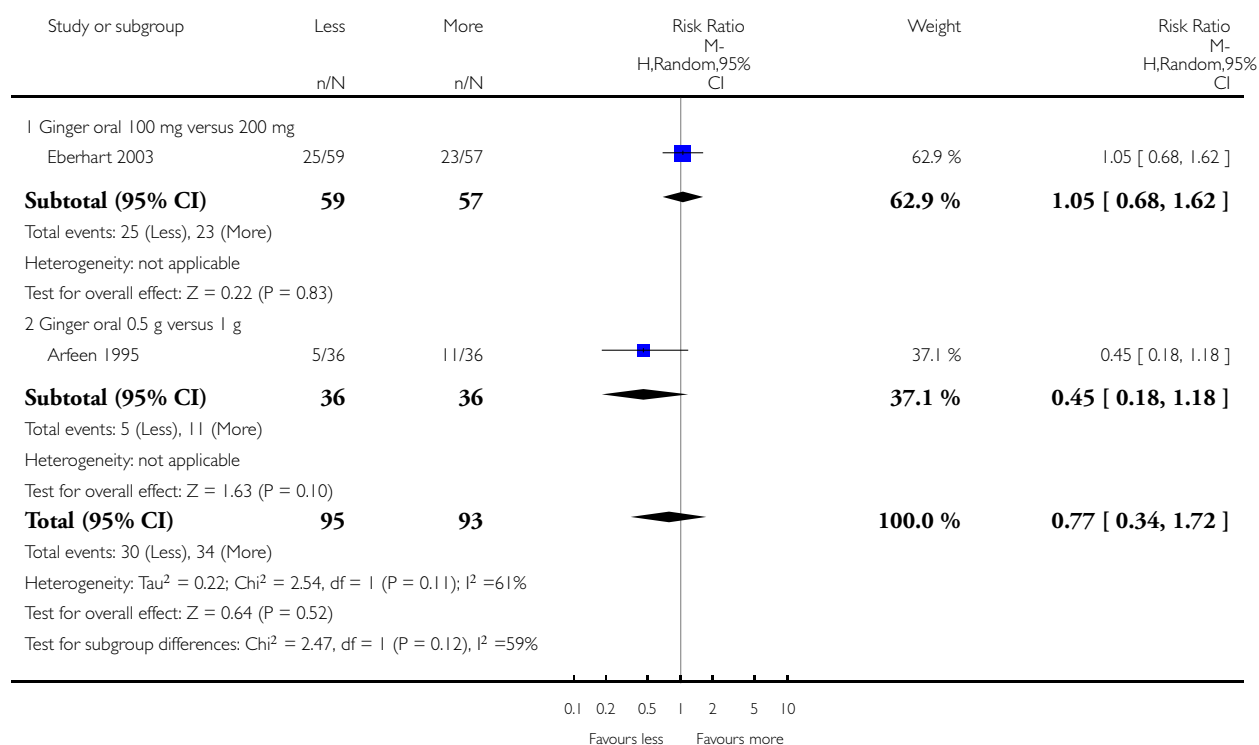


## Analysis 12.19. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 19 Vomiting ginger.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 19 Vomiting ginger

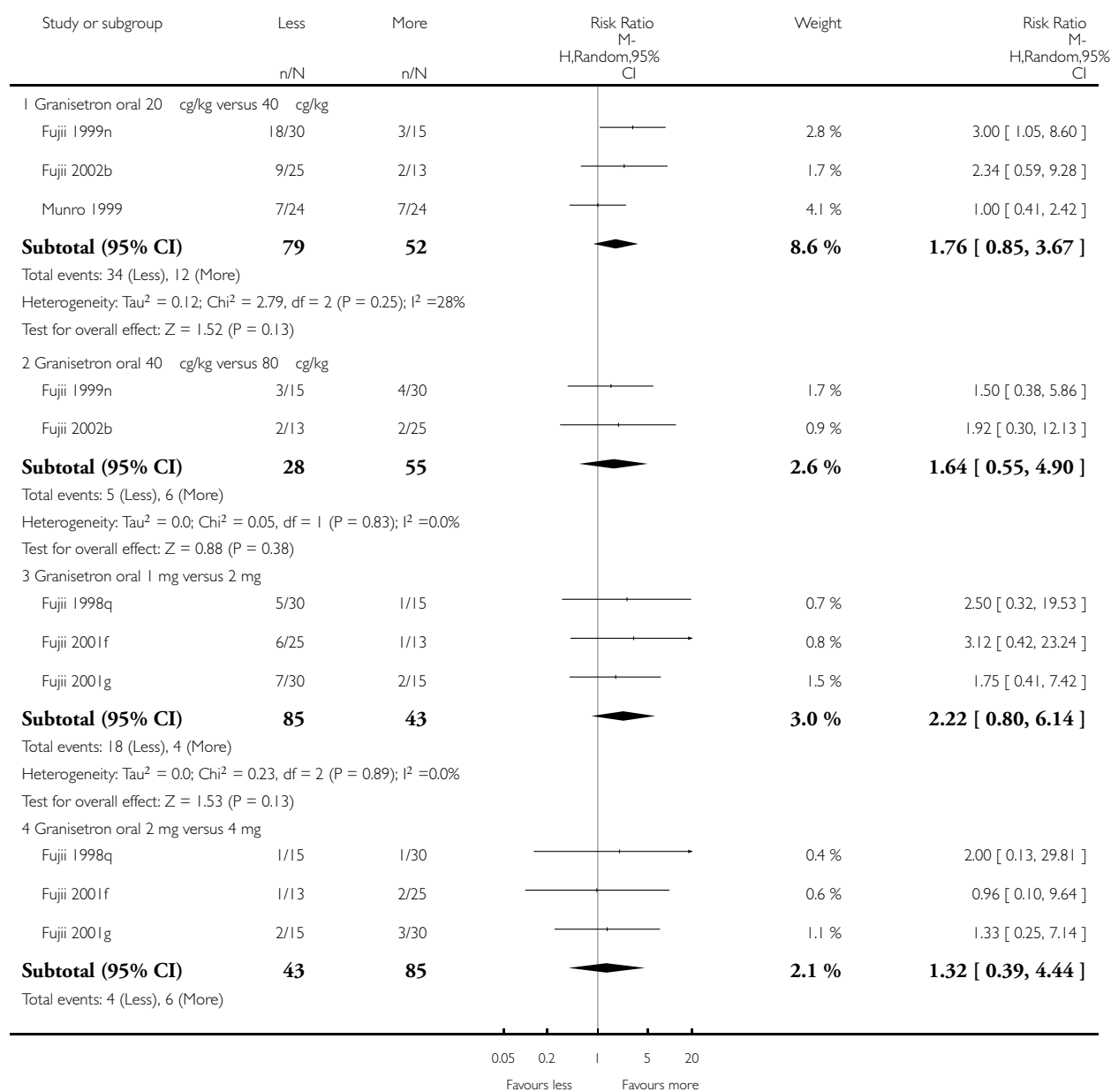


## Analysis 12.20. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 20 Vomiting granisetron.

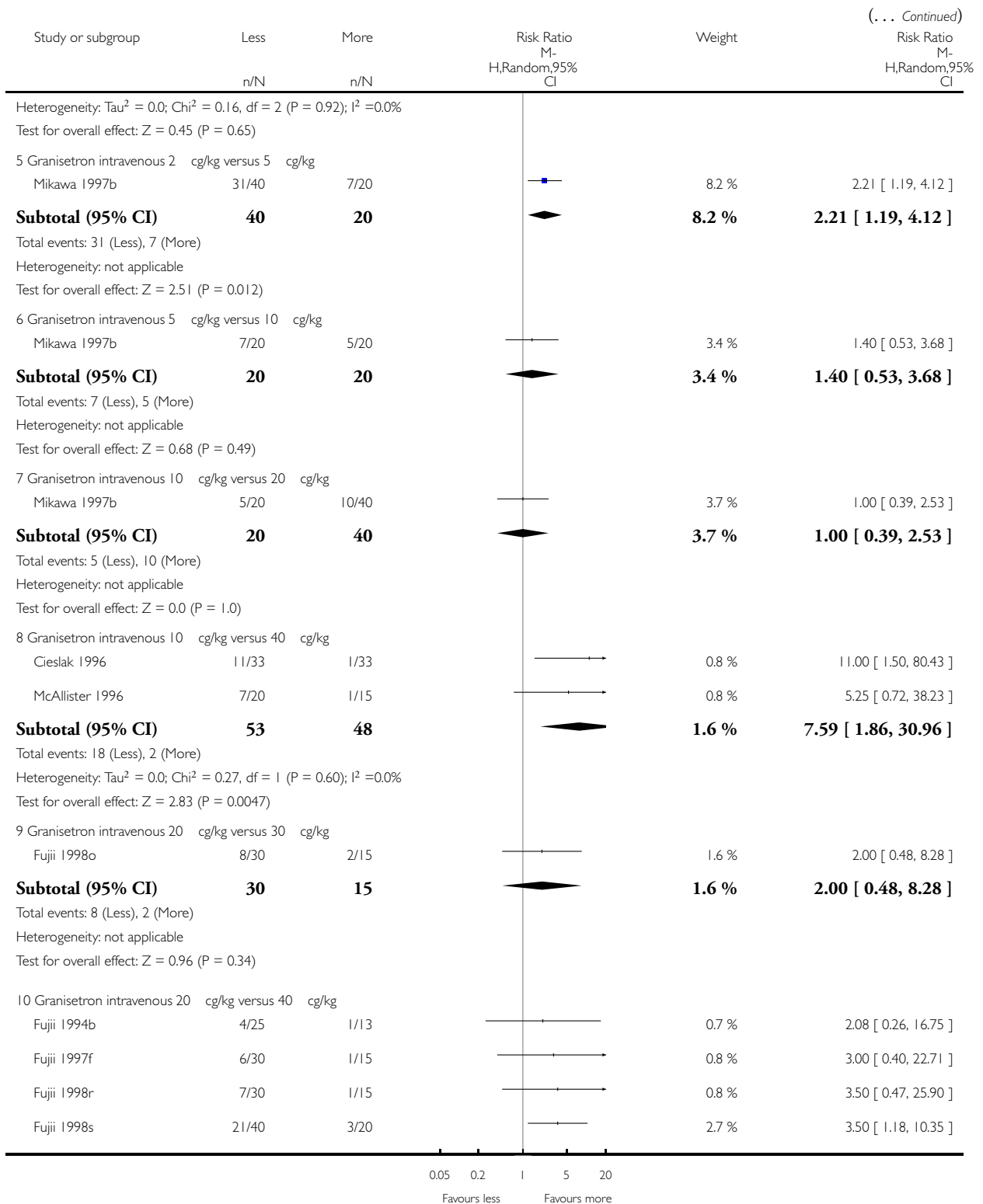
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

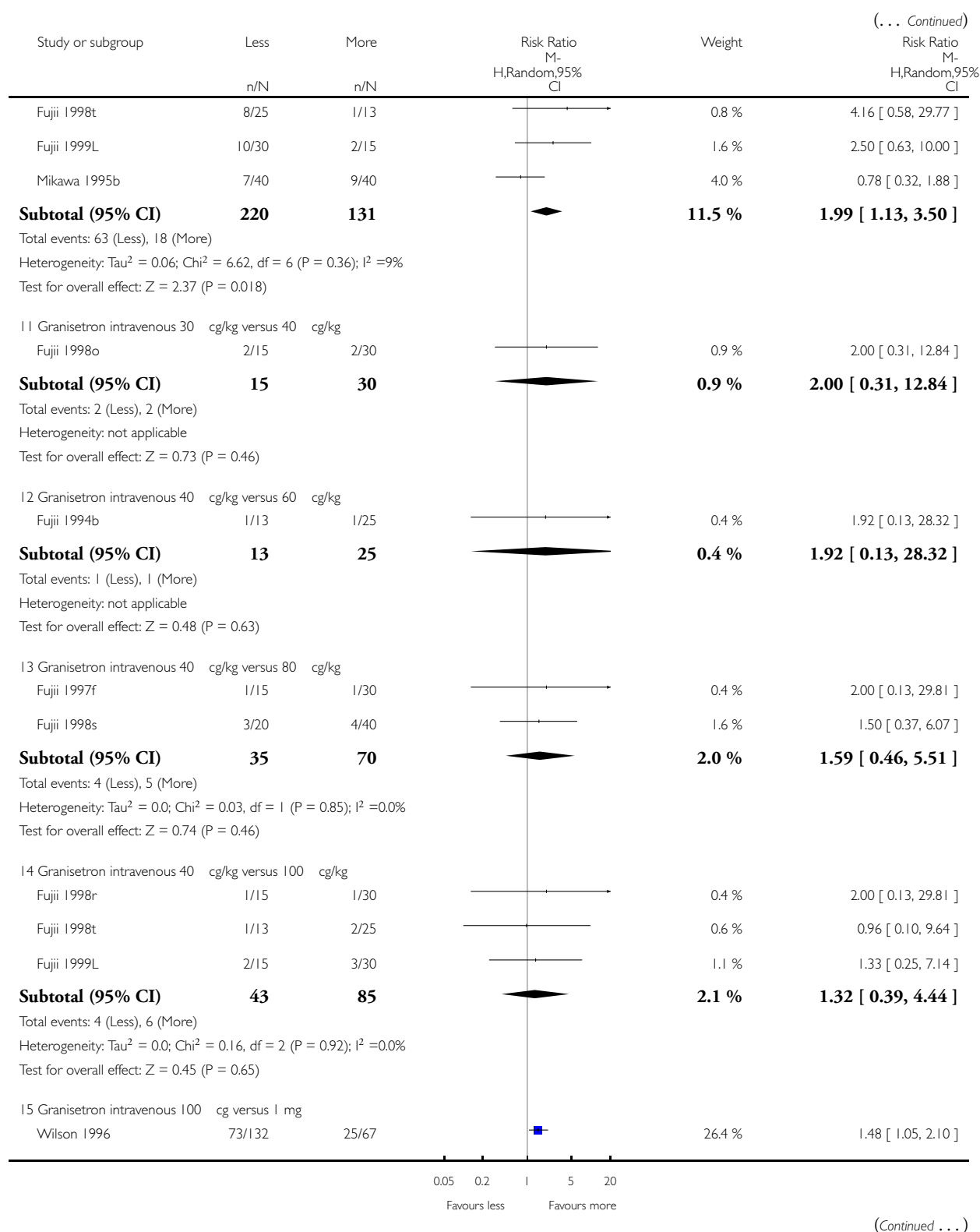
Outcome: 20 Vomiting granisetron

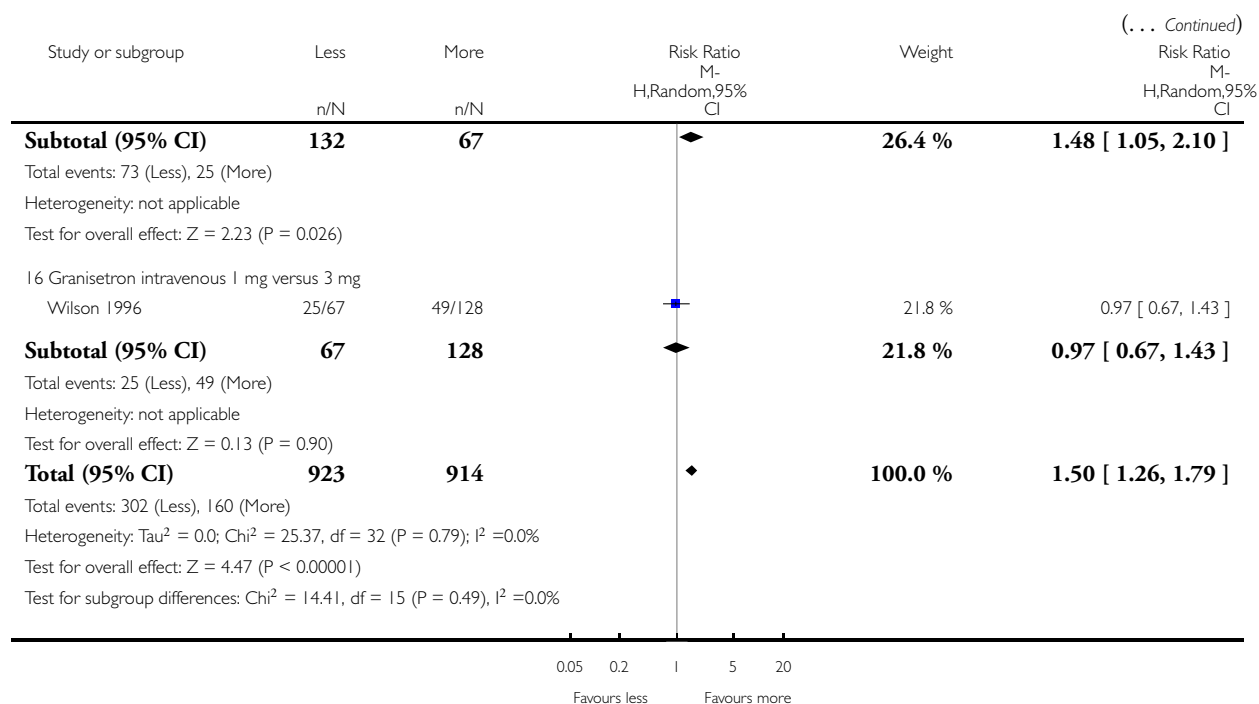


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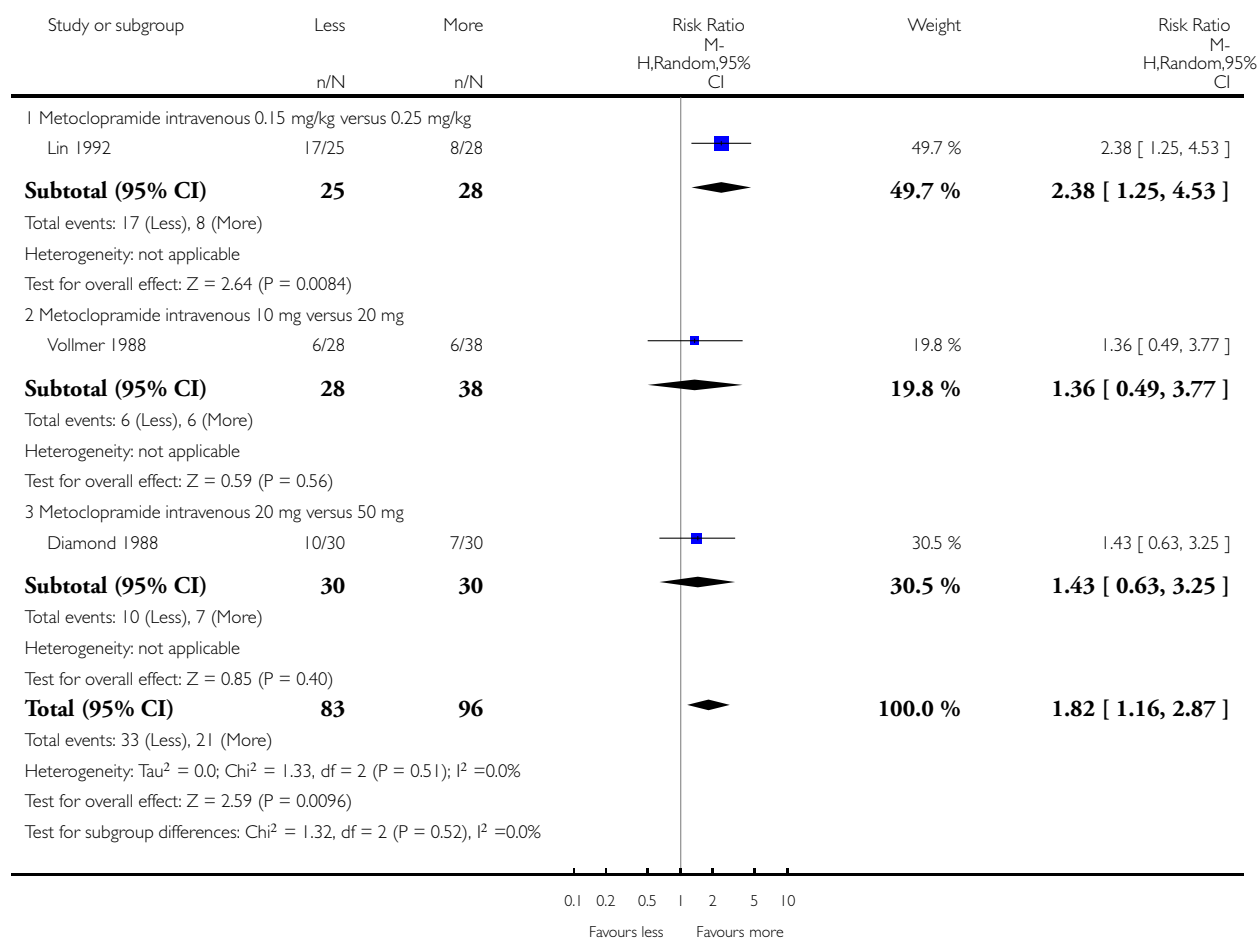


## Analysis 12.21. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 21 Vomiting metoclopramide.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 21 Vomiting metoclopramide

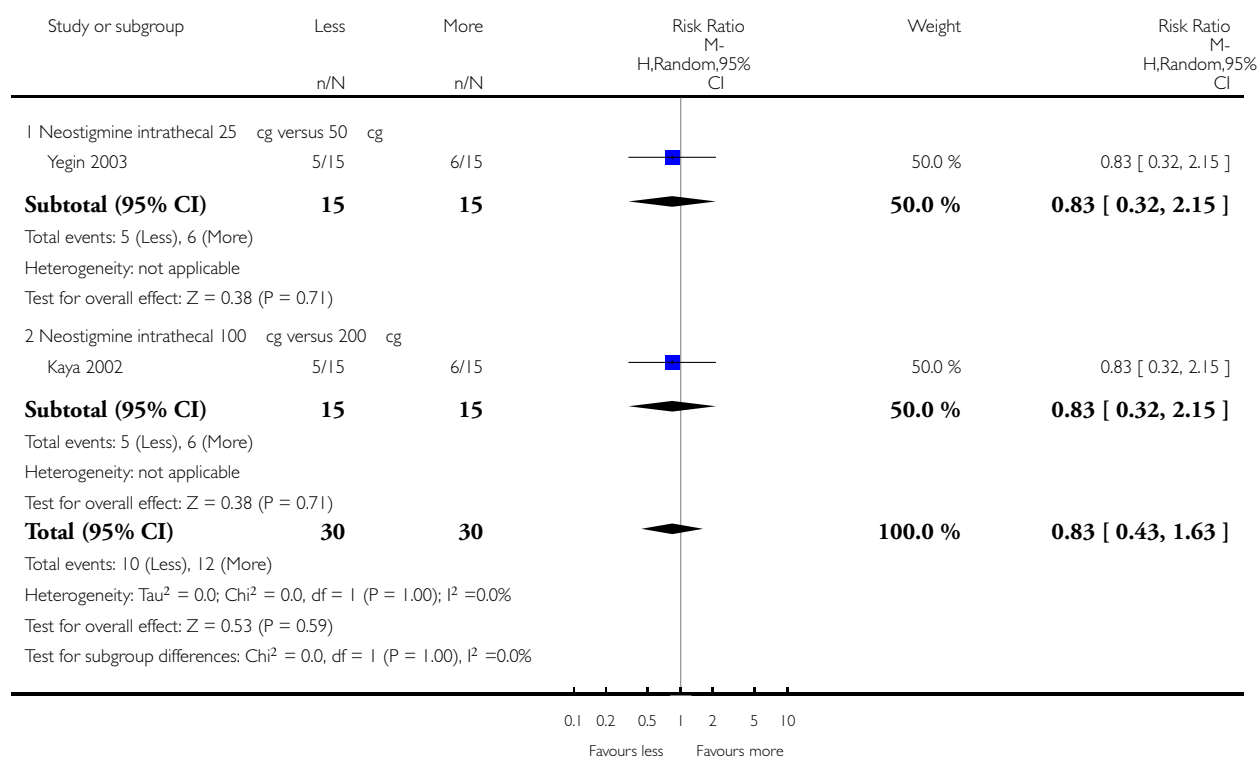


## Analysis 12.22. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 22 Vomiting neostigmine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 22 Vomiting neostigmine

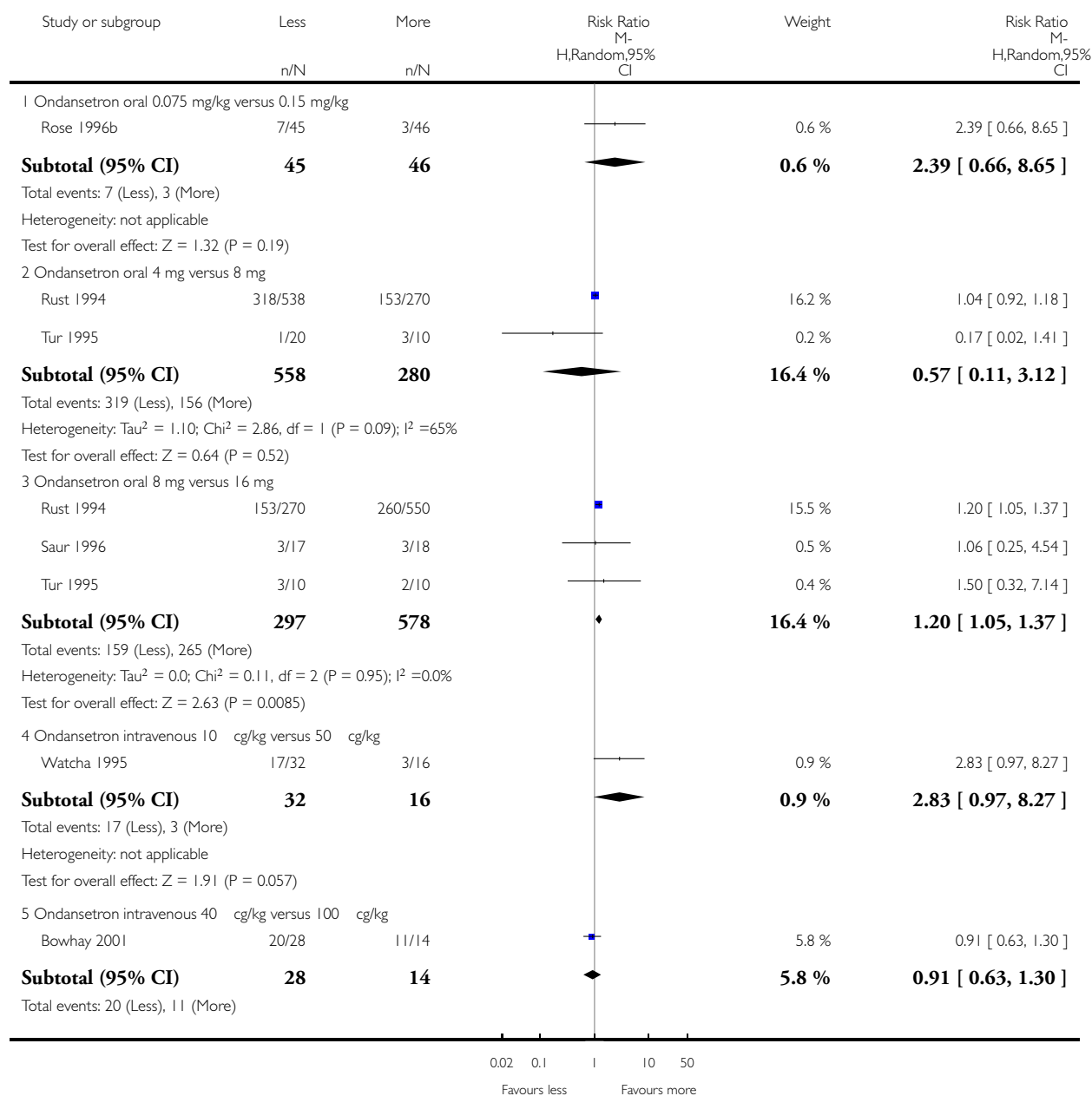


## Analysis 12.23. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 23 Vomiting ondansetron.

Review: Drugs for preventing postoperative nausea and vomiting

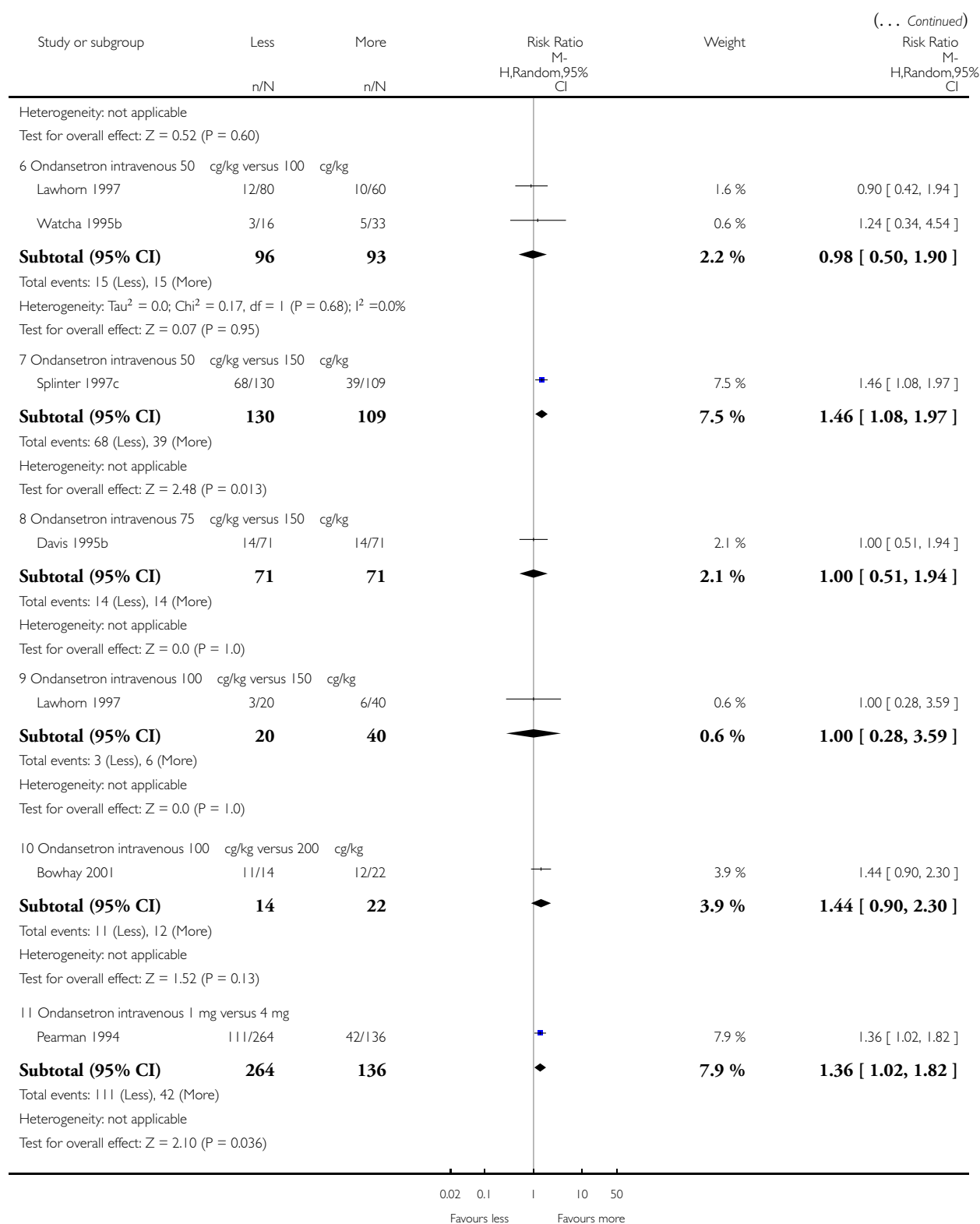
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

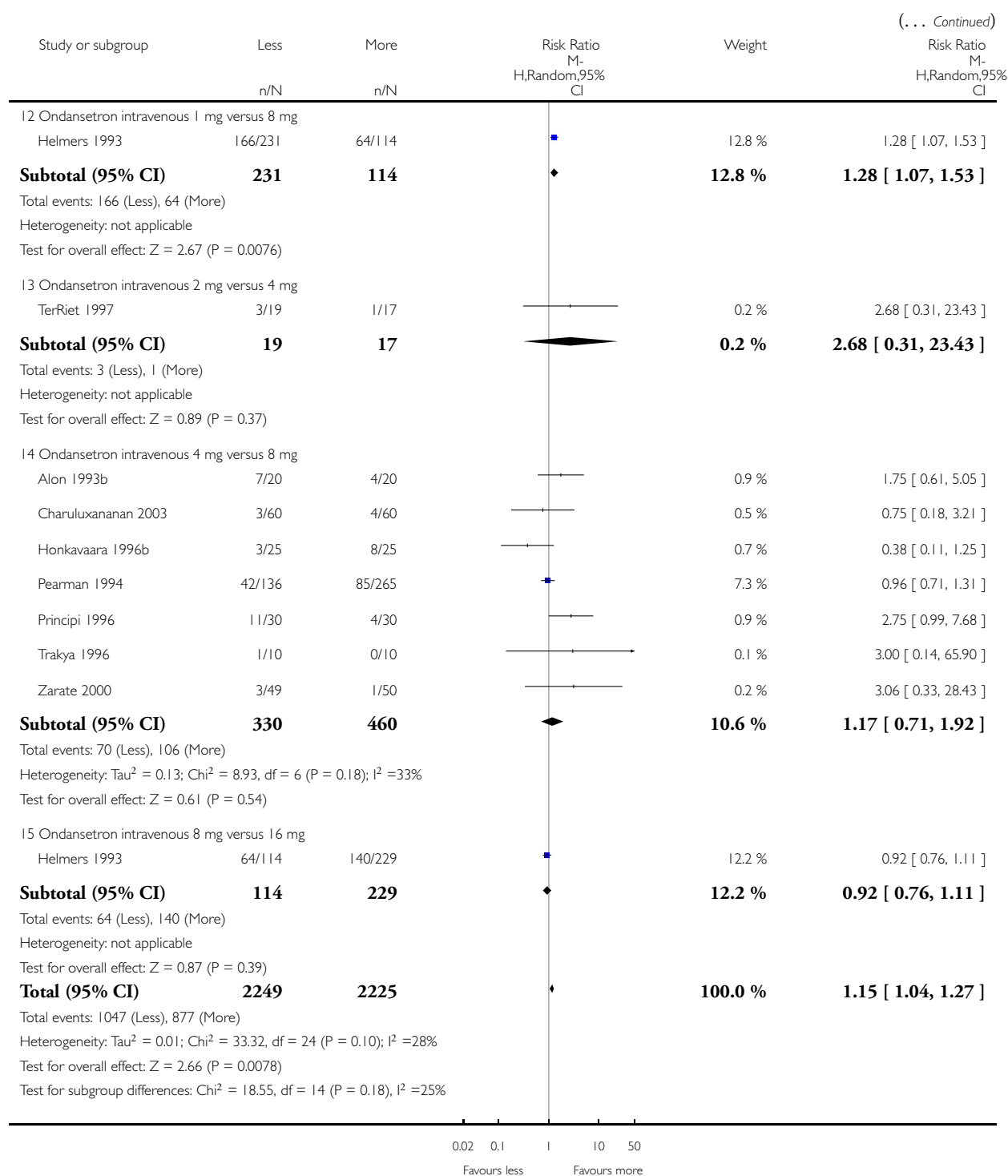
Outcome: 23 Vomiting ondansetron



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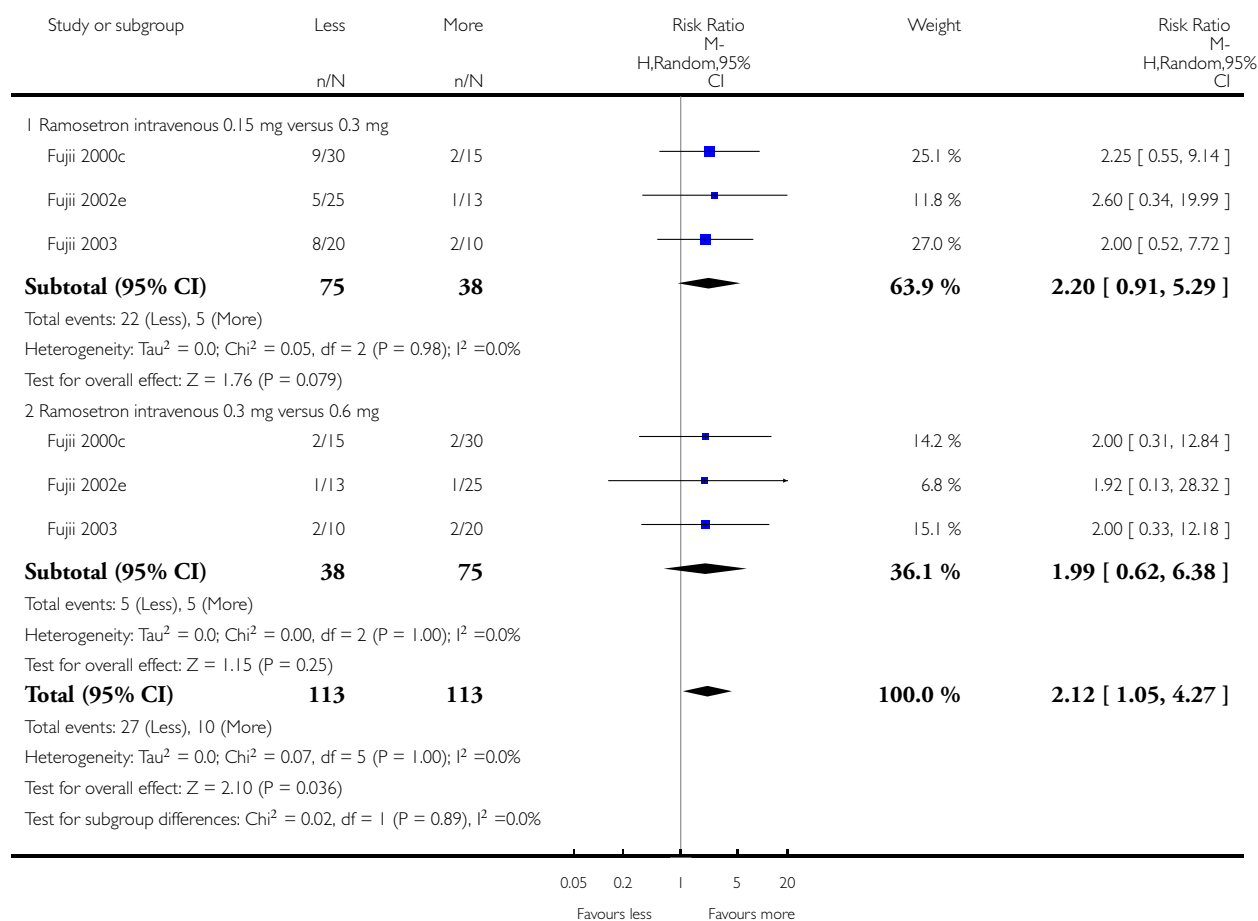


## Analysis 12.24. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 24 Vomiting ramosetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 24 Vomiting ramosetron

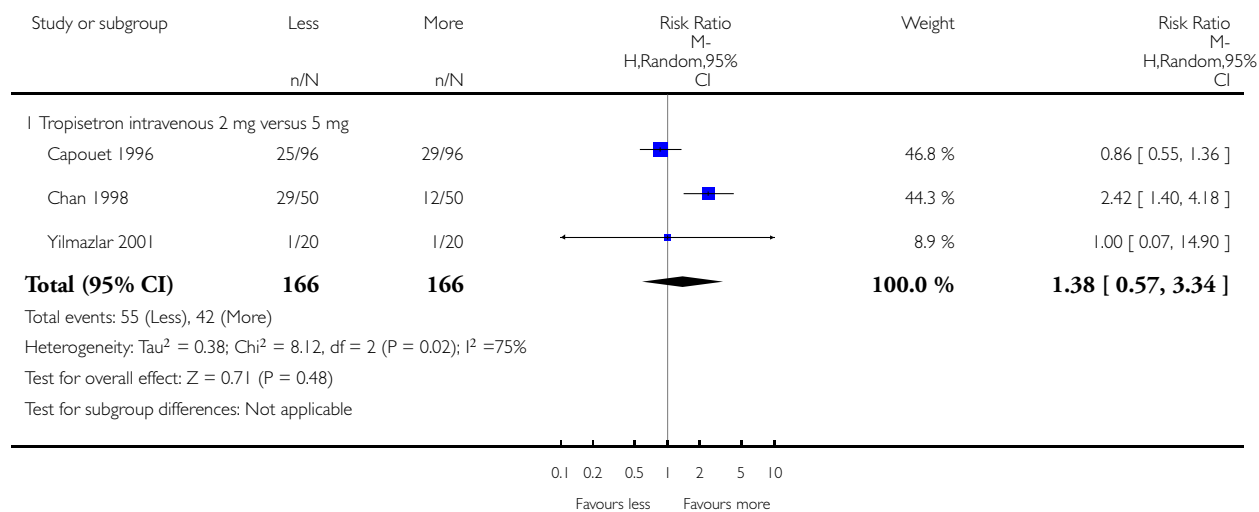


## Analysis 12.25. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 25 Vomiting tropisetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 25 Vomiting tropisetron

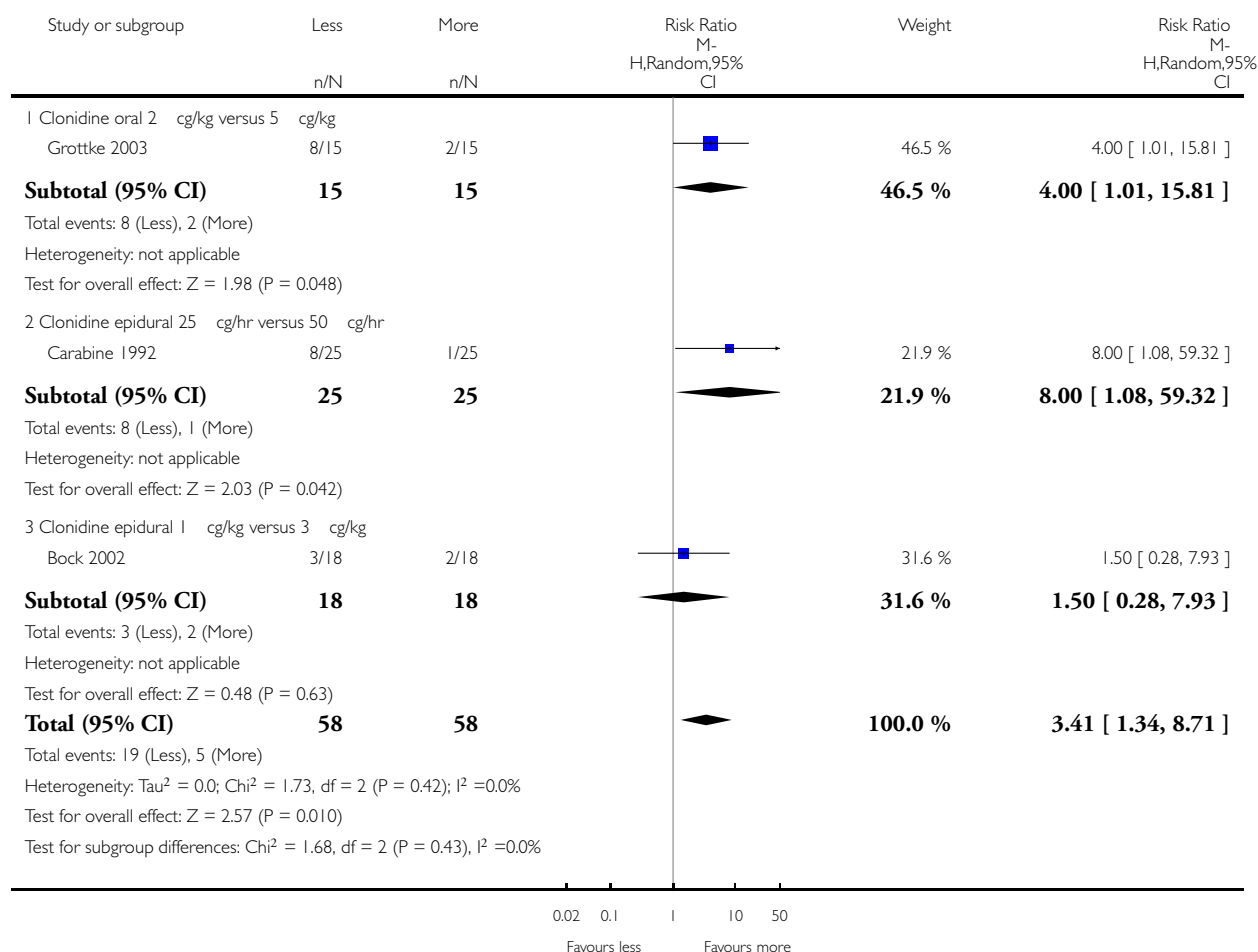


## Analysis 12.26. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 26 Nausea or Vomiting clonidine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 26 Nausea or Vomiting clonidine

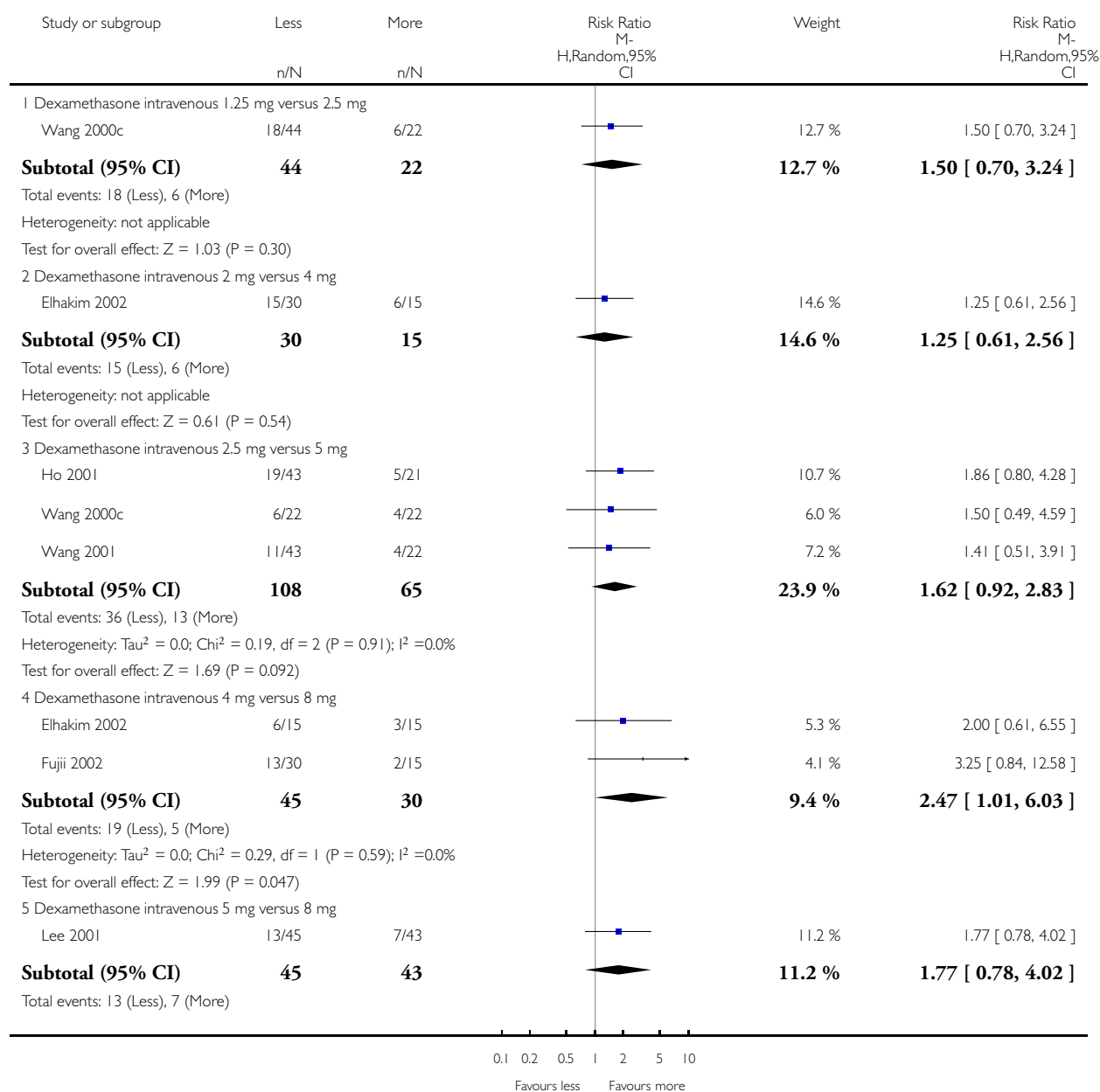


## Analysis 12.27. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 27 Nausea or Vomiting dexamethasone.

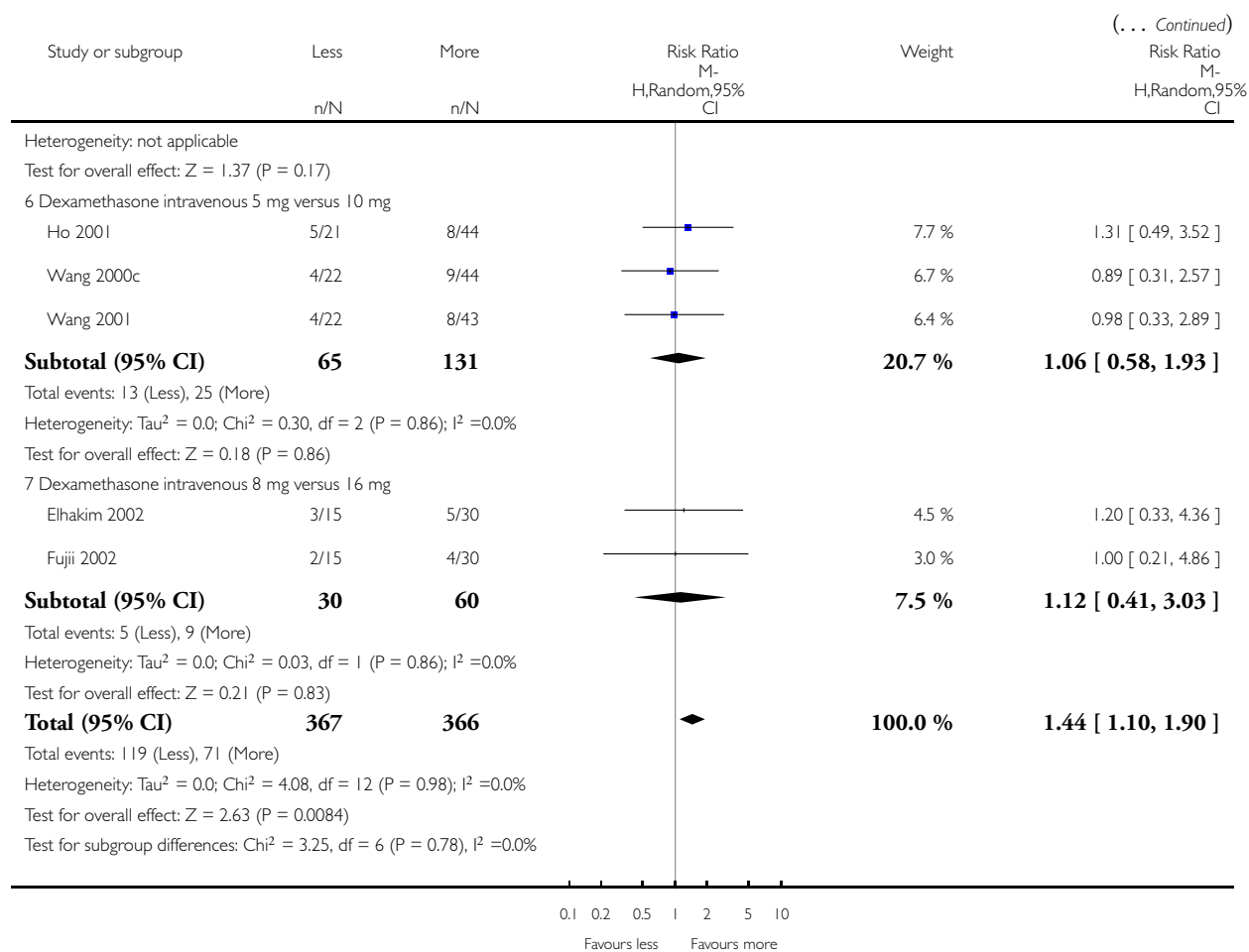
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 27 Nausea or Vomiting dexamethasone



(Continued ...)

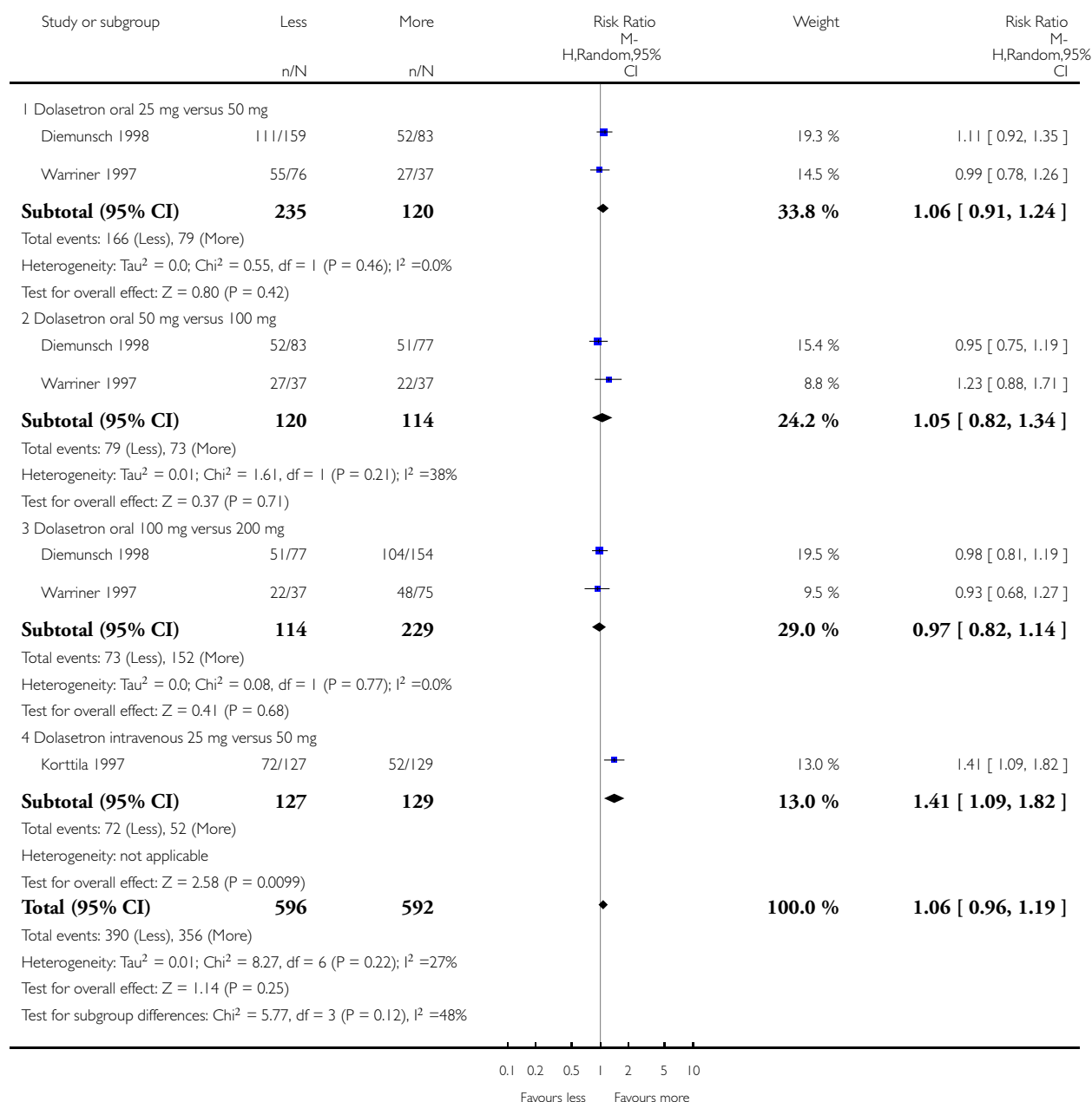


## Analysis 12.28. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 28 Nausea or Vomiting dolasetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 28 Nausea or Vomiting dolasetron



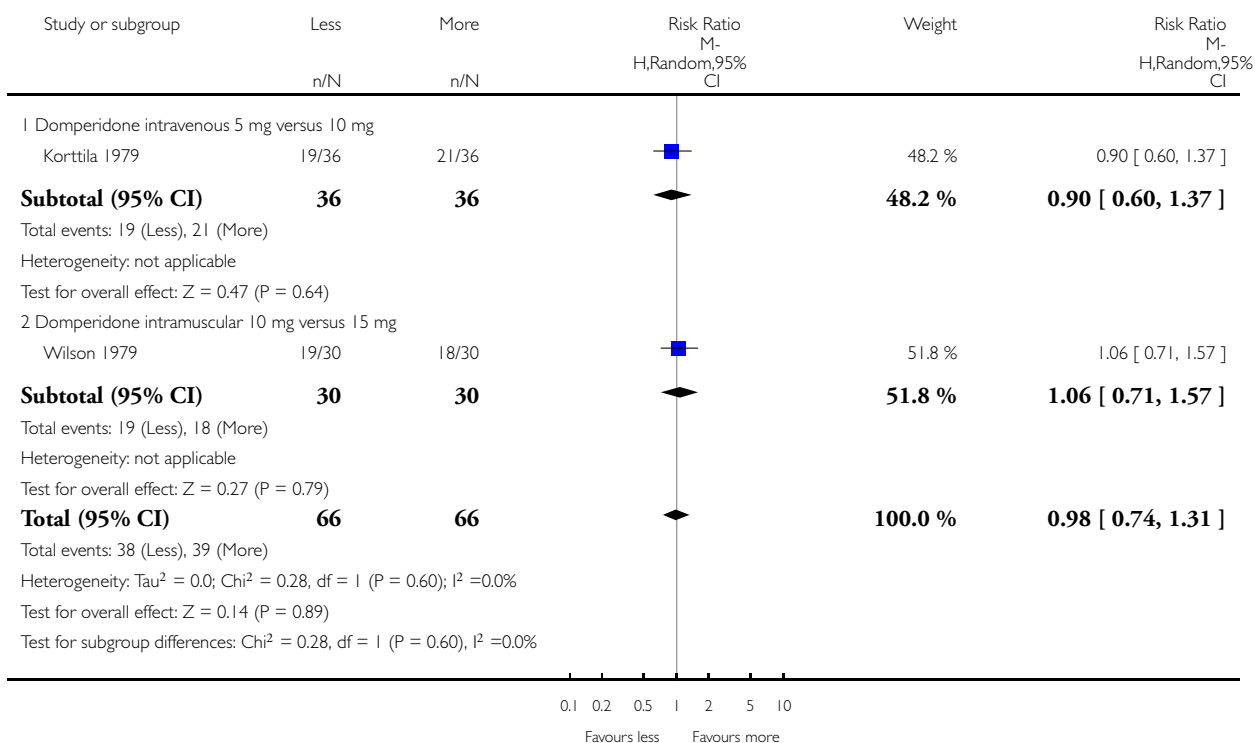


## Analysis 12.29. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 29 Nausea or Vomiting domperidone.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 29 Nausea or Vomiting domperidone

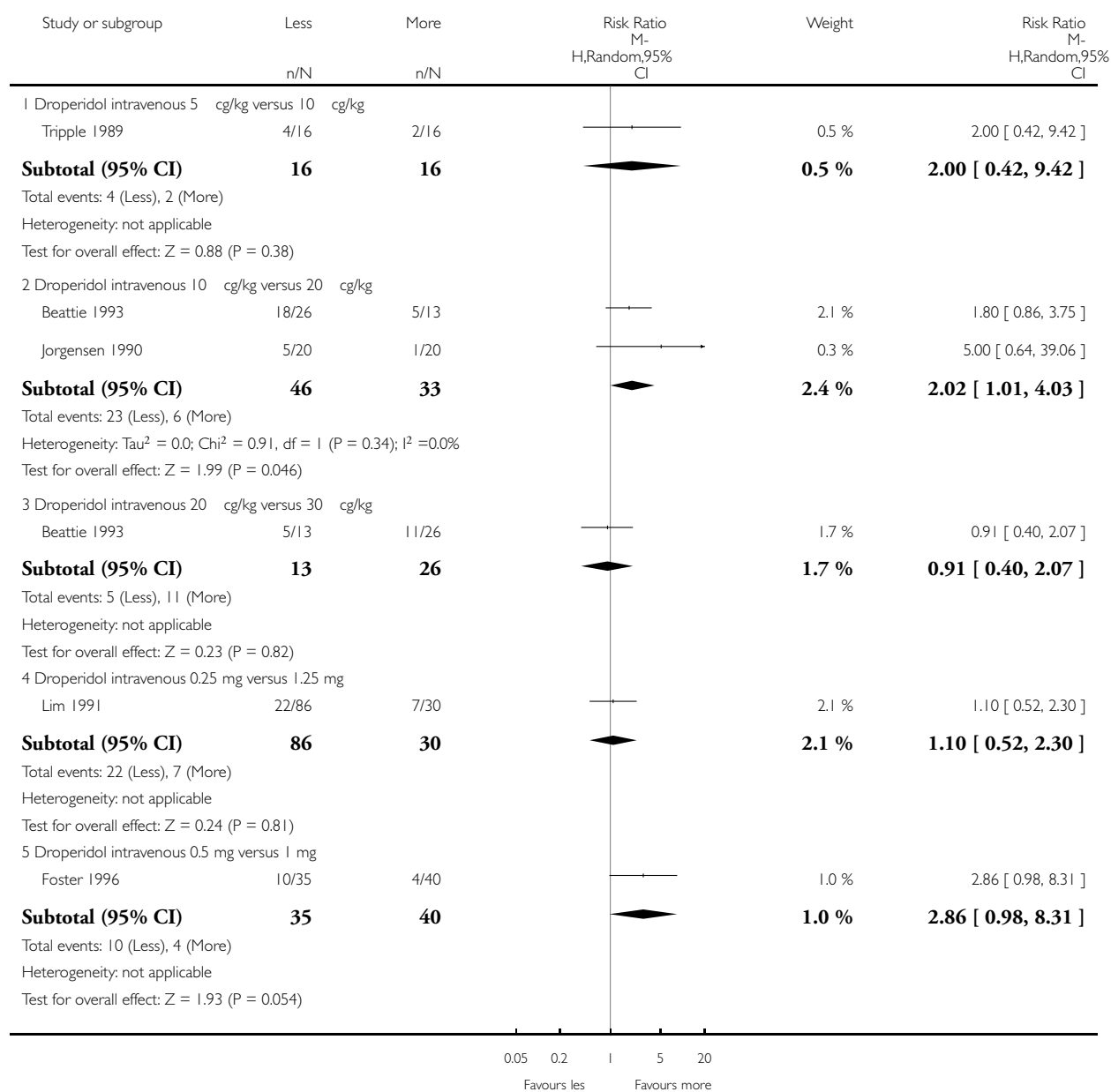


### Analysis 12.30. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 30 Nausea or Vomiting droperidol.

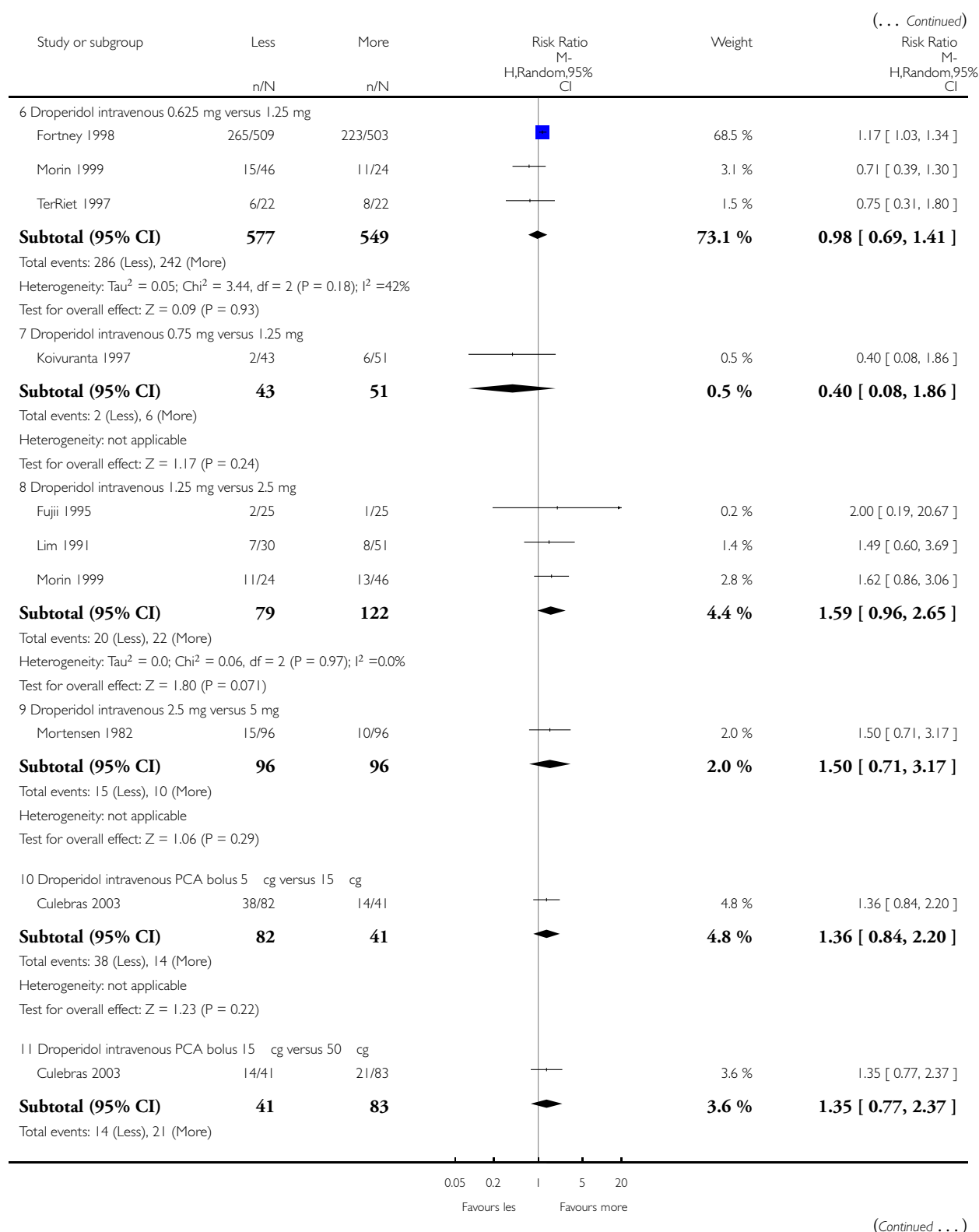
Review: Drugs for preventing postoperative nausea and vomiting

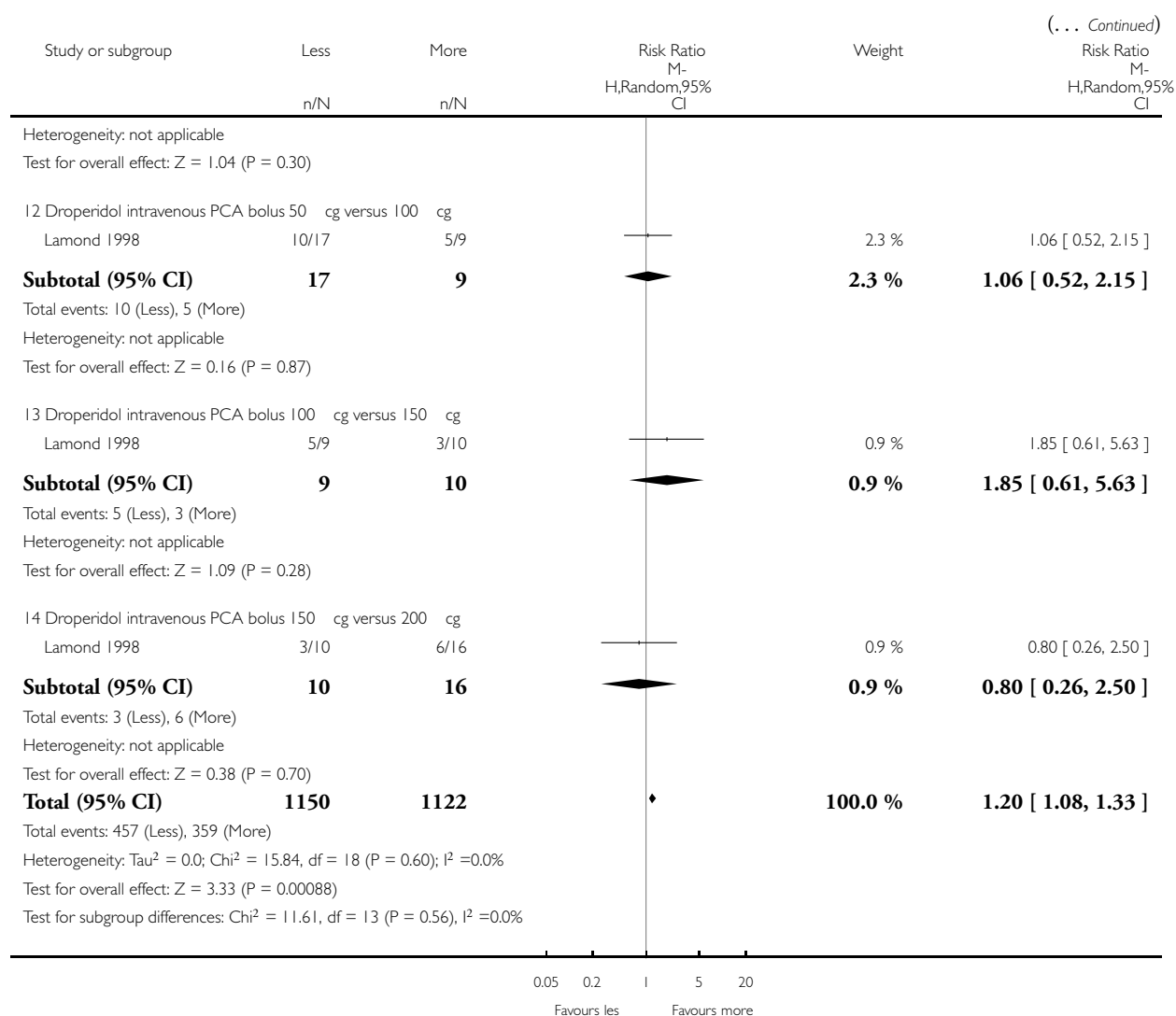
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 30 Nausea or Vomiting droperidol



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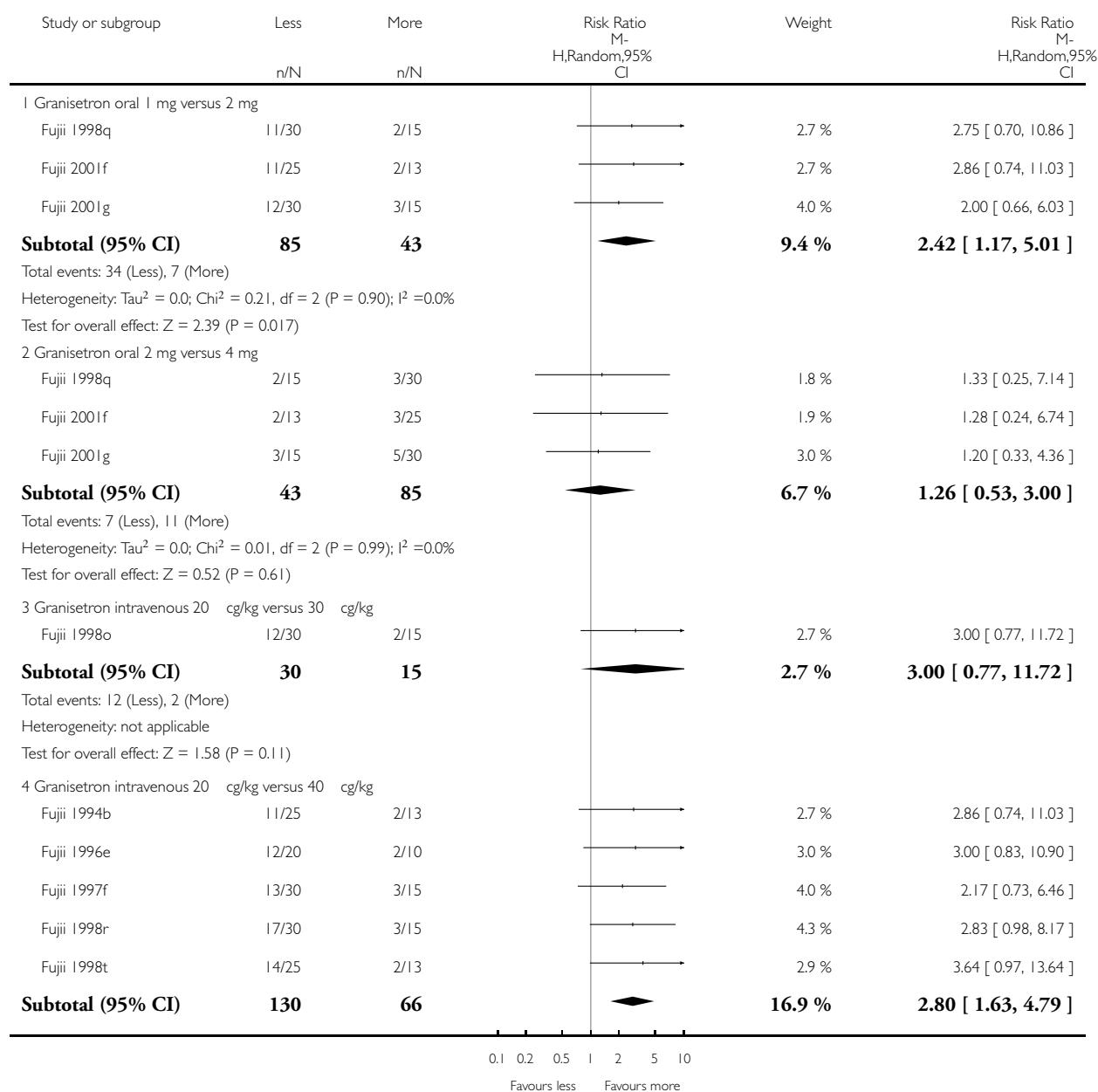


### Analysis 12.31. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 31 Nausea or Vomiting granisetron.

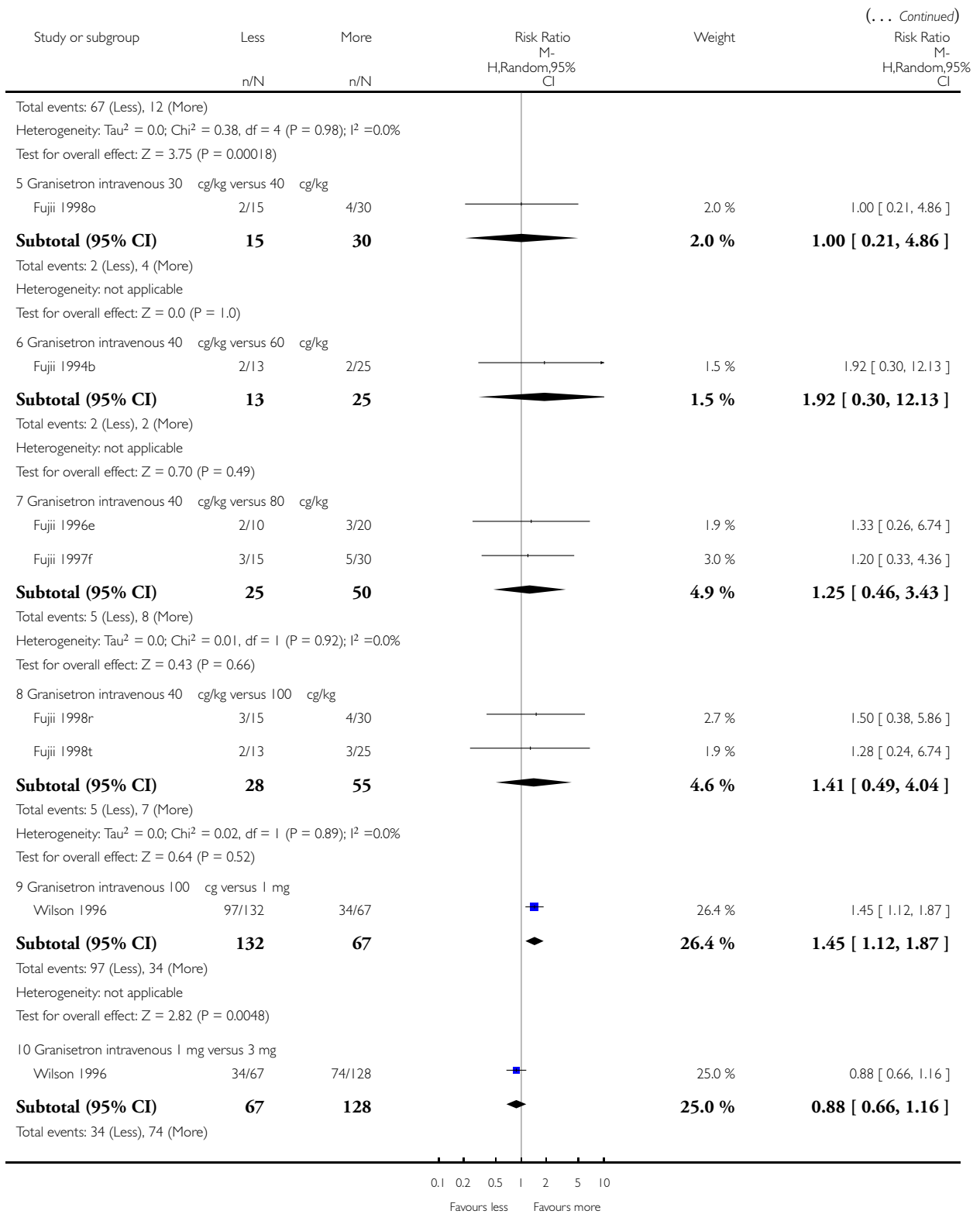
Review: Drugs for preventing postoperative nausea and vomiting

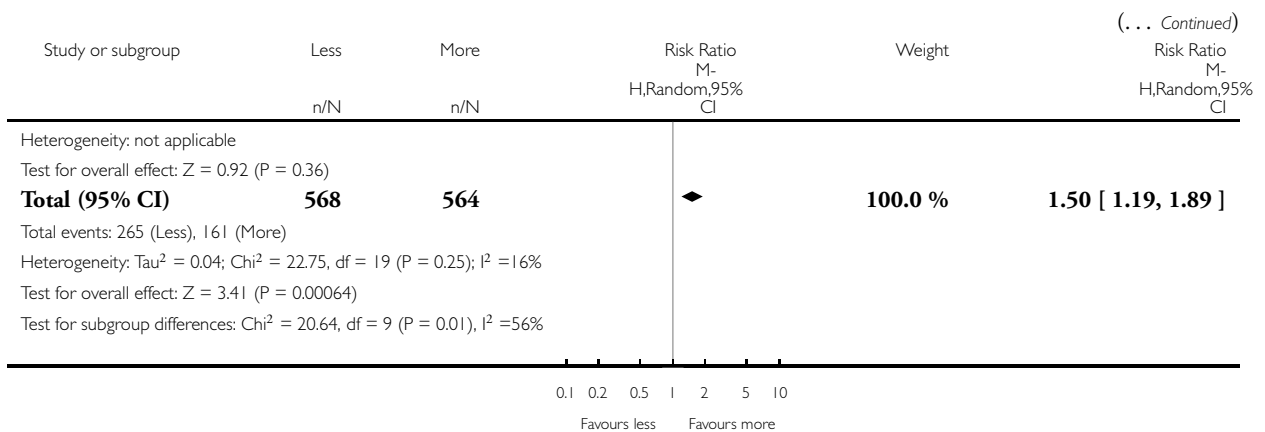
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 31 Nausea or Vomiting granisetron



(Continued ...)



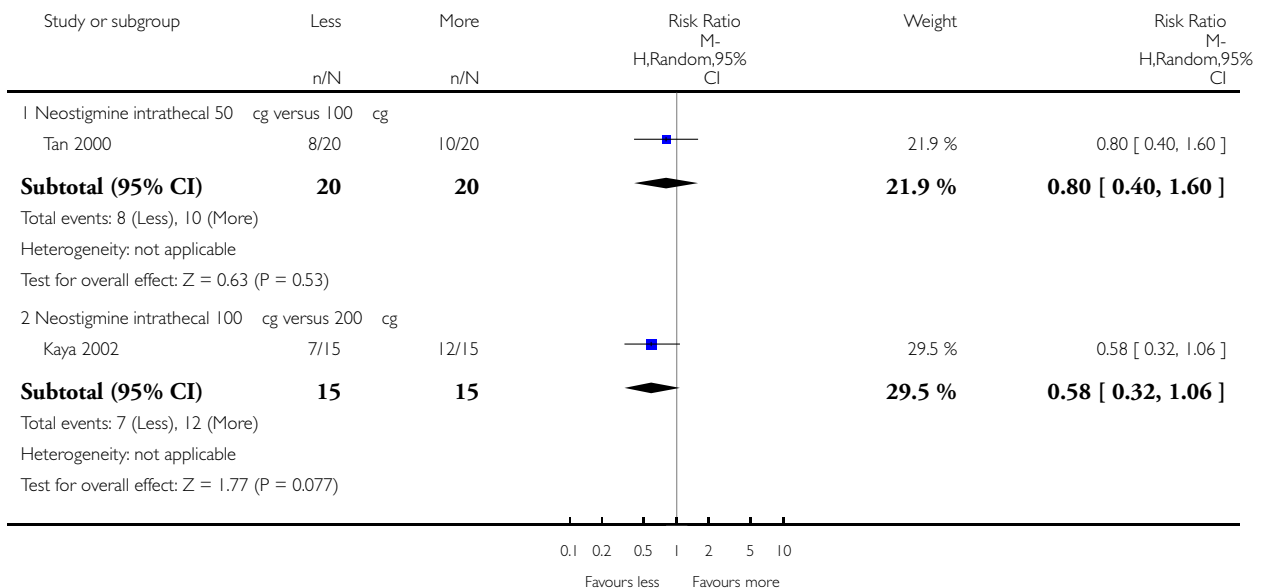


### Analysis 12.32. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 32 Nausea or Vomiting neostigmine.

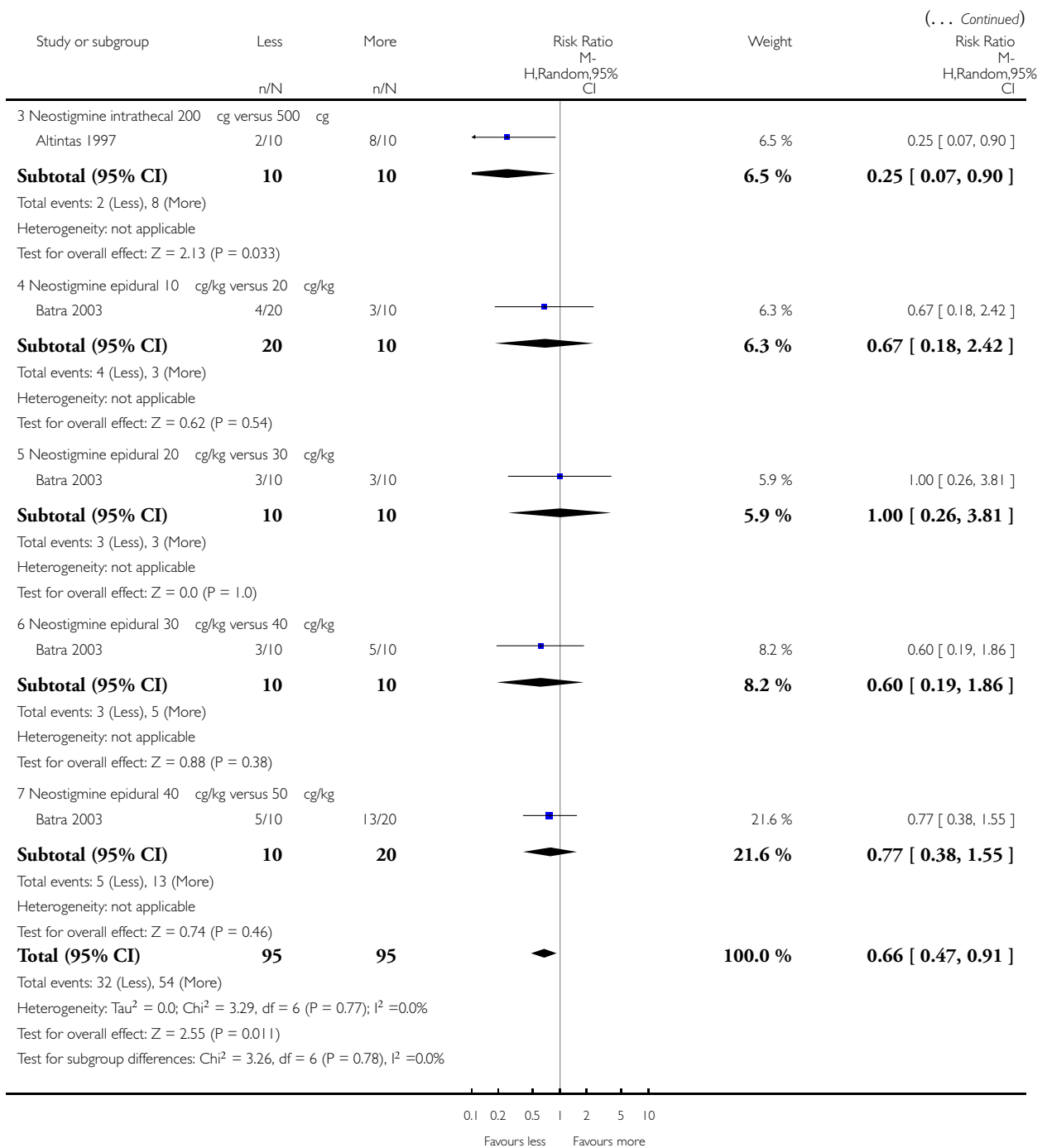
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 32 Nausea or Vomiting neostigmine



(Continued ...)



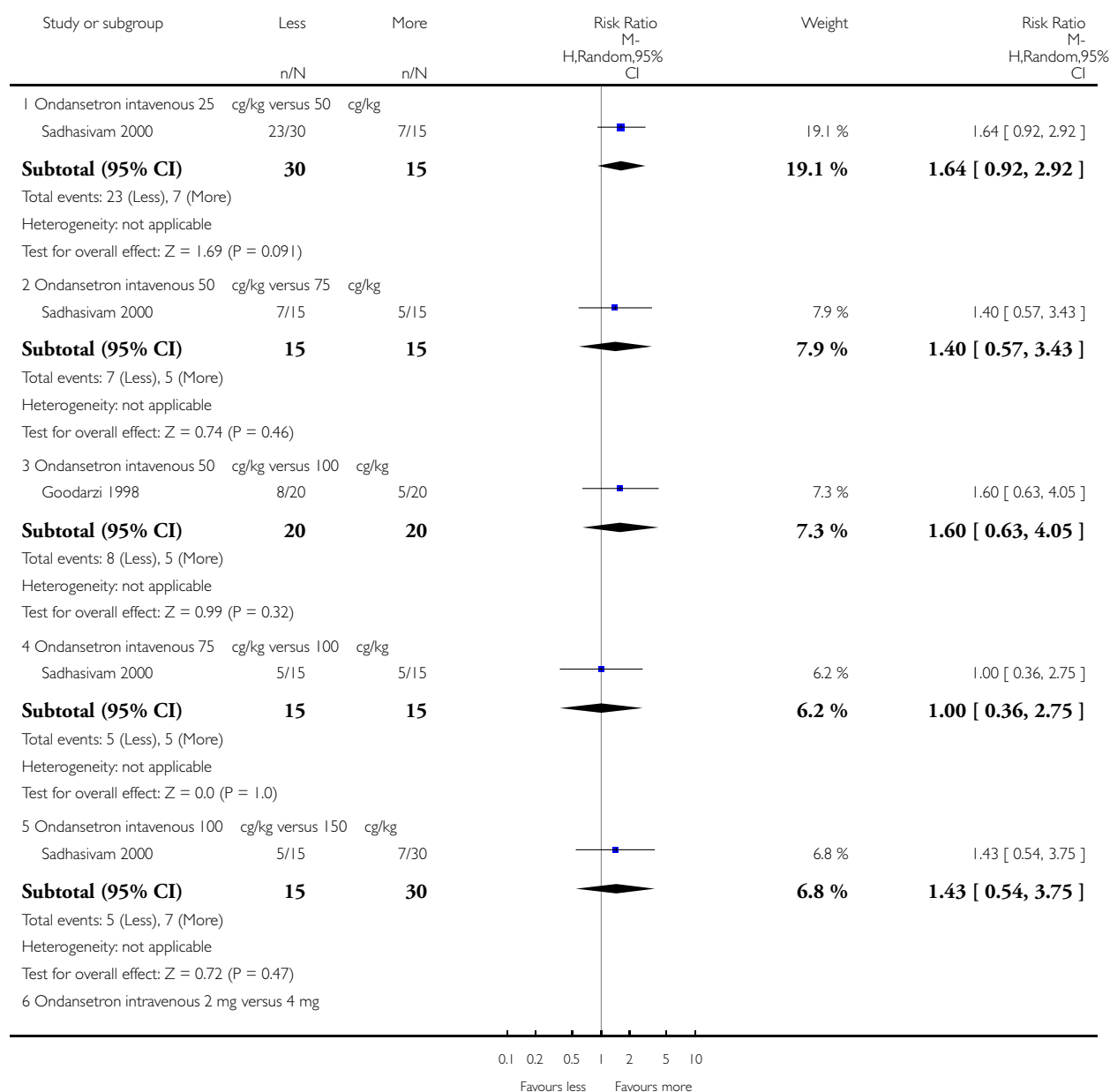


### Analysis 12.33. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 33 Nausea or Vomiting ondansetron.

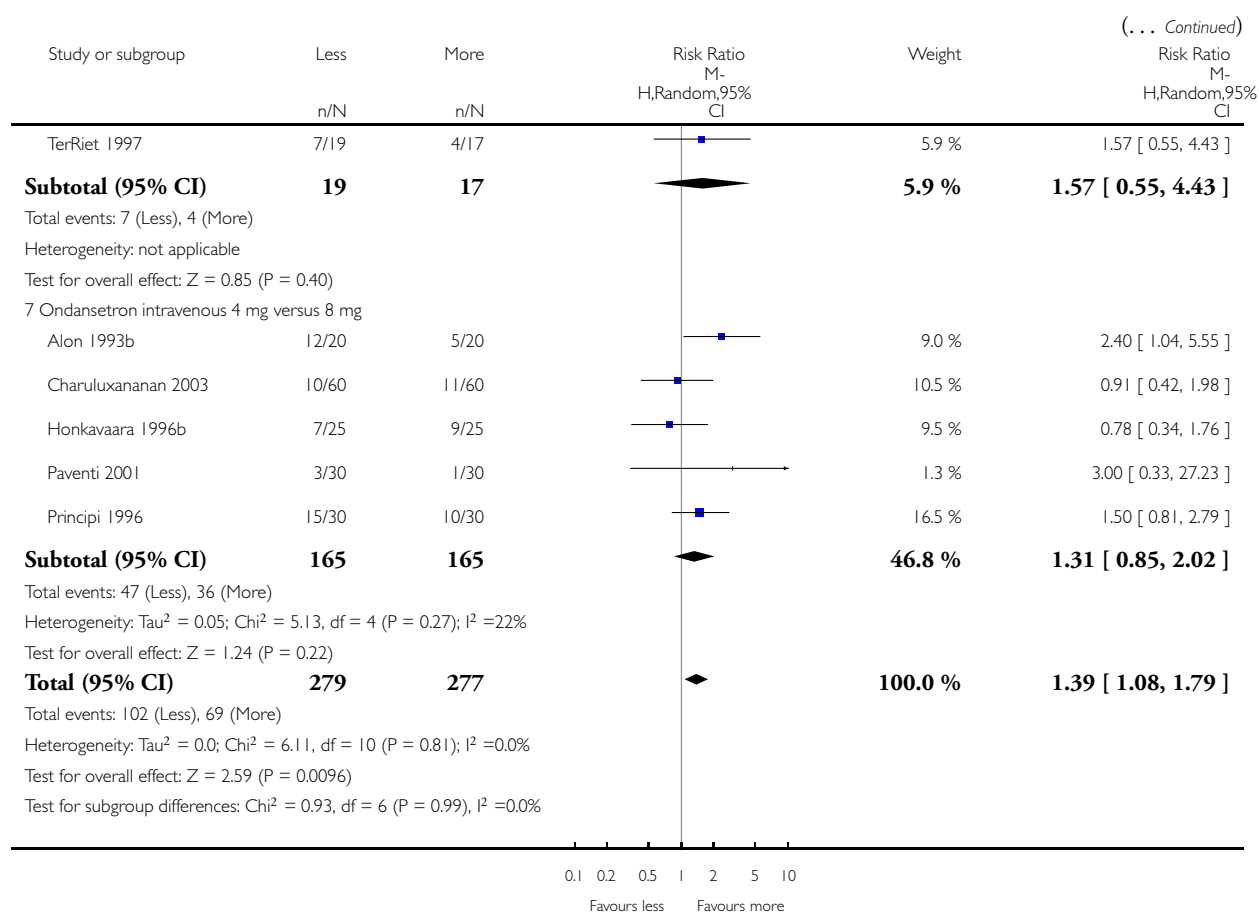
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 33 Nausea or Vomiting ondansetron



(Continued ...)

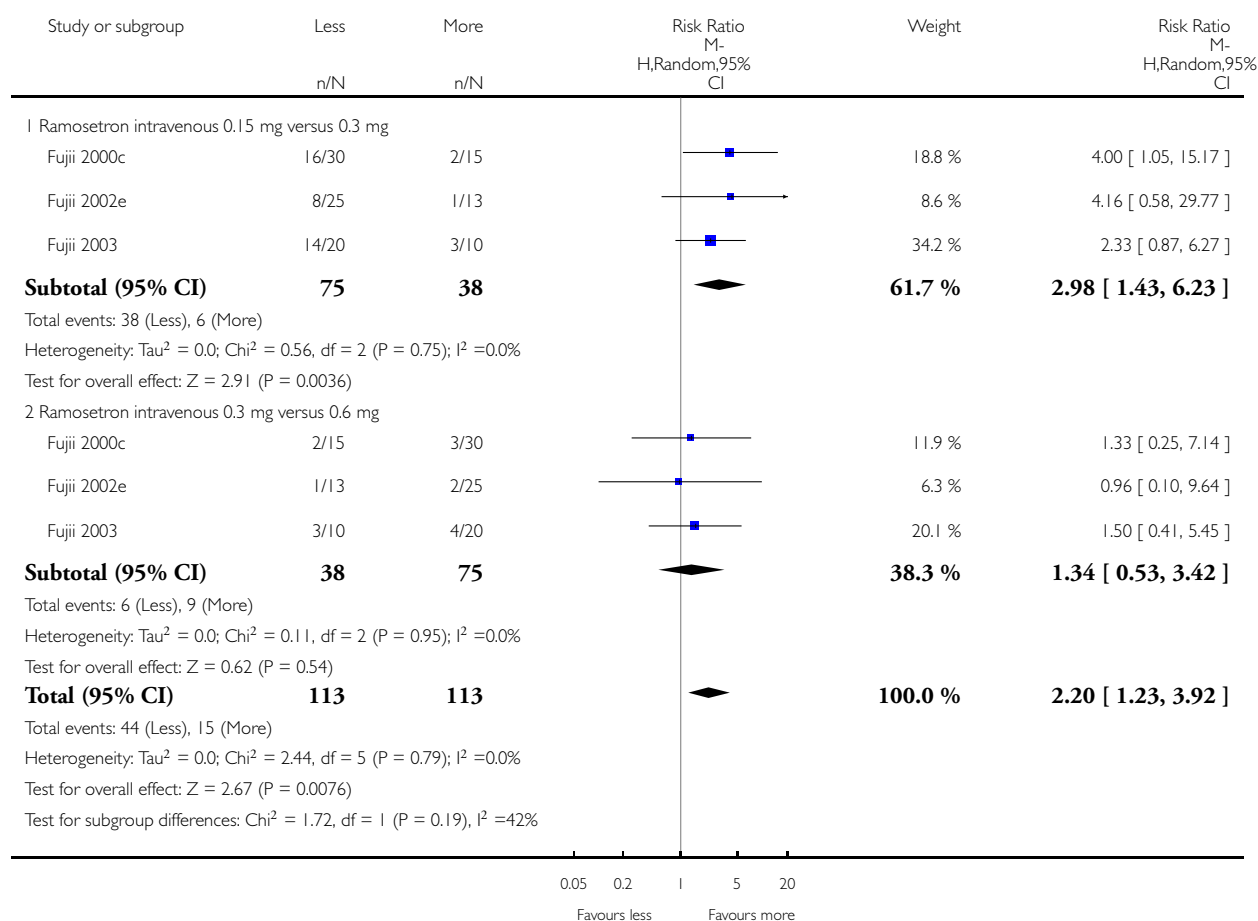


### Analysis 12.34. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 34 Nausea or Vomiting ramosetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 34 Nausea or Vomiting ramosetron

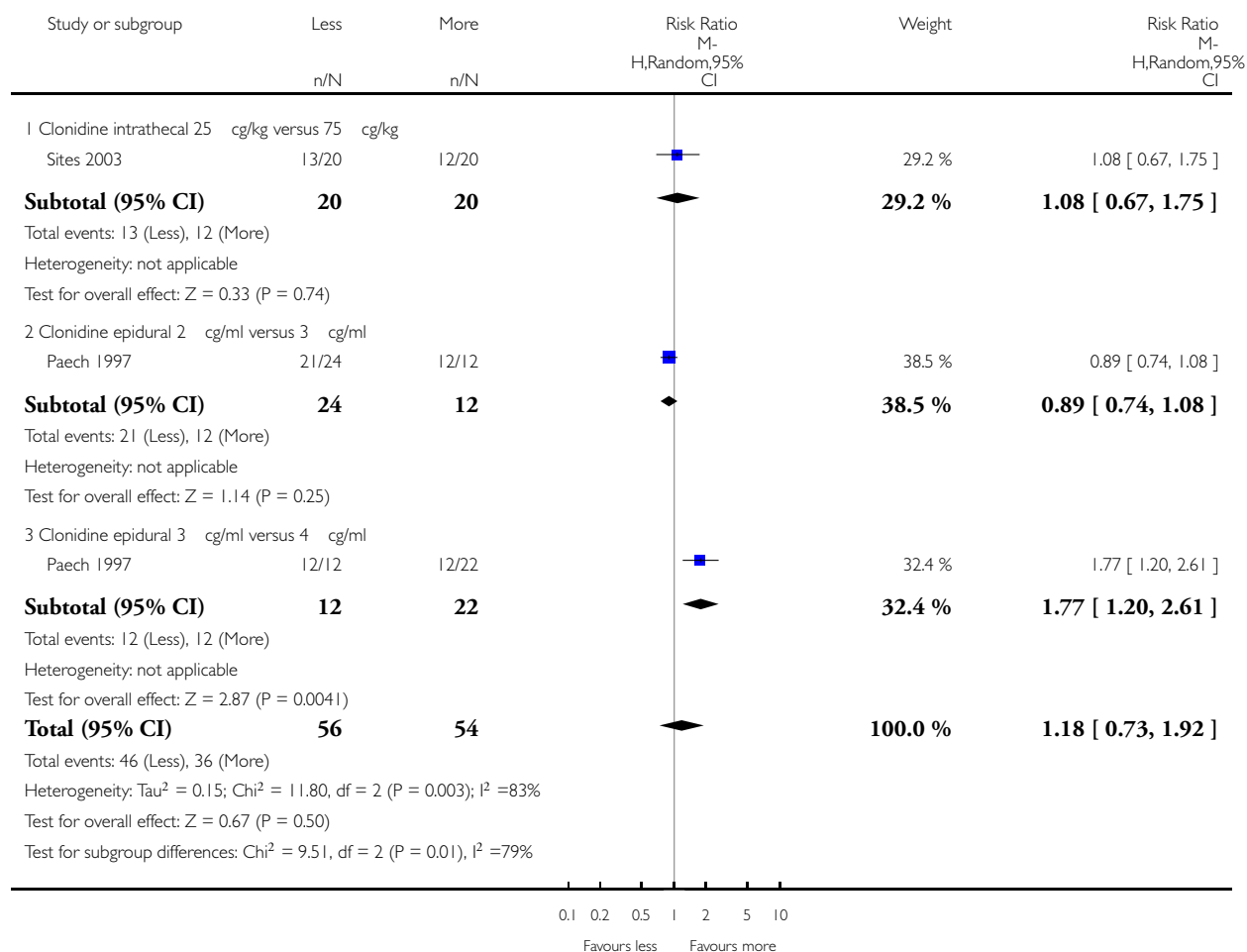


### Analysis 12.35. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 35 Rescue antiemetic clonidine.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 35 Rescue antiemetic clonidine

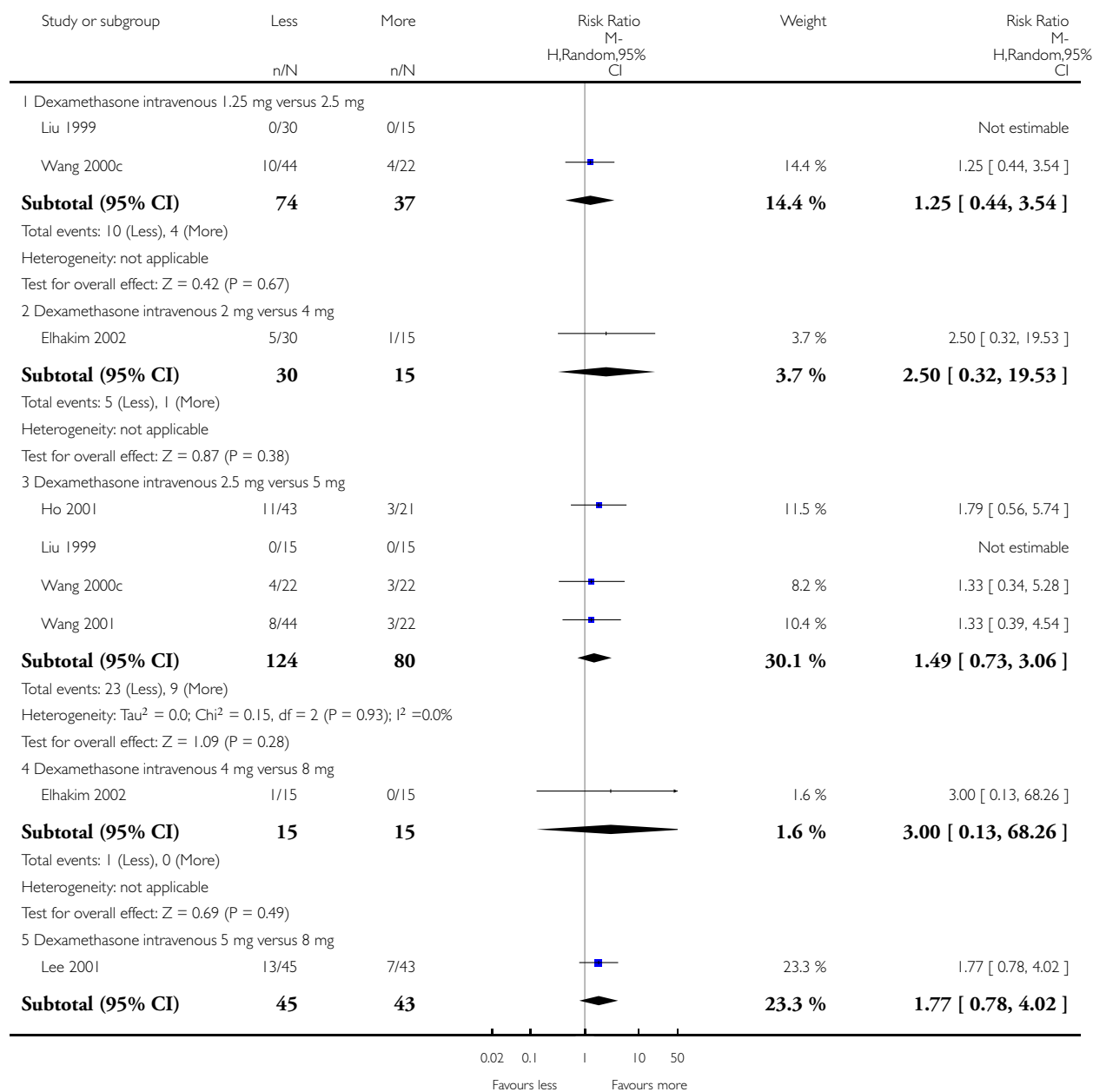


# **Analysis 12.36. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 36 Rescue antiemetic dexamethasone.**

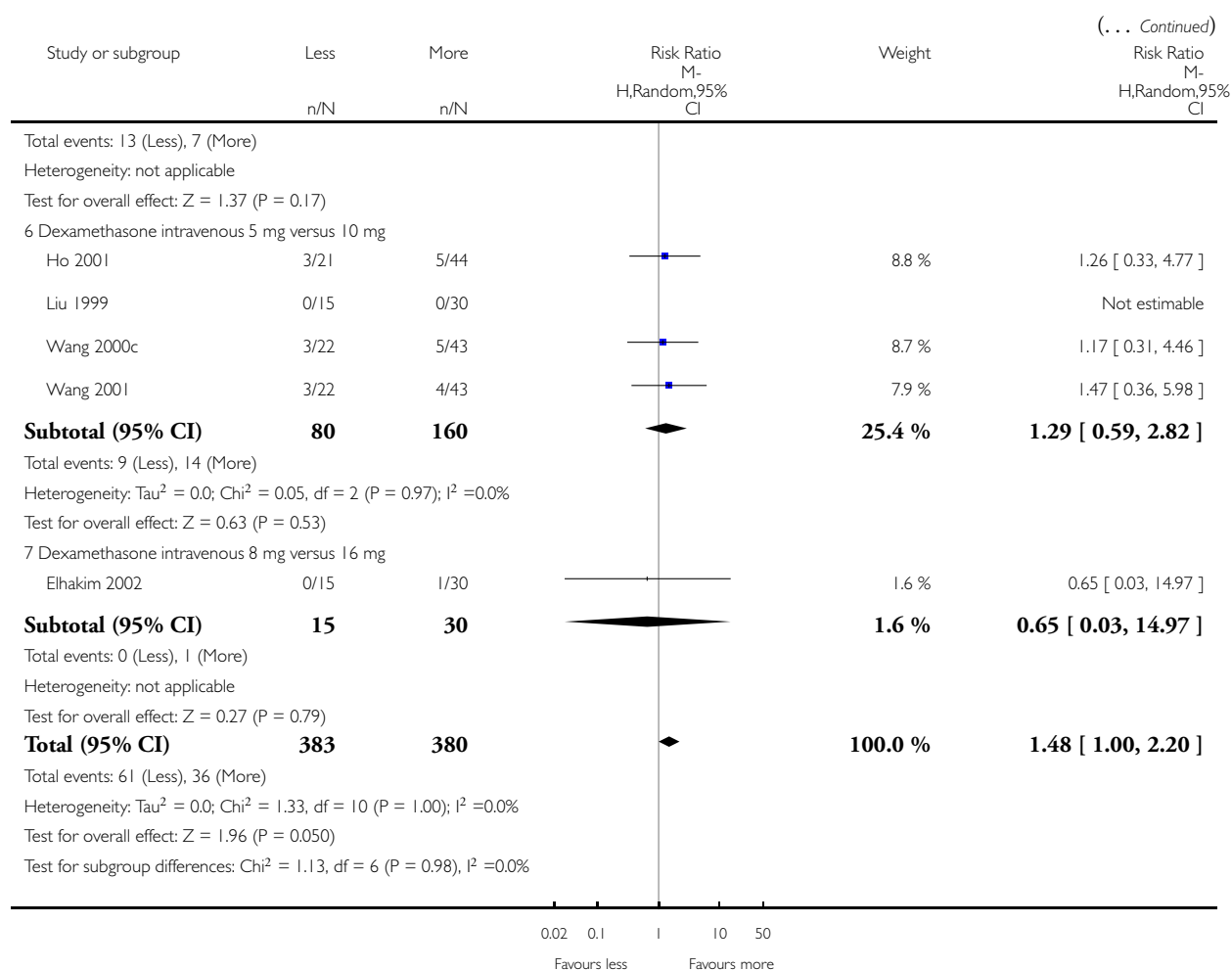
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 36 Rescue antiemetic dexamethasone



(Continued ...)

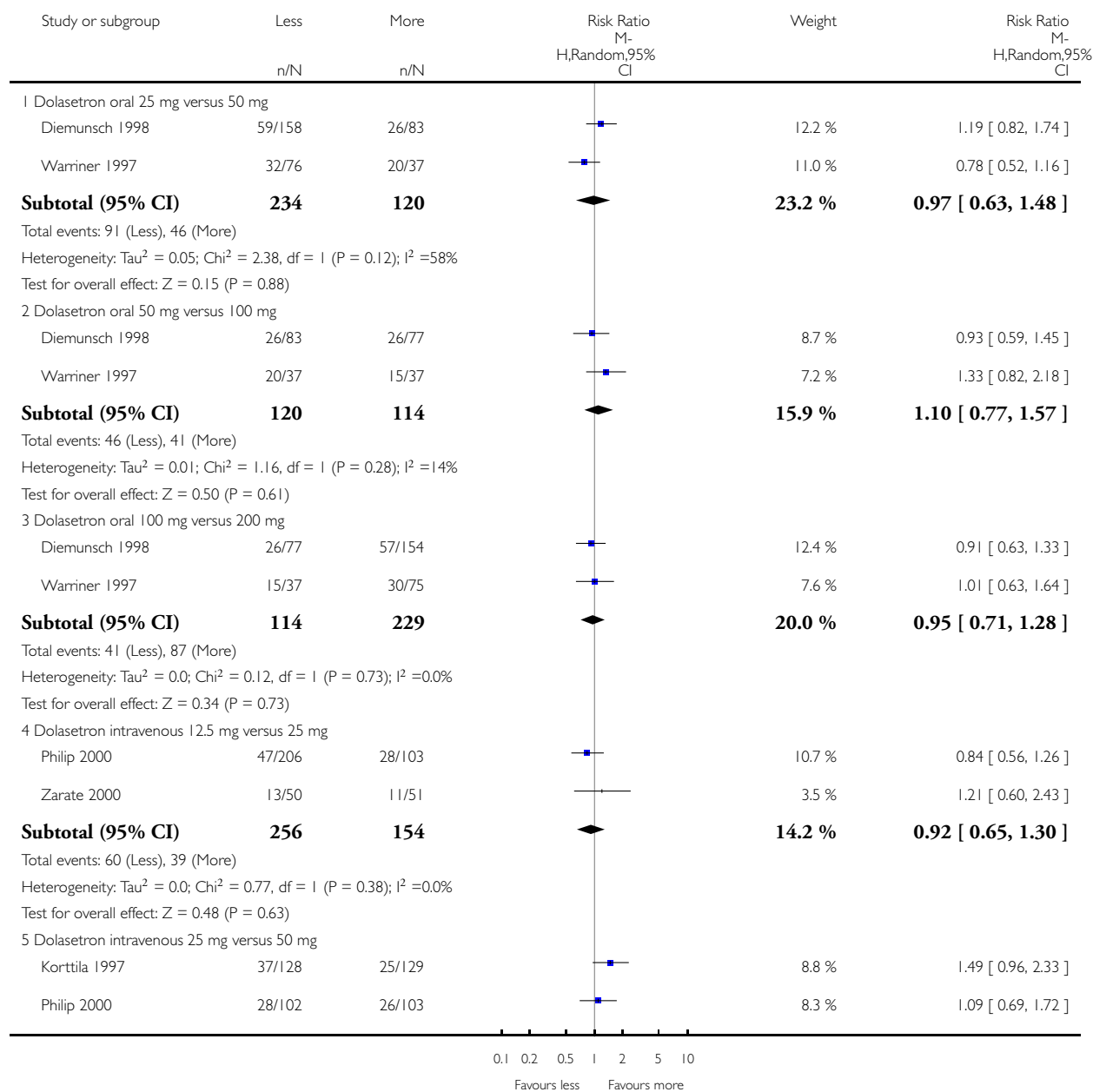


# **Analysis 12.37. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 37 Rescue antiemetic dolasetron.**

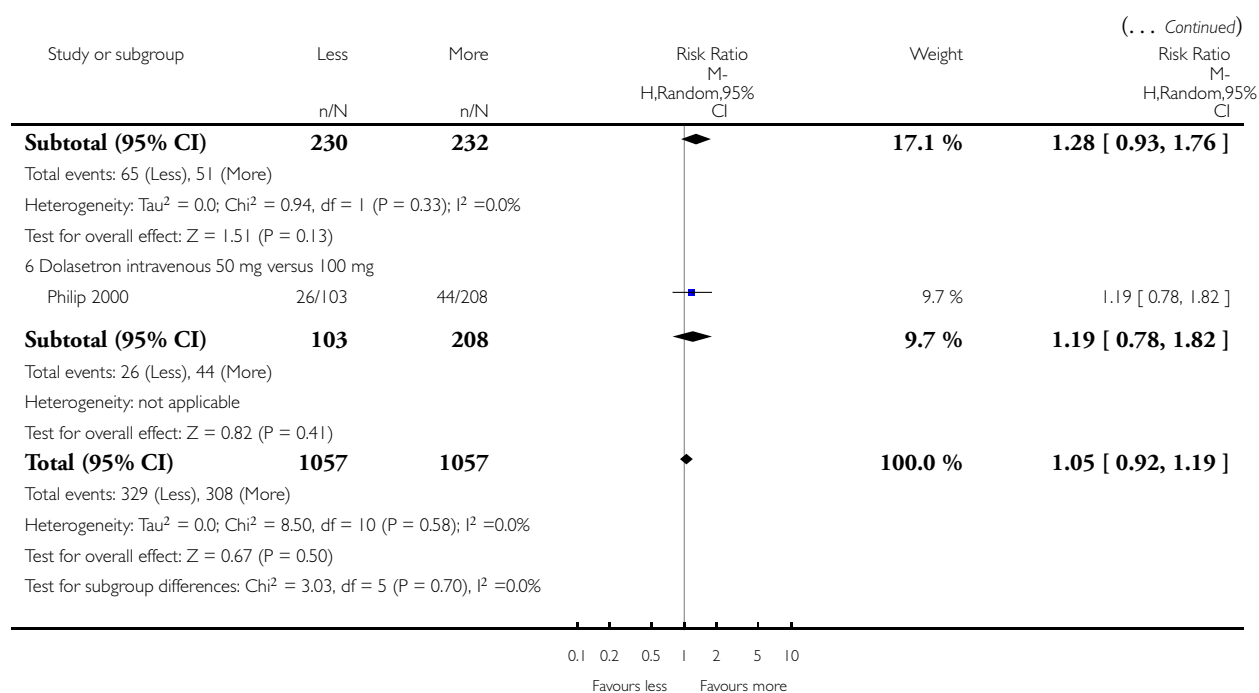
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 37 Rescue antiemetic dolasetron



(Continued ...)



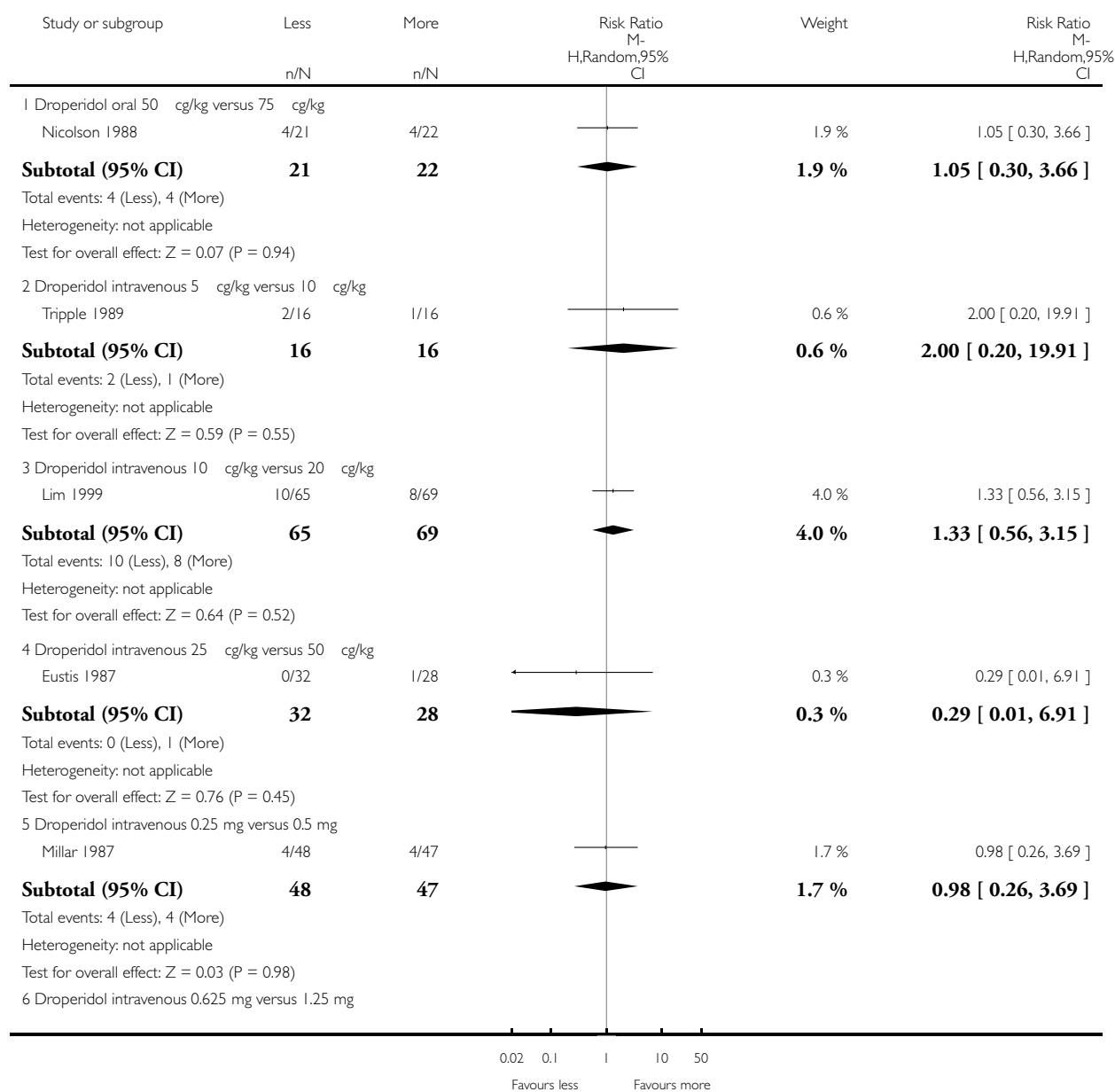


# **Analysis 12.38. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 38 Rescue antiemetic droperidol.**

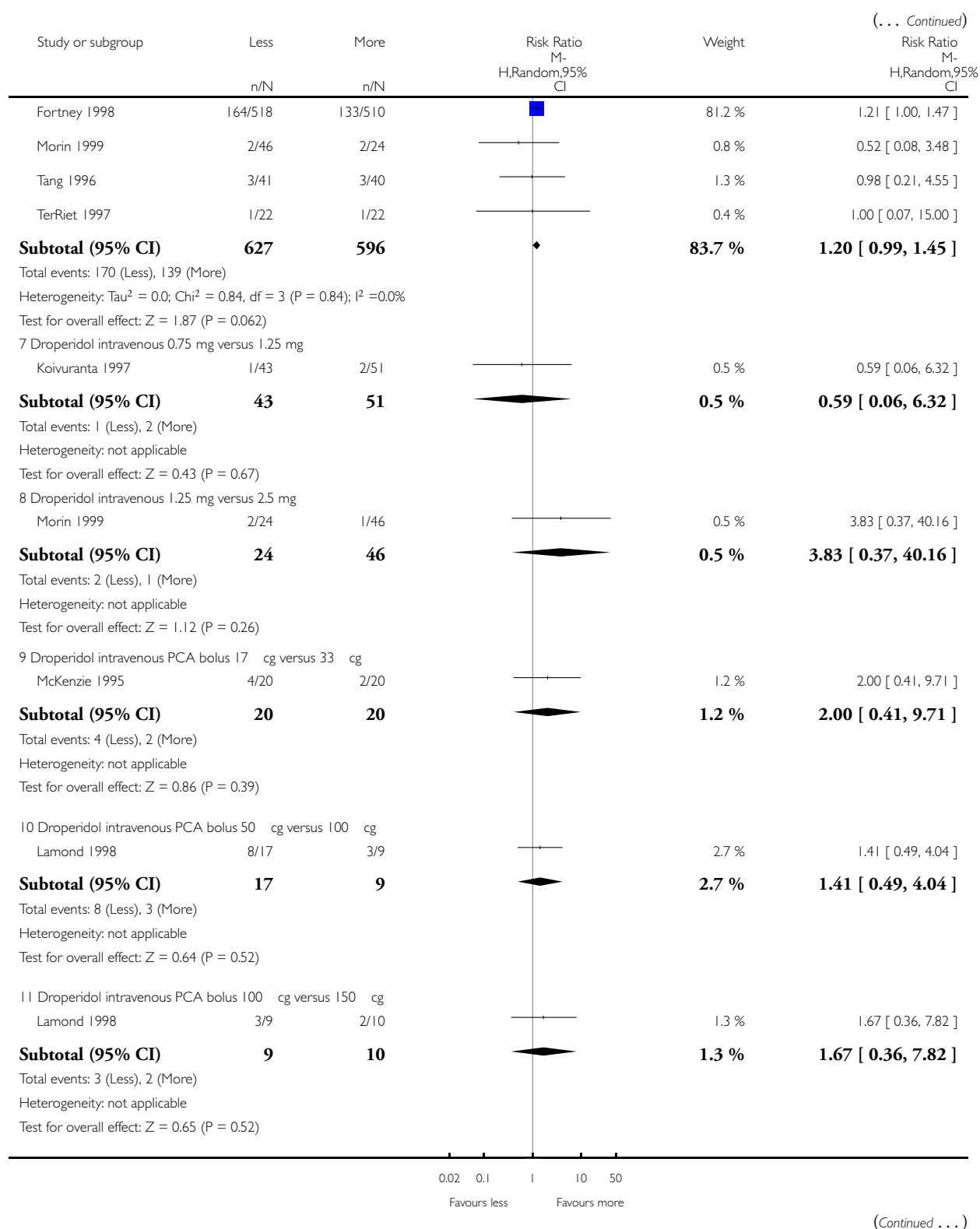
Review: Drugs for preventing postoperative nausea and vomiting

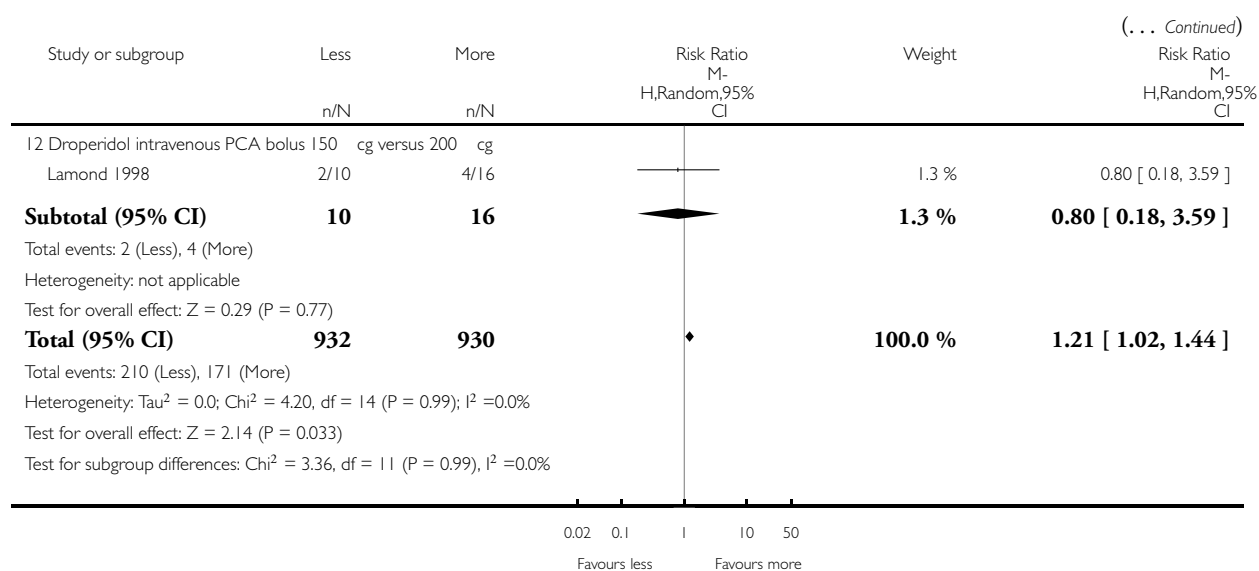
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 38 Rescue antiemetic droperidol



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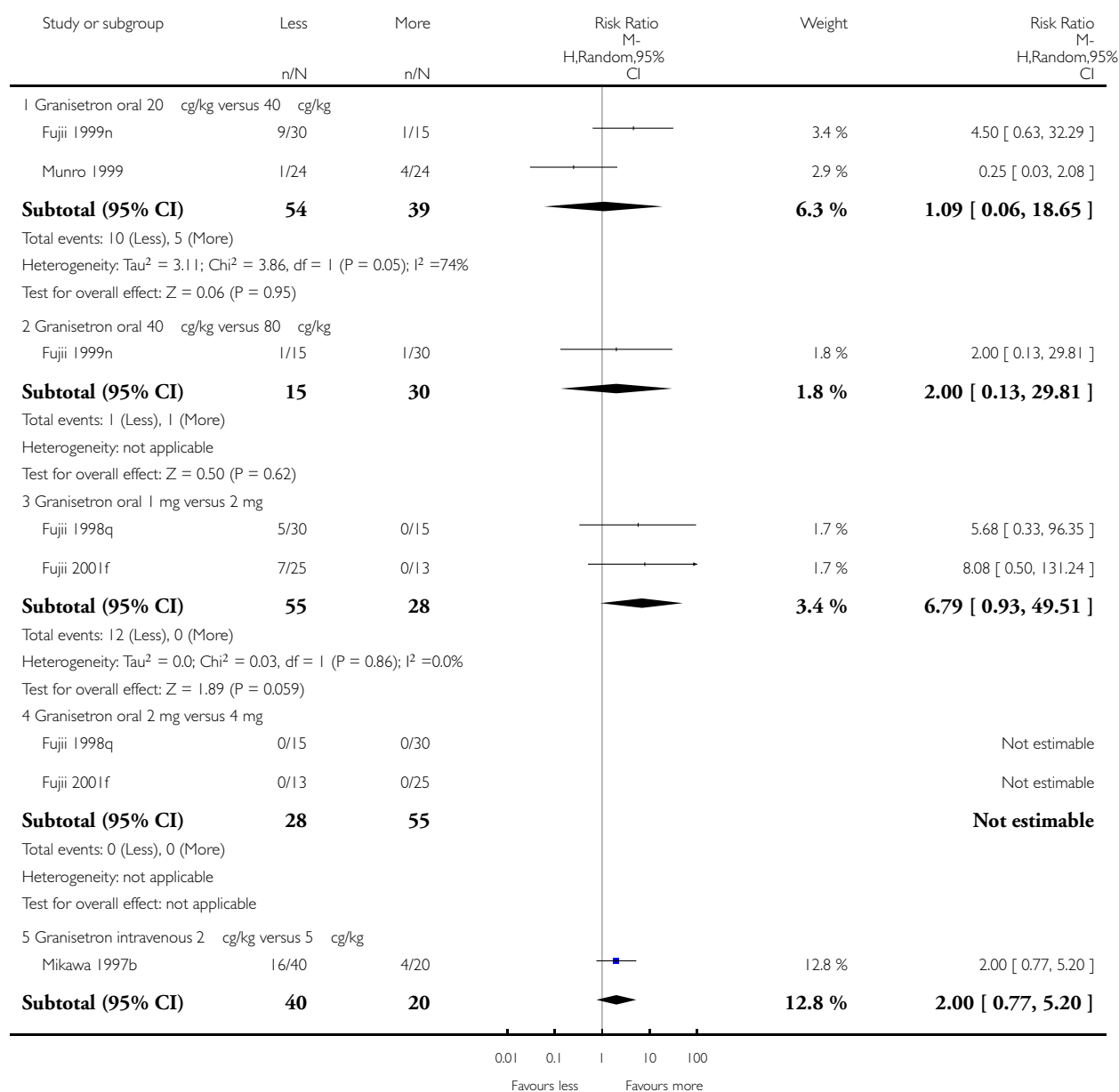


# **Analysis 12.39. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 39 Rescue antiemetic granisetron.**

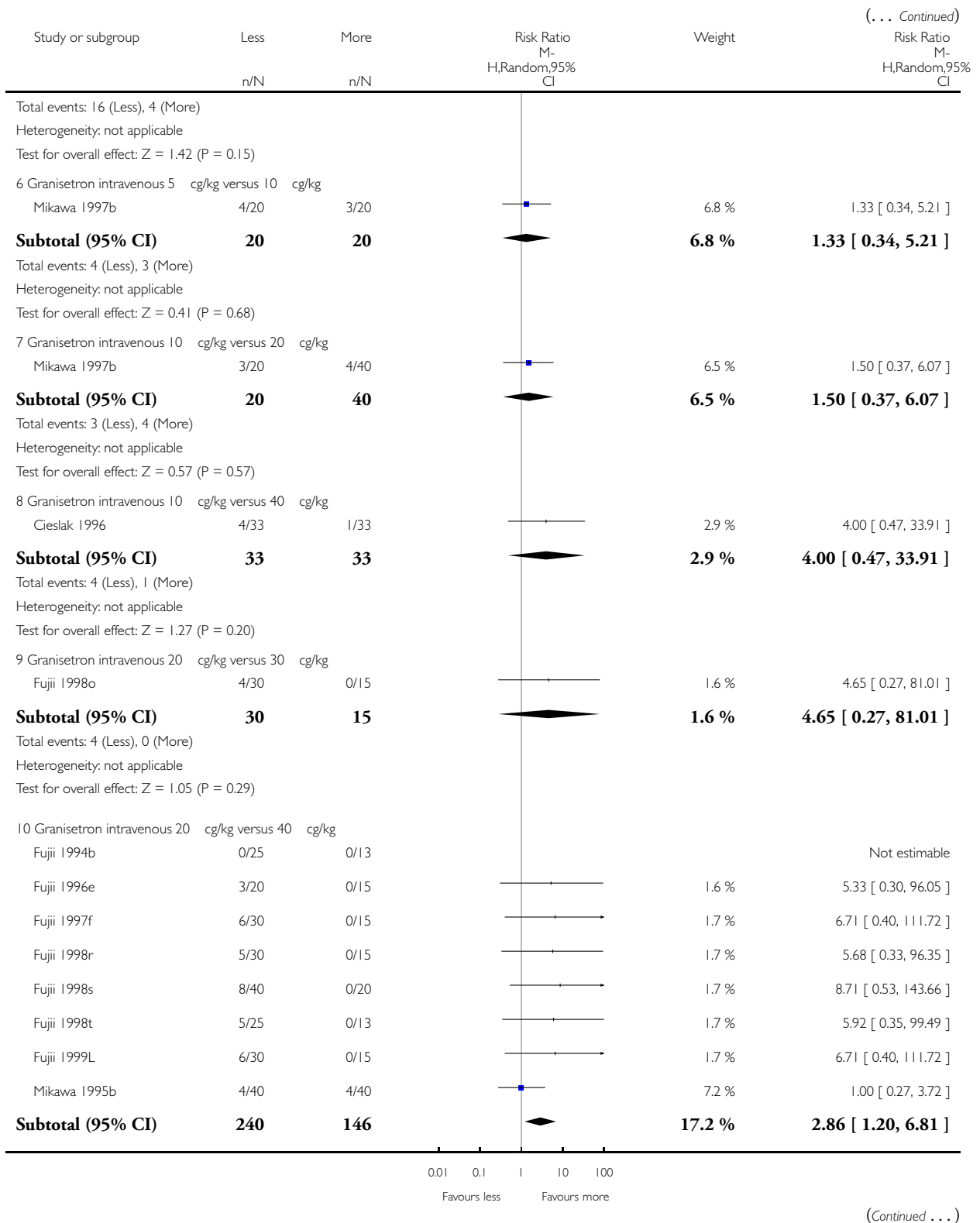
Review: Drugs for preventing postoperative nausea and vomiting

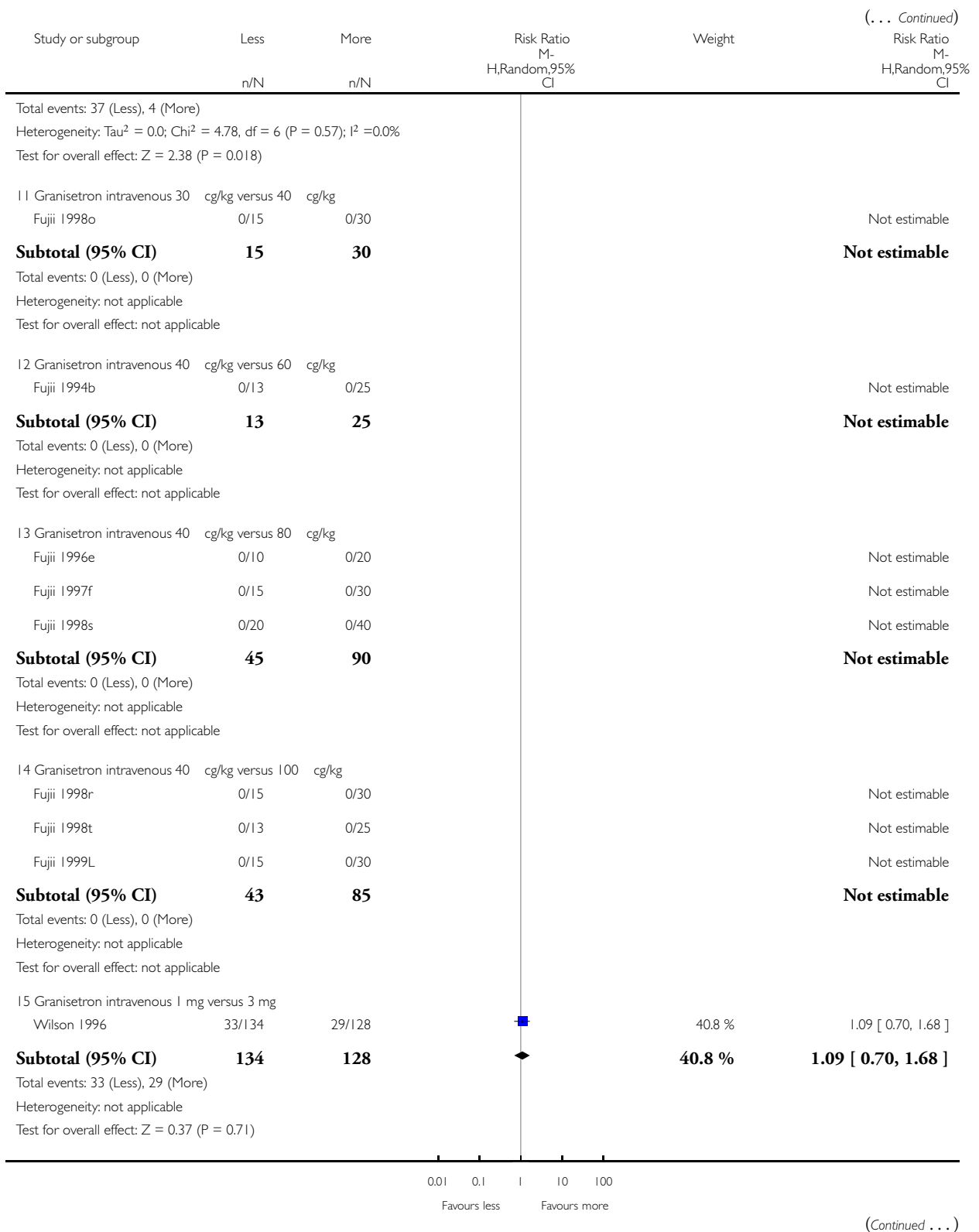
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

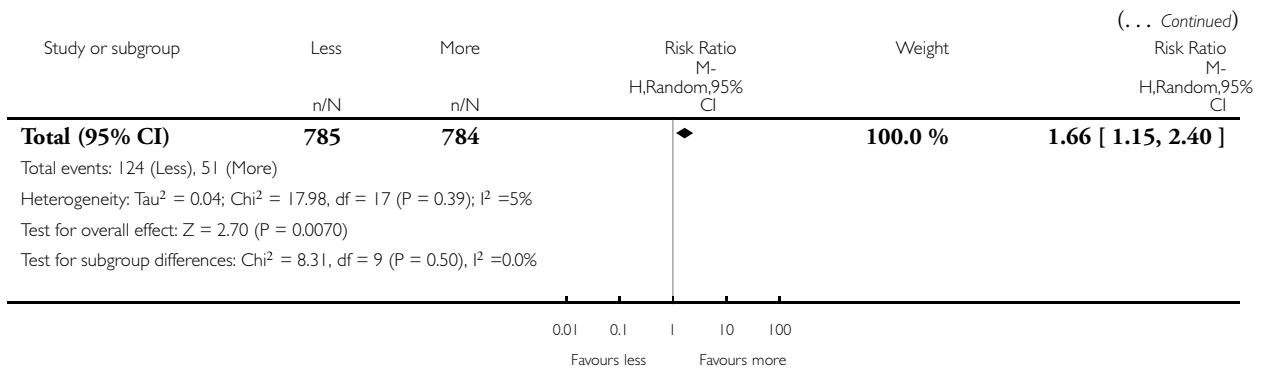
Outcome: 39 Rescue antiemetic granisetron



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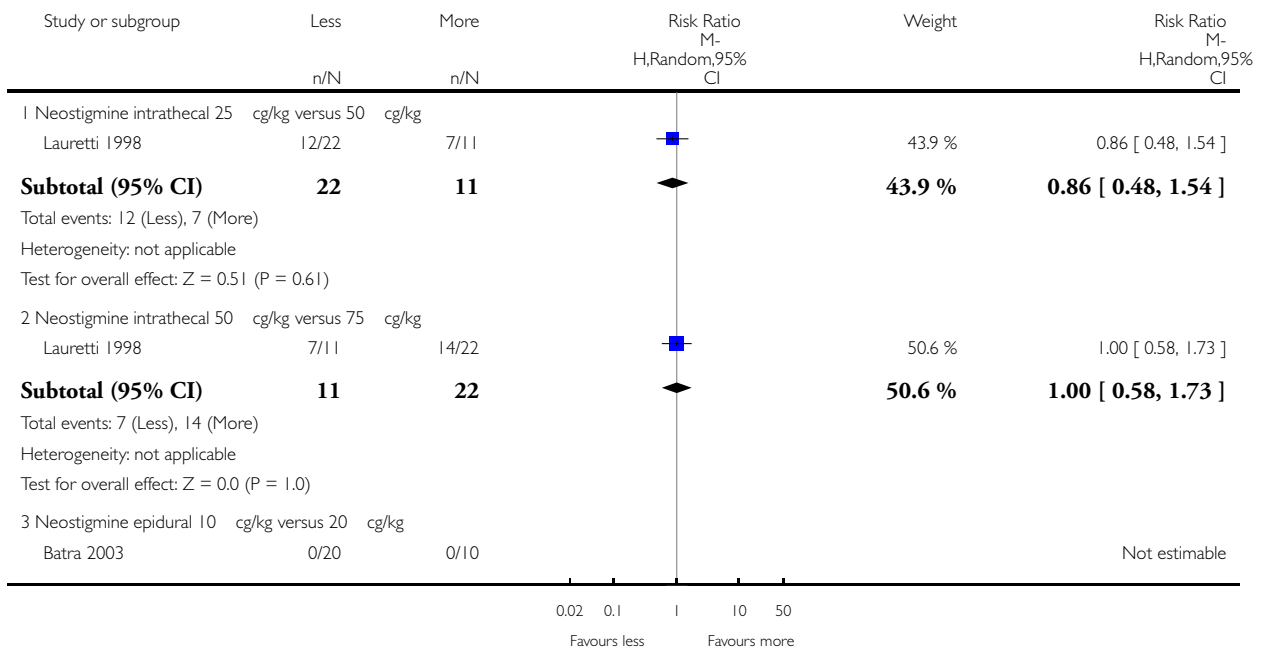


#### Analysis 12.40. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 40 Rescue antiemetic neostigmine.

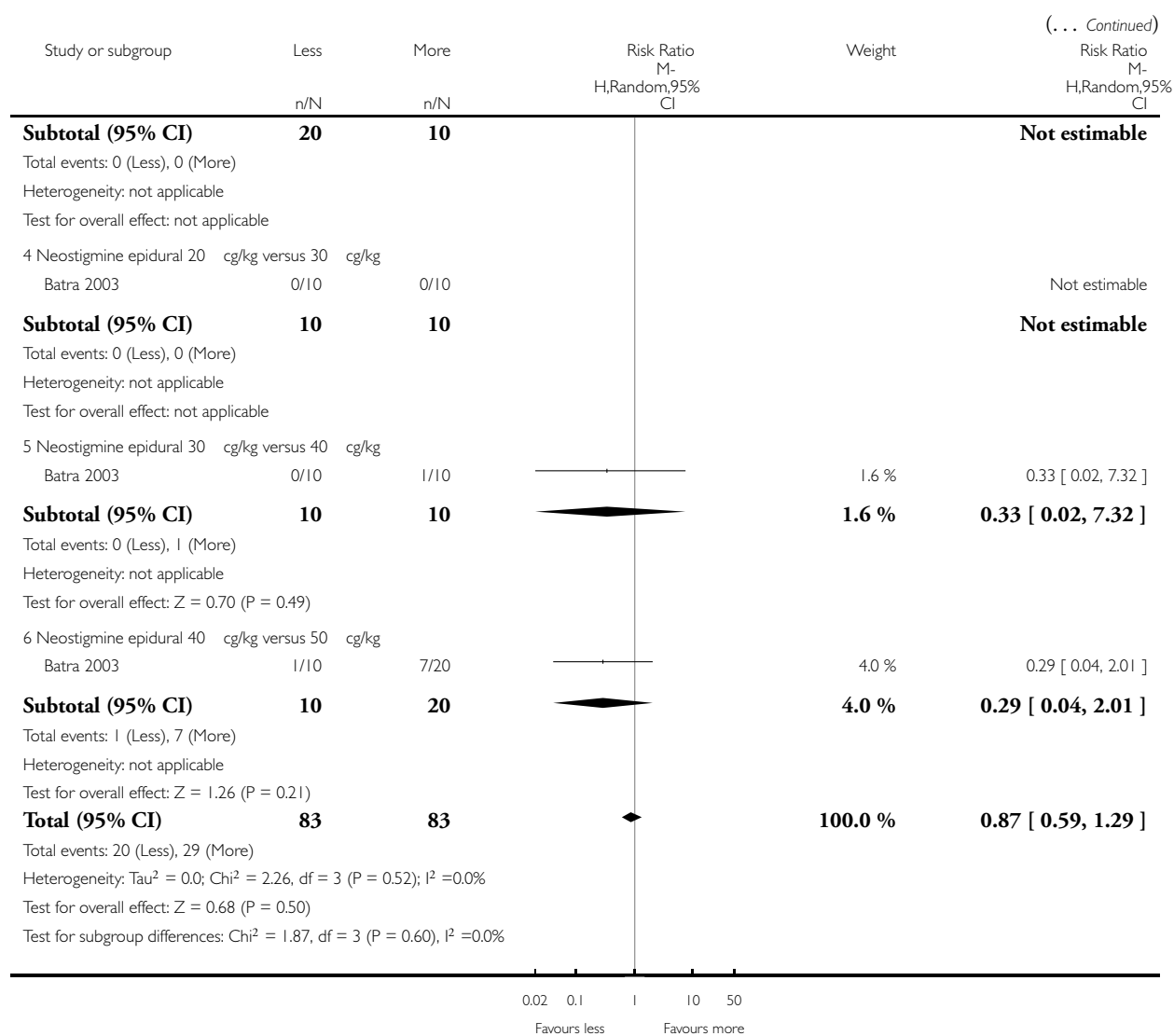
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 40 Rescue antiemetic neostigmine



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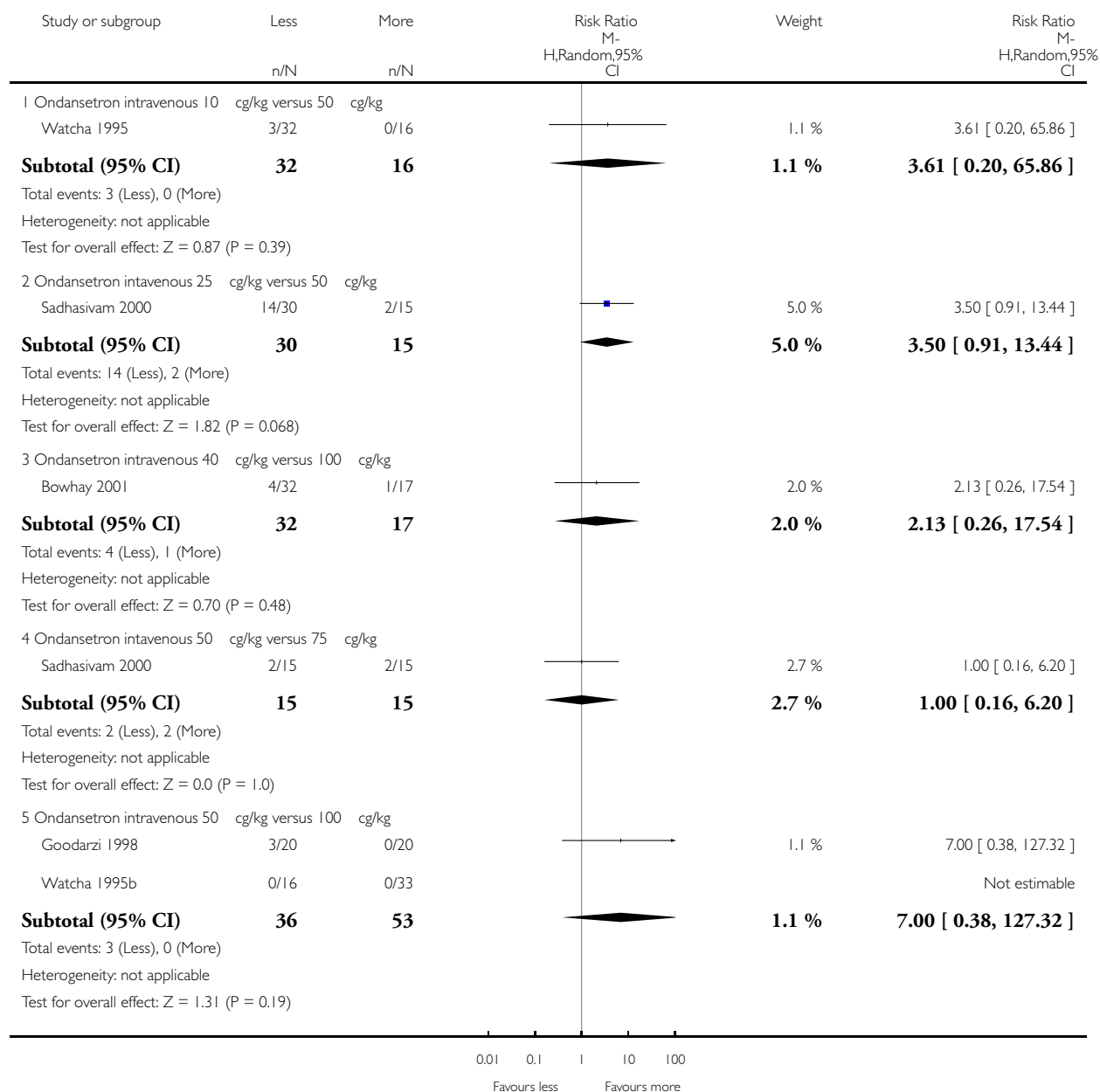


# **Analysis 12.41. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 41 Rescue antiemetic ondansetron.**

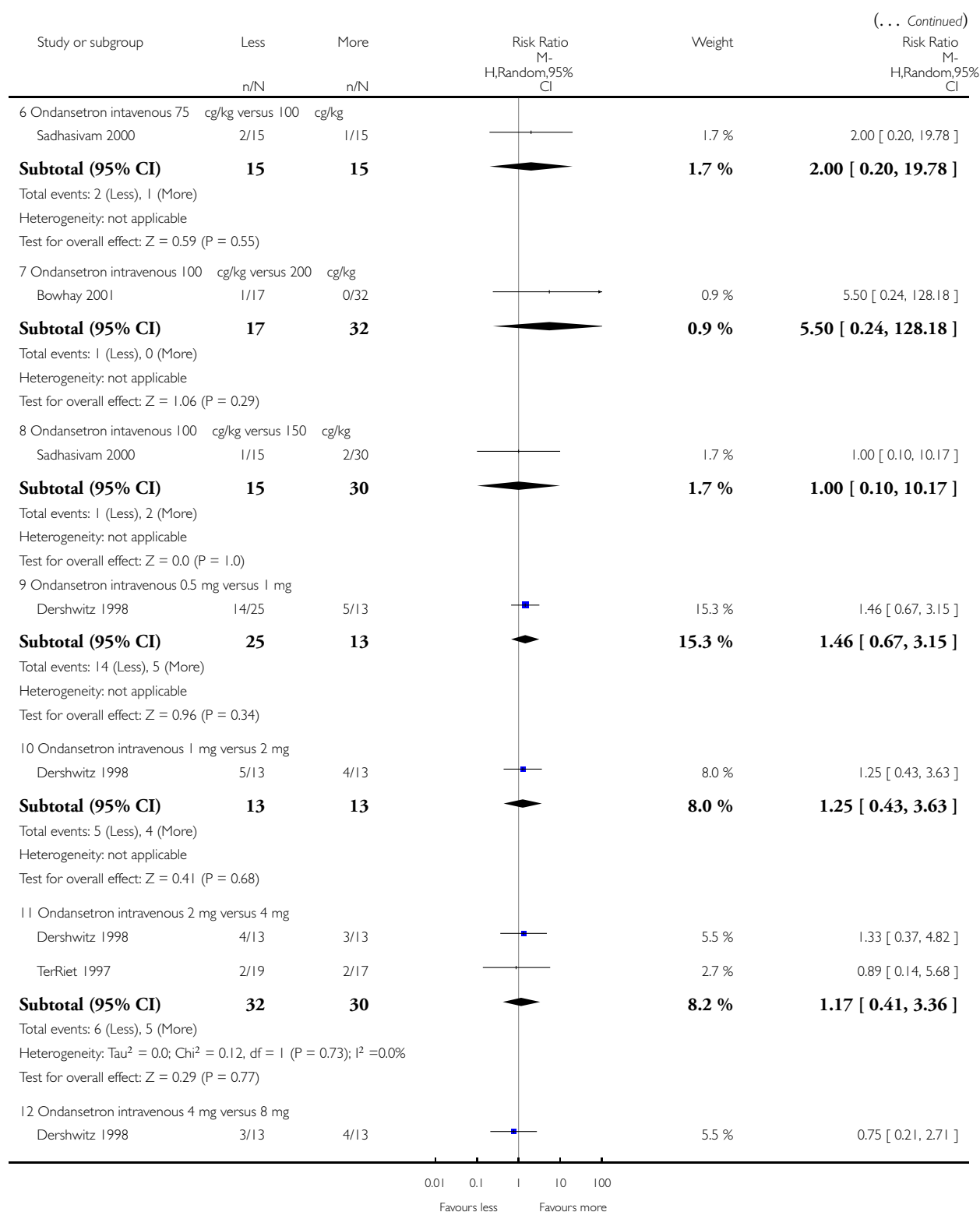
Review: Drugs for preventing postoperative nausea and vomiting

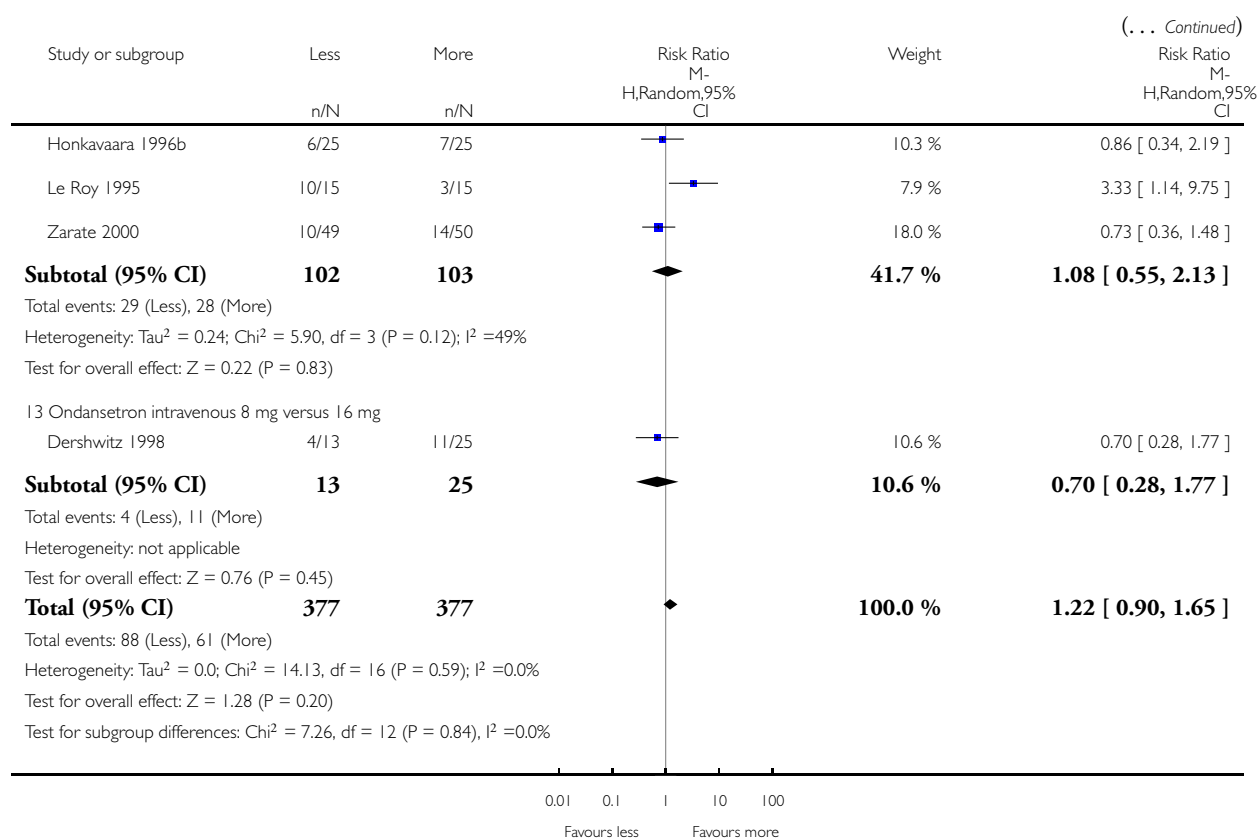
Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 41 Rescue antiemetic ondansetron



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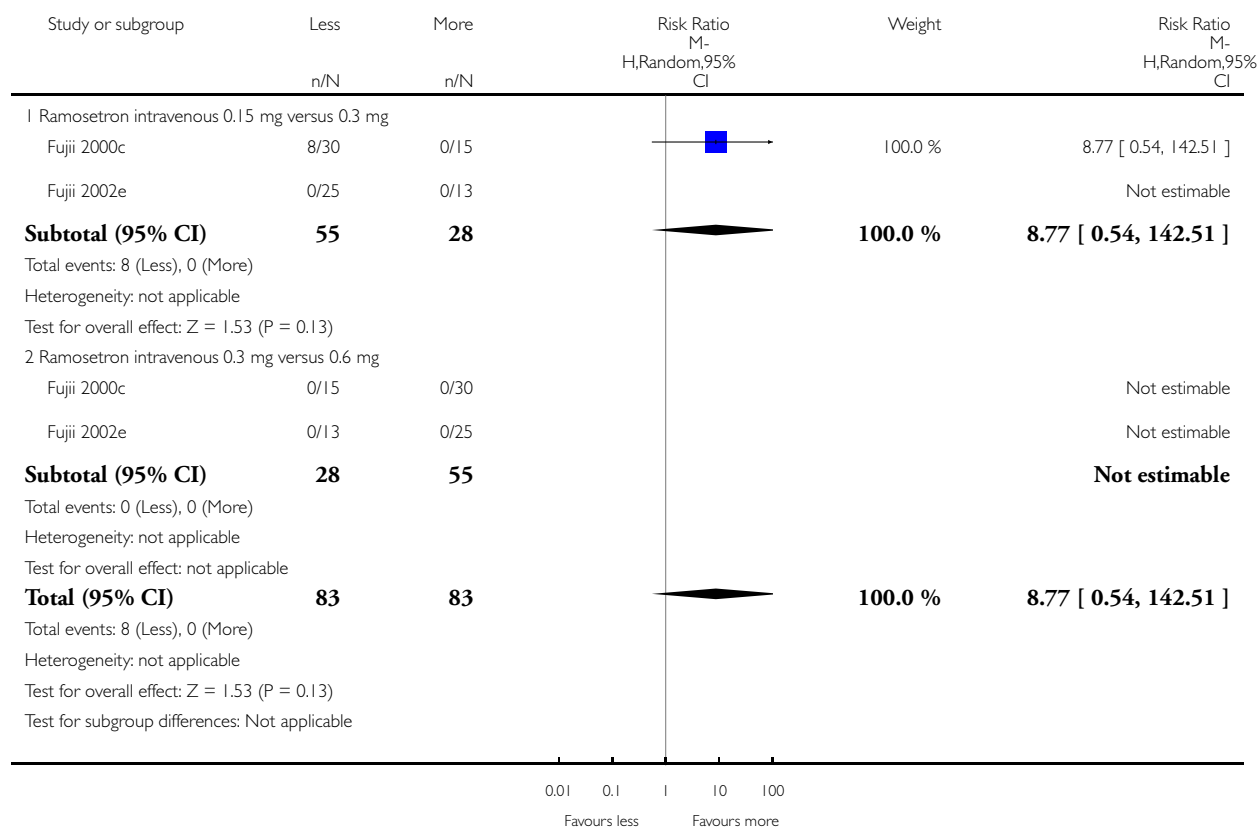


# **Analysis 12.42. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 42 Rescue antiemetic ramosetron.**

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 42 Rescue antiemetic ramosetron

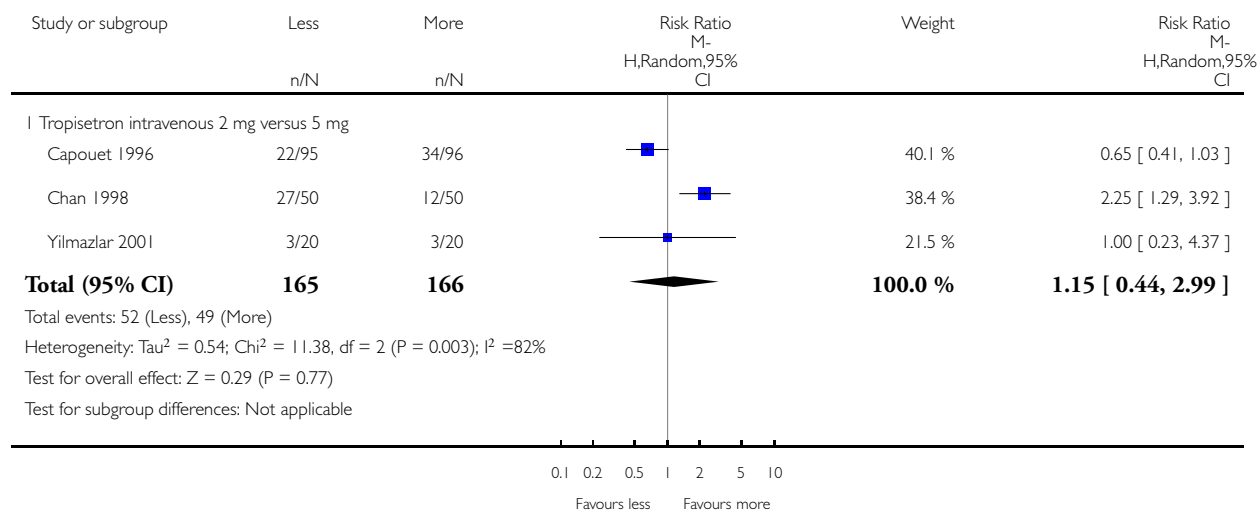


### Analysis 12.43. Comparison 12 SECONDARY ANALYSIS: Dose versus Dose, Outcome 43 Rescue antiemetic tropisetron.

Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 12 SECONDARY ANALYSIS: Dose versus Dose

Outcome: 43 Rescue antiemetic tropisetron

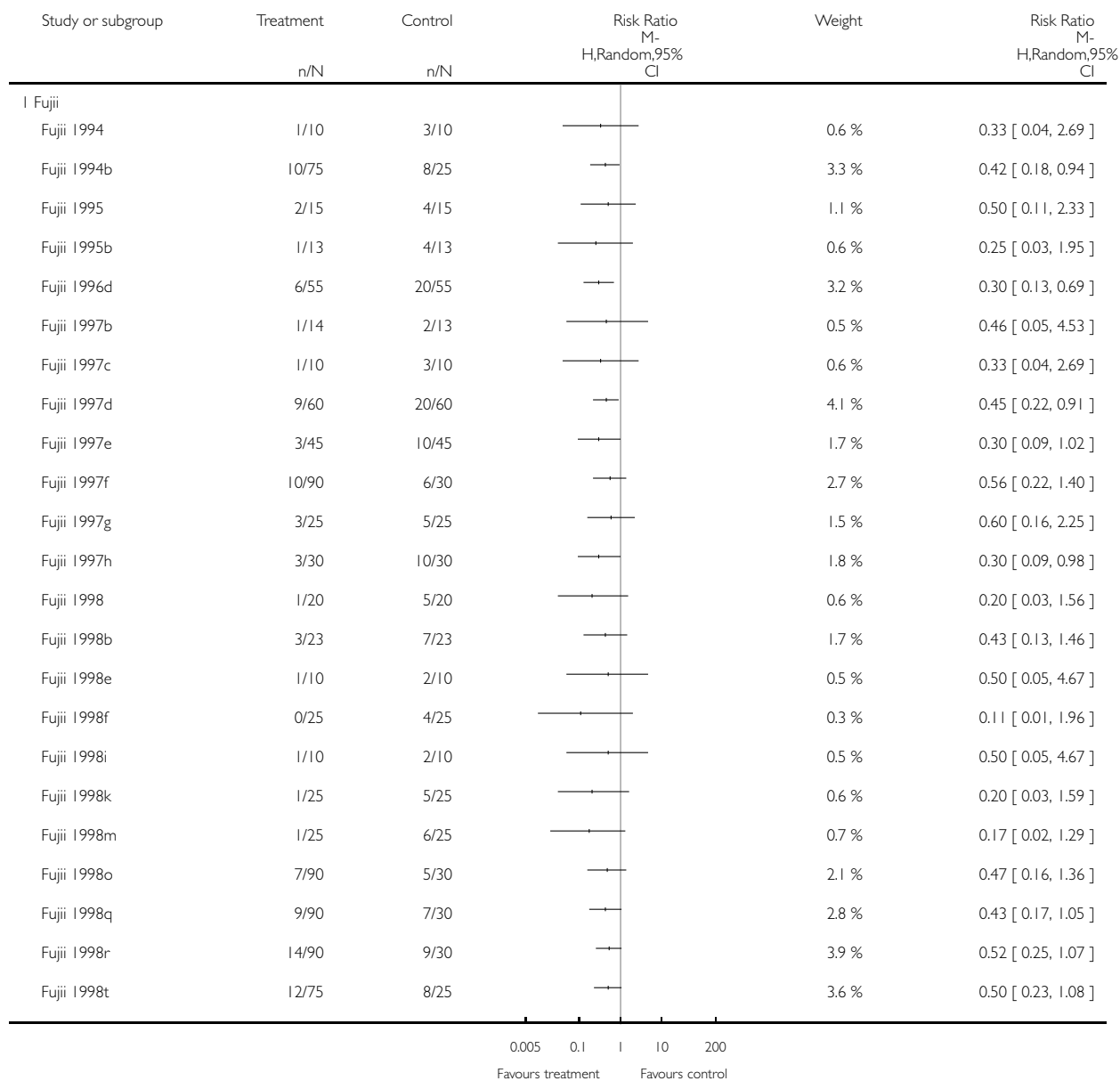


### Analysis 13.1. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 1 Nausea: granisetron.

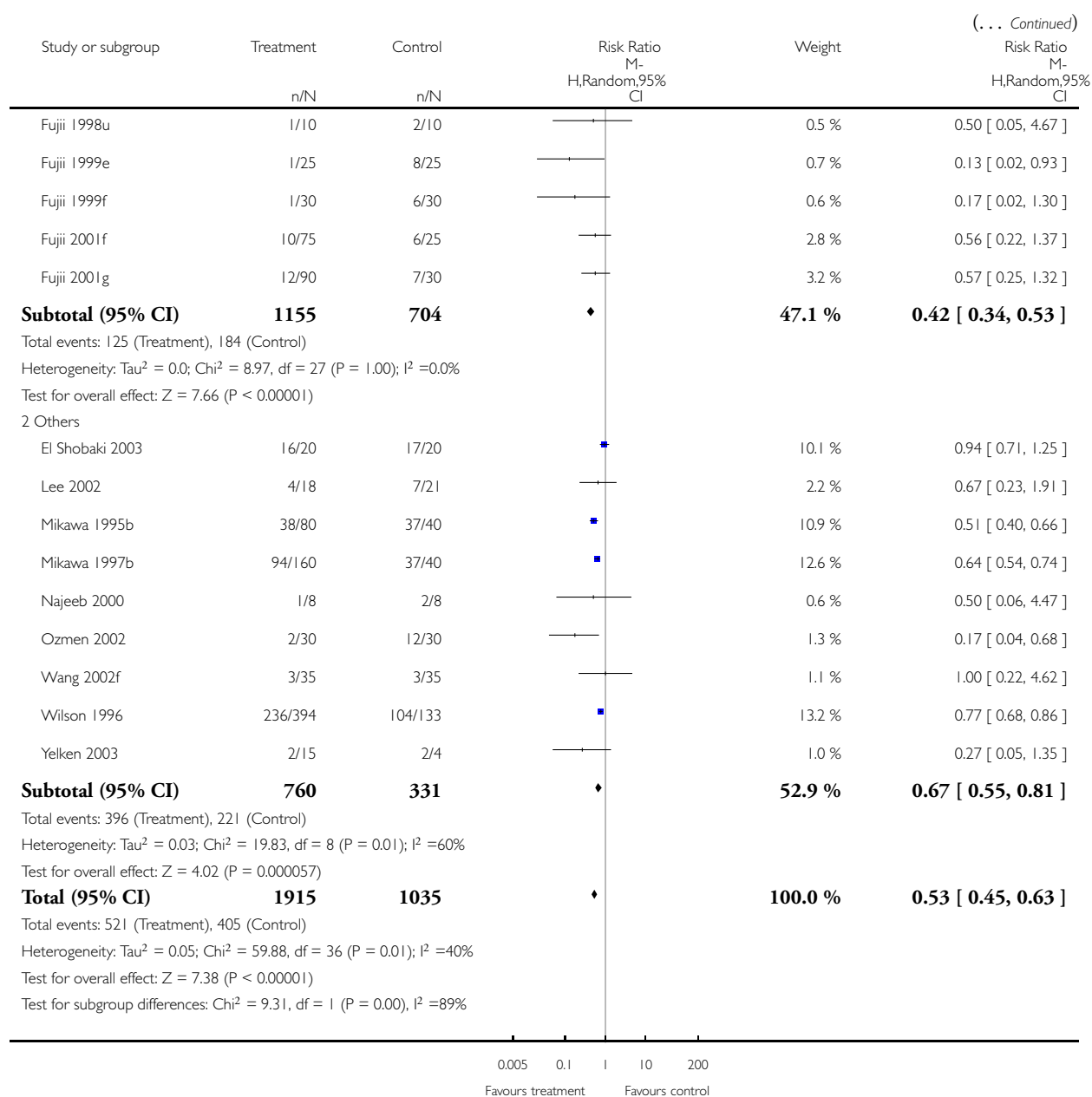
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 1 Nausea: granisetron



(Continued ...)

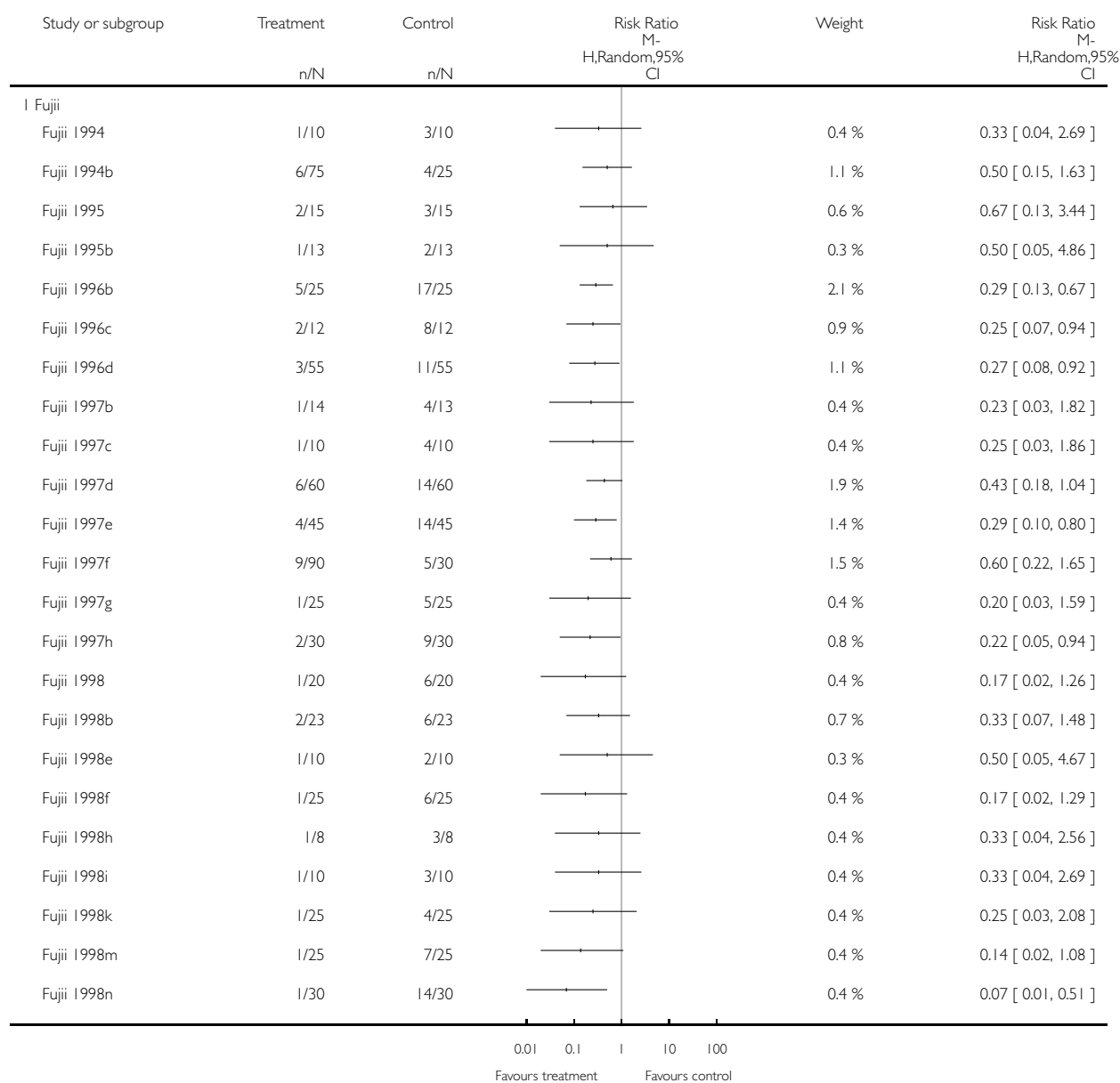


### Analysis 13.2. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 2 Vomiting: granisetron.

Review: Drugs for preventing postoperative nausea and vomiting

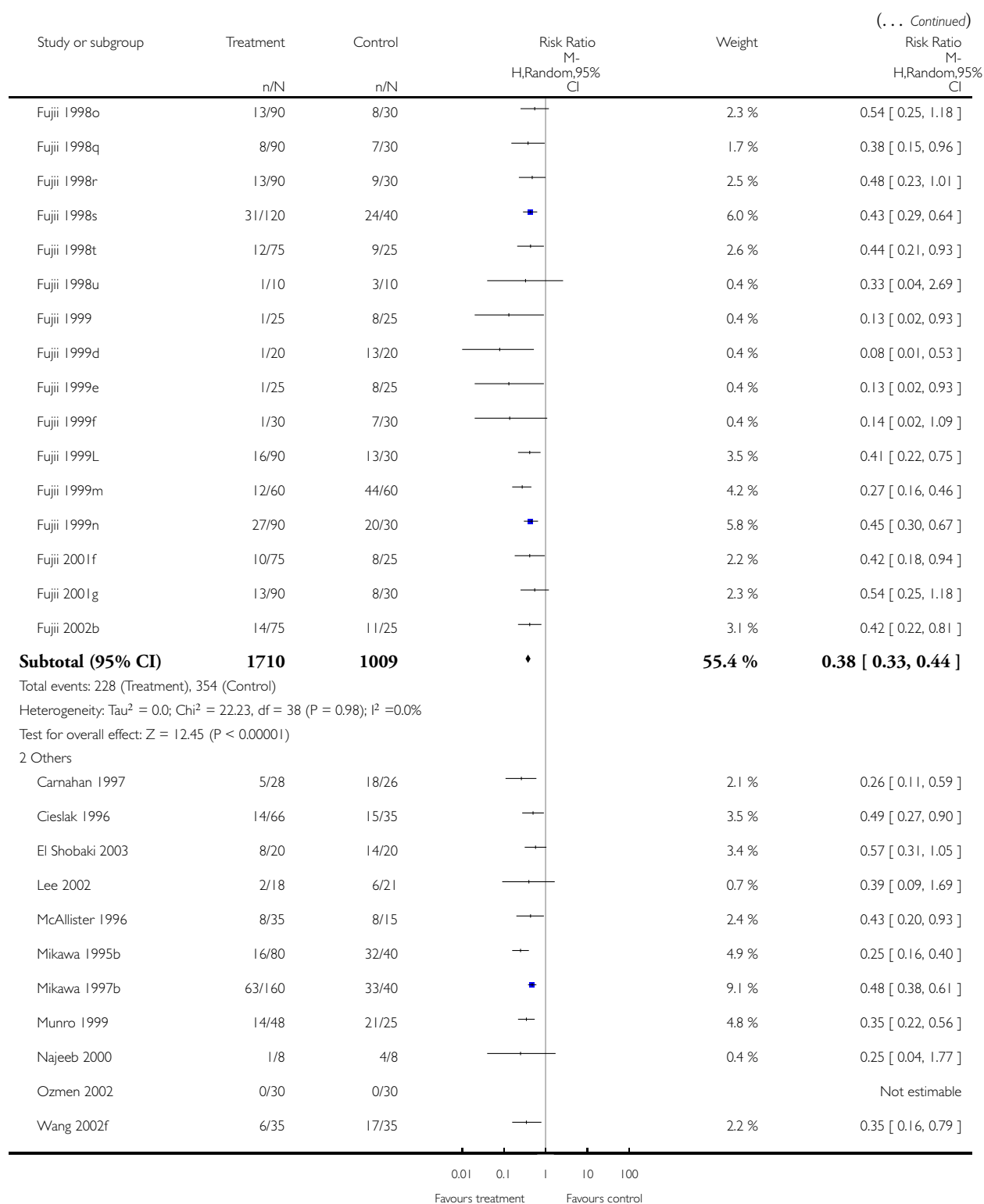
Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 2 Vomiting: granisetron

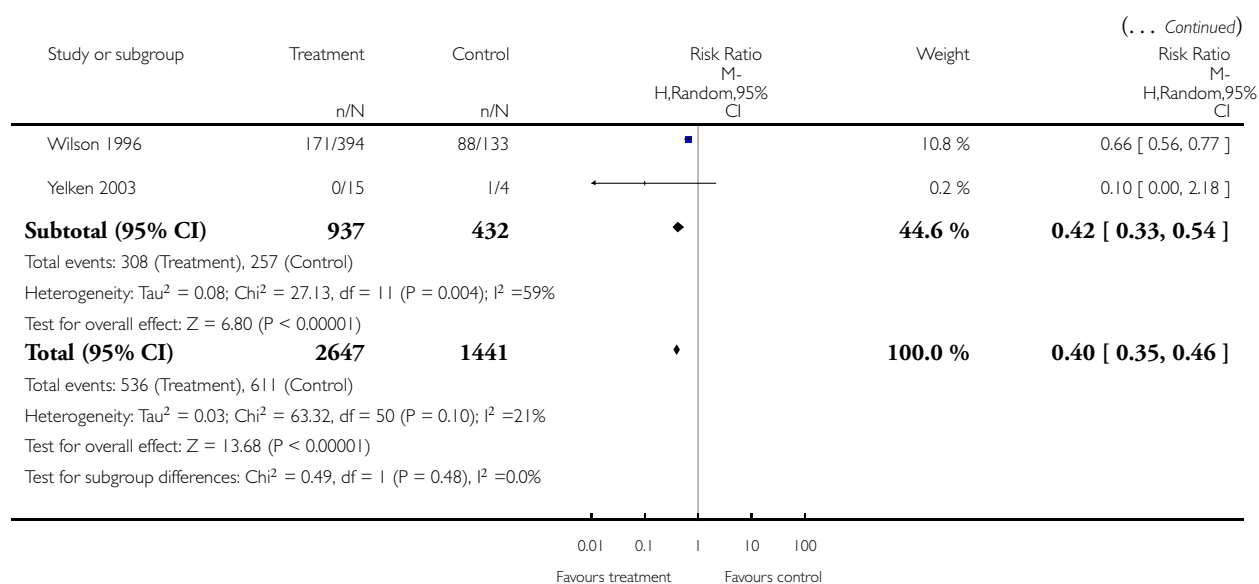


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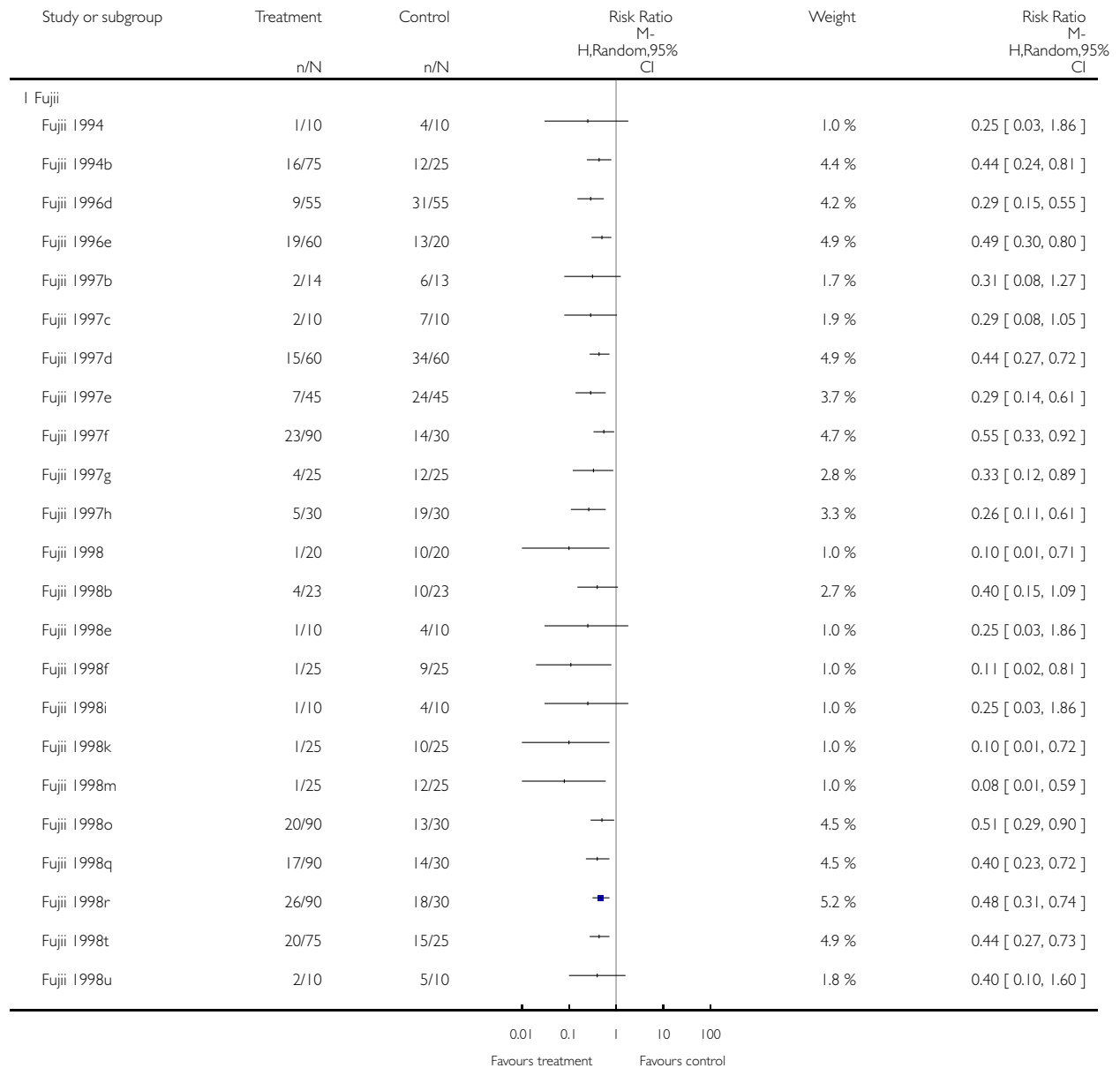


### Analysis 13.3. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 3 Nausea or Vomiting: granisetron.

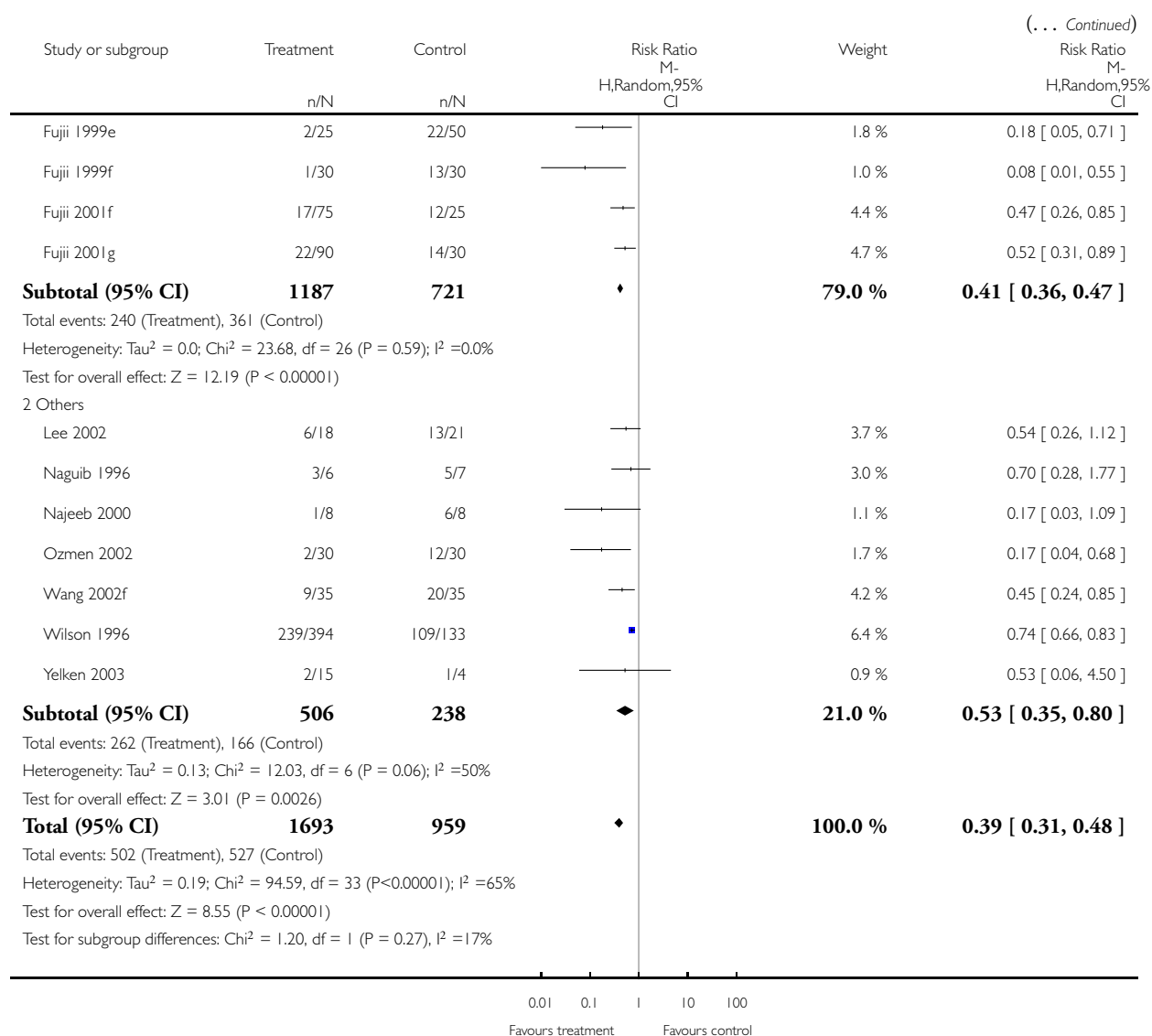
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 3 Nausea or Vomiting: granisetron



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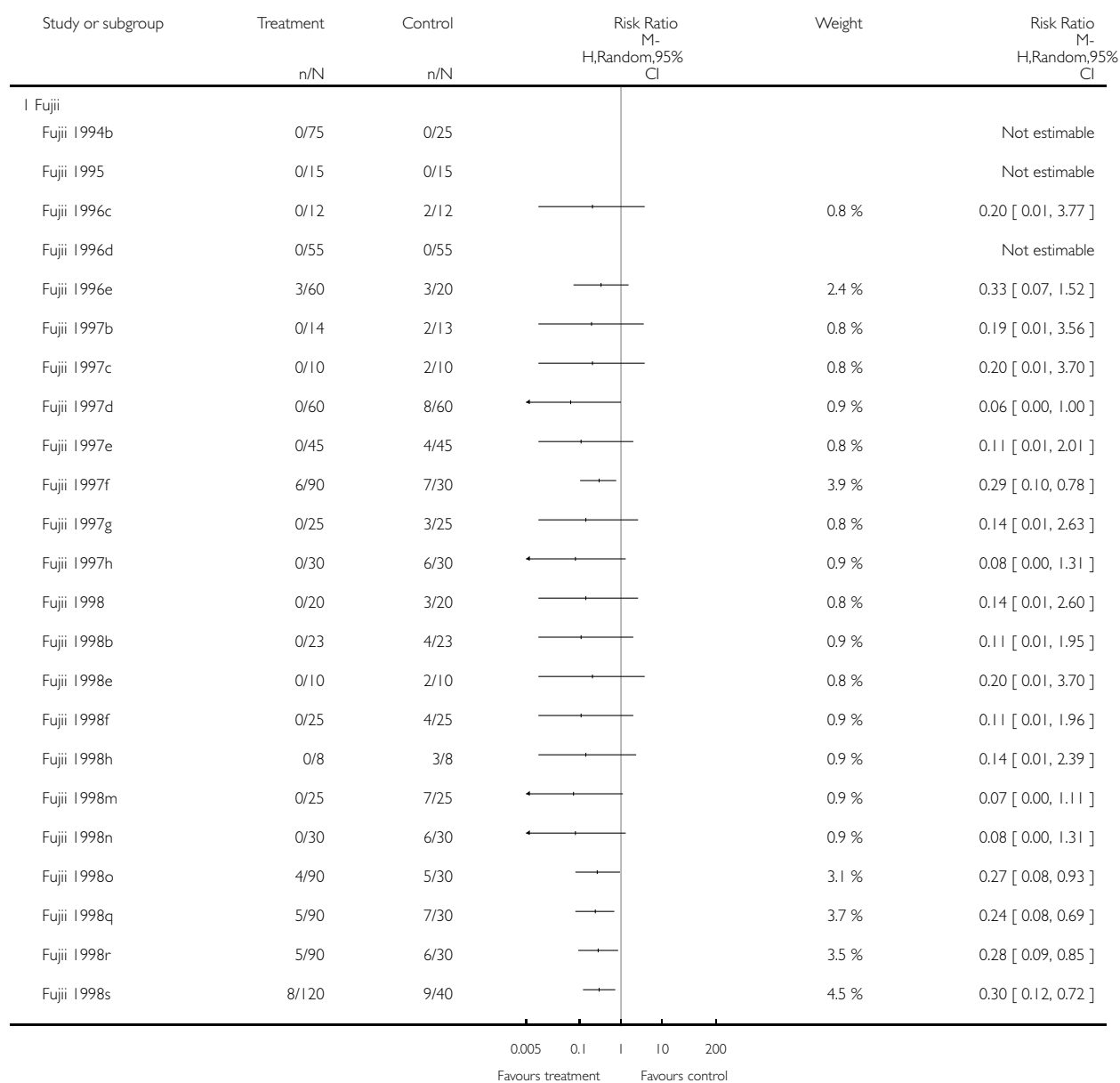


### Analysis 13.4. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 4 Rescue antiemetic: granisetron.

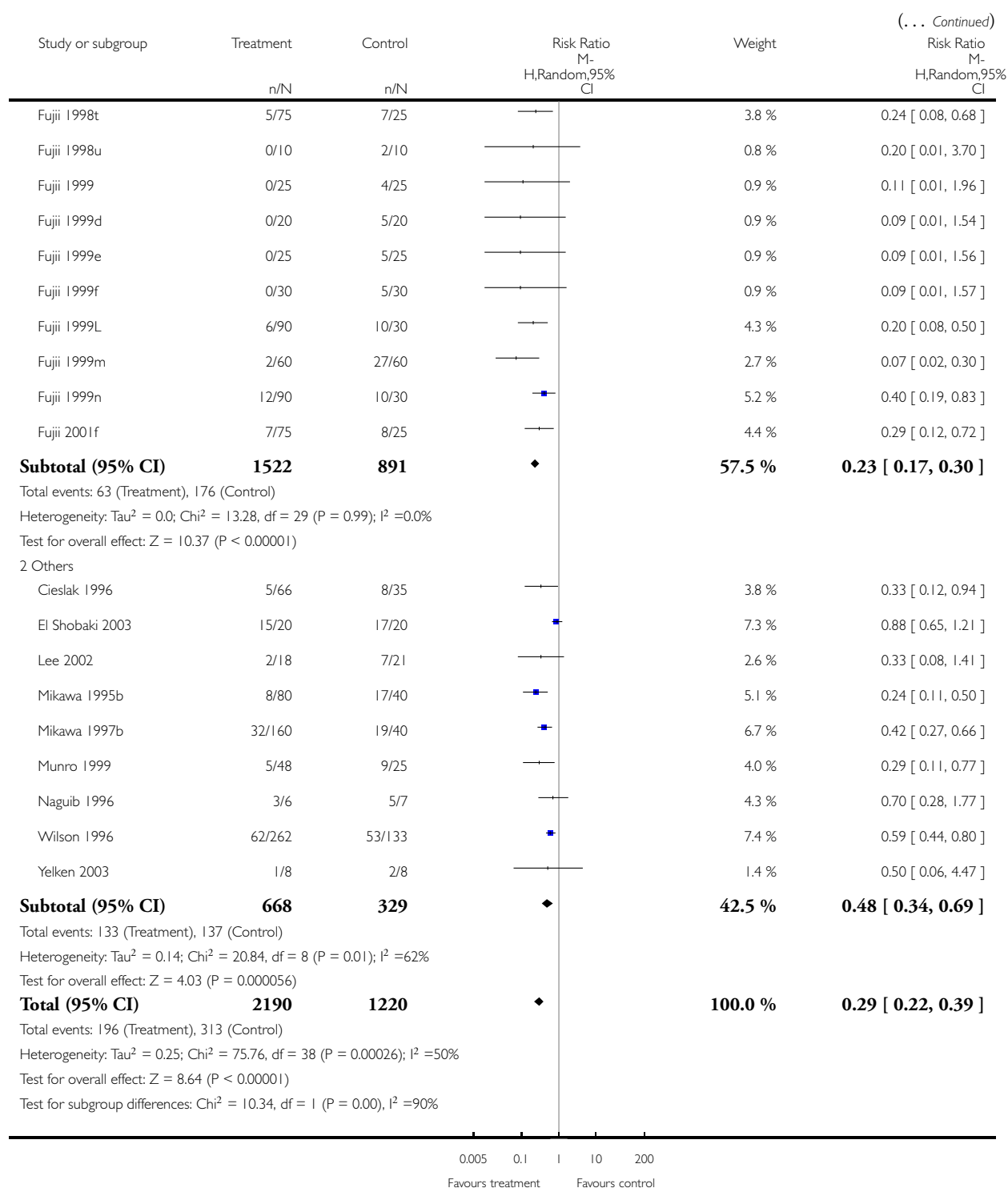
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 4 Rescue antiemetic: granisetron



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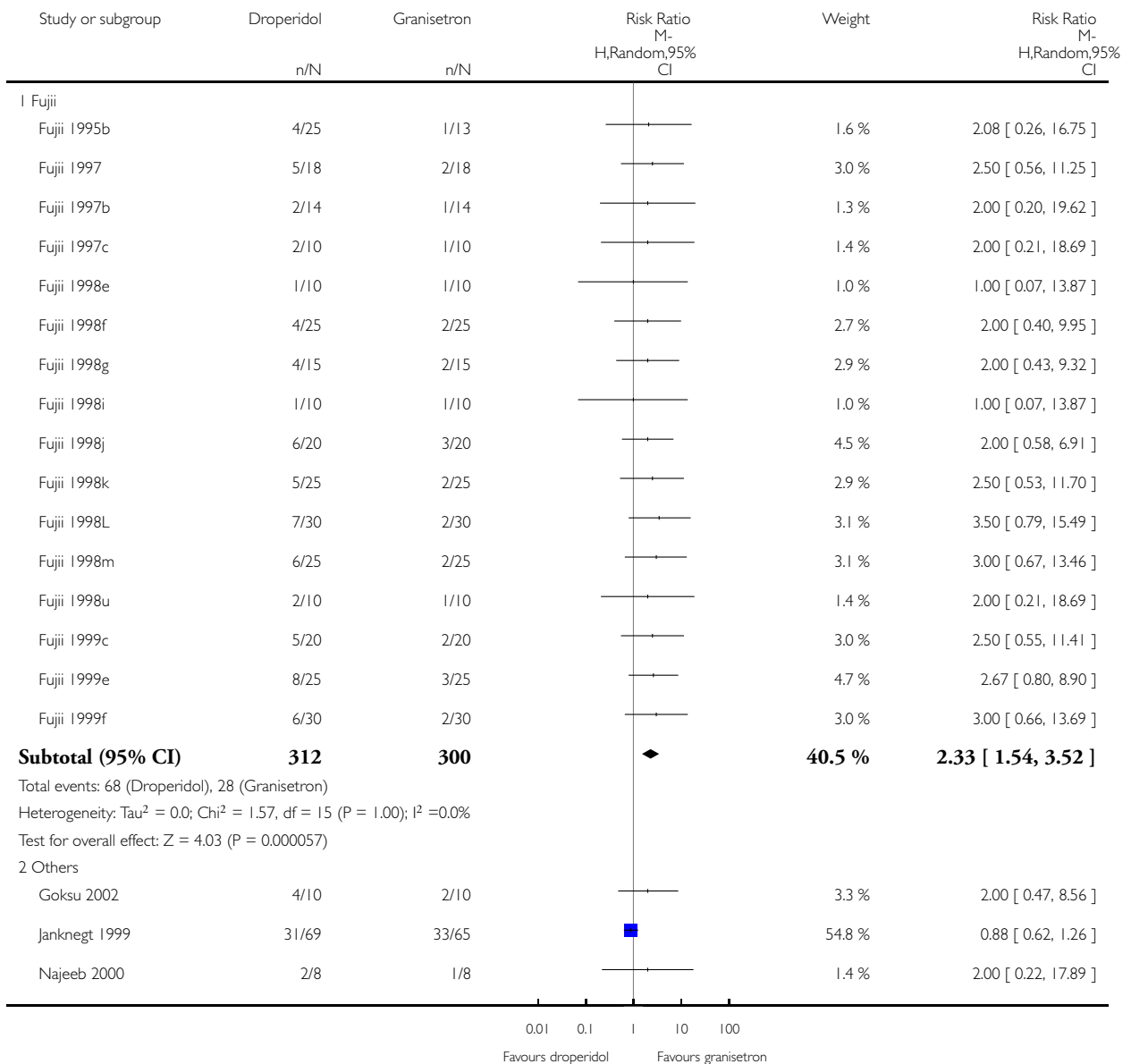


### Analysis 13.5. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 5 Nausea: droperidol versus granisetron.

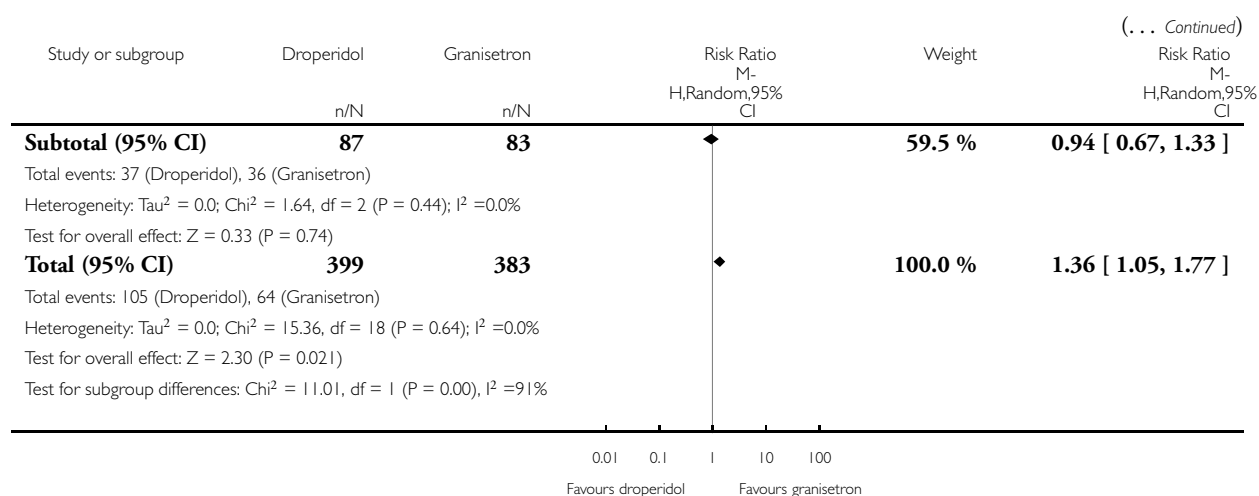
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 5 Nausea: droperidol versus granisetron



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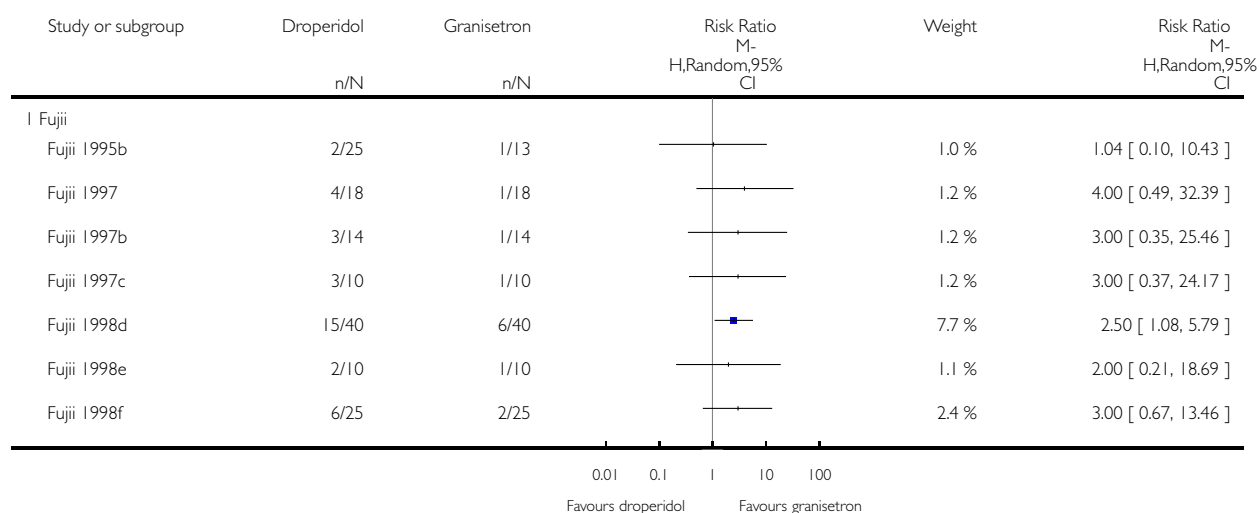


### Analysis 13.6. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 6 Vomiting: droperidol versus granisetron.

Review: Drugs for preventing postoperative nausea and vomiting

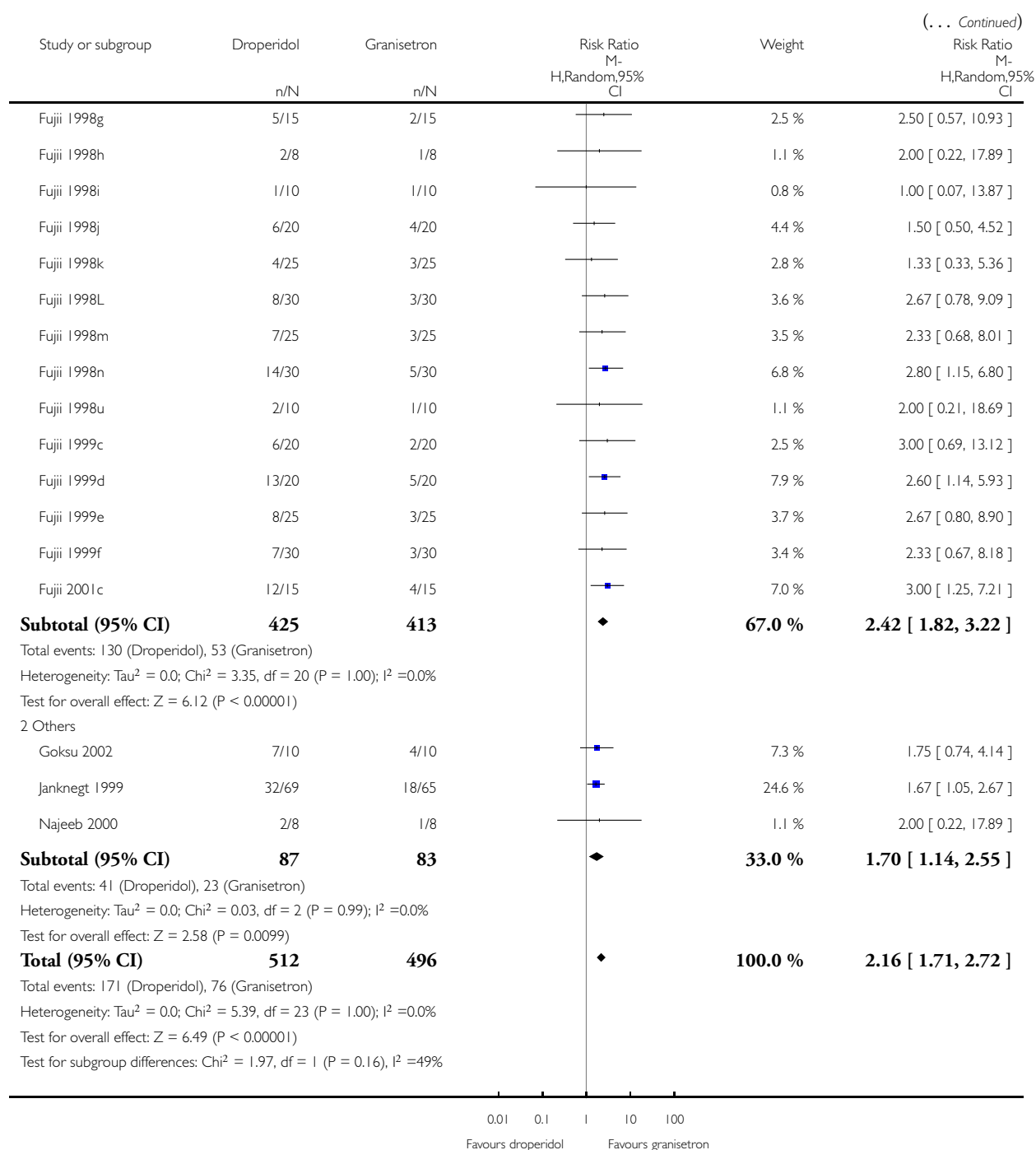
Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 6 Vomiting: droperidol versus granisetron



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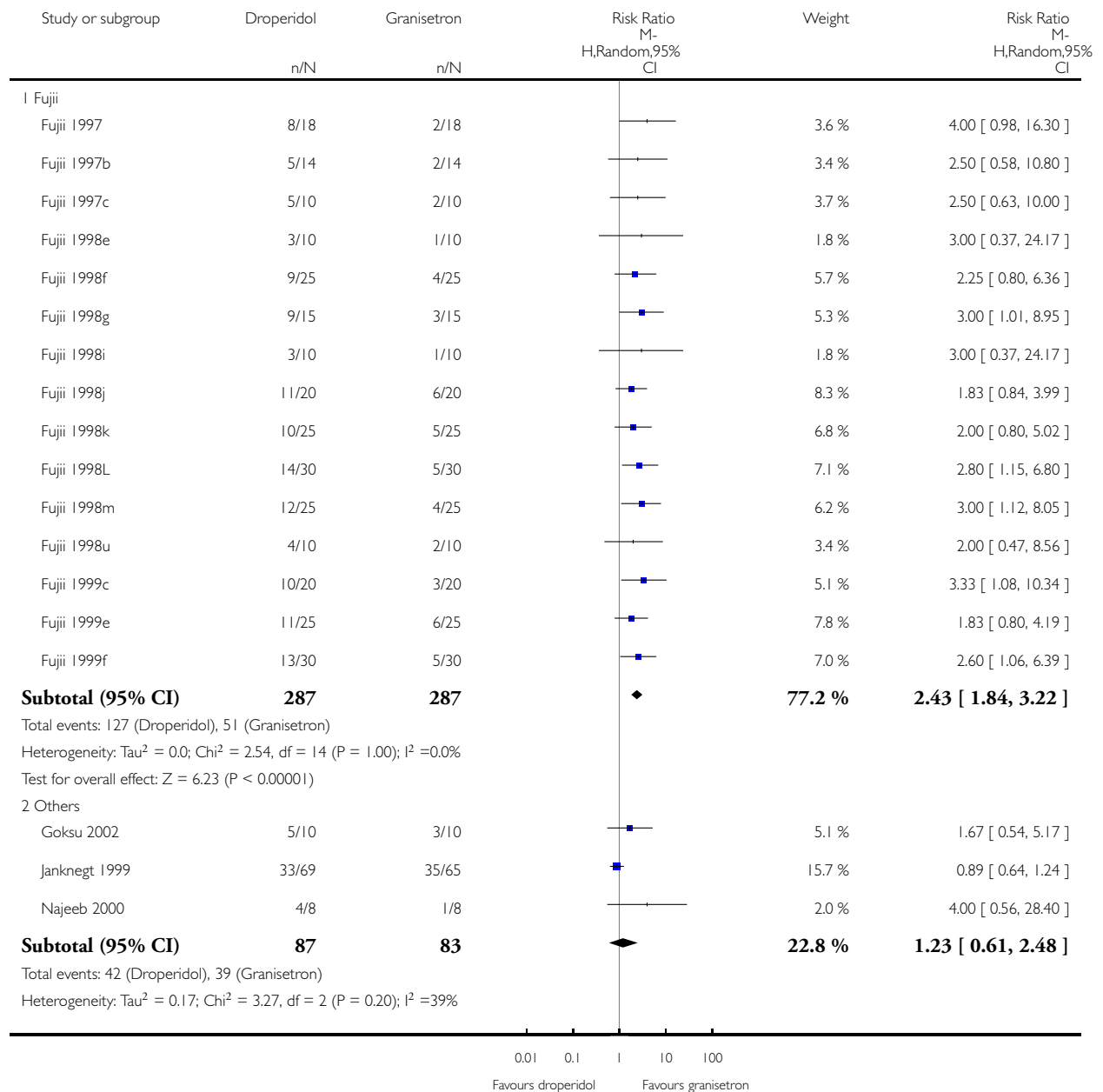


### Analysis 13.7. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 7 Nausea or Vomiting: droperidol versus granisetron.

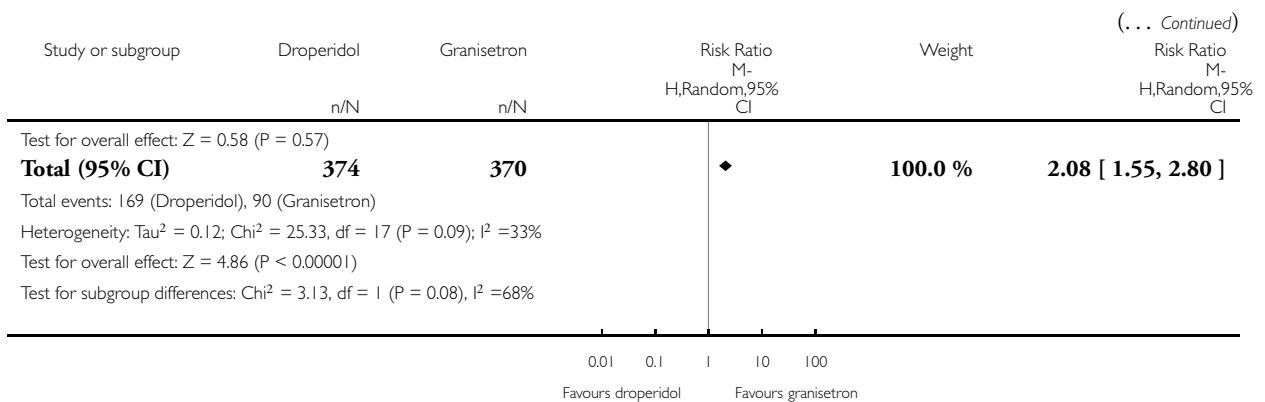
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 7 Nausea or Vomiting: droperidol versus granisetron



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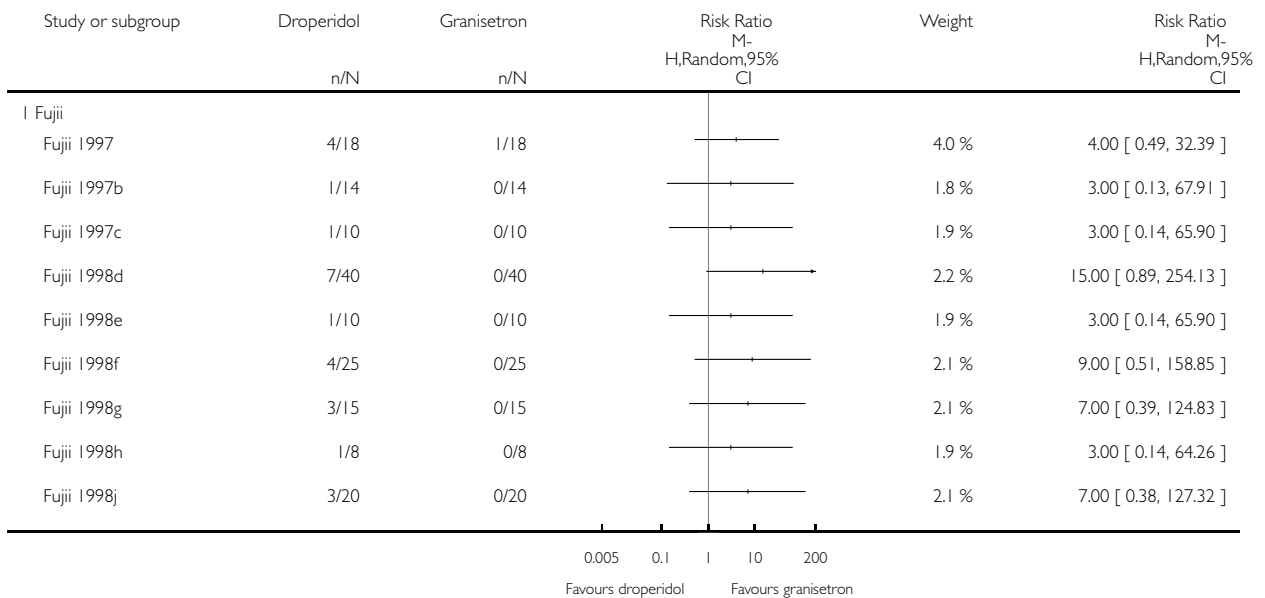


### Analysis 13.8. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 8 Rescue antiemetic: droperidol versus granisetron.

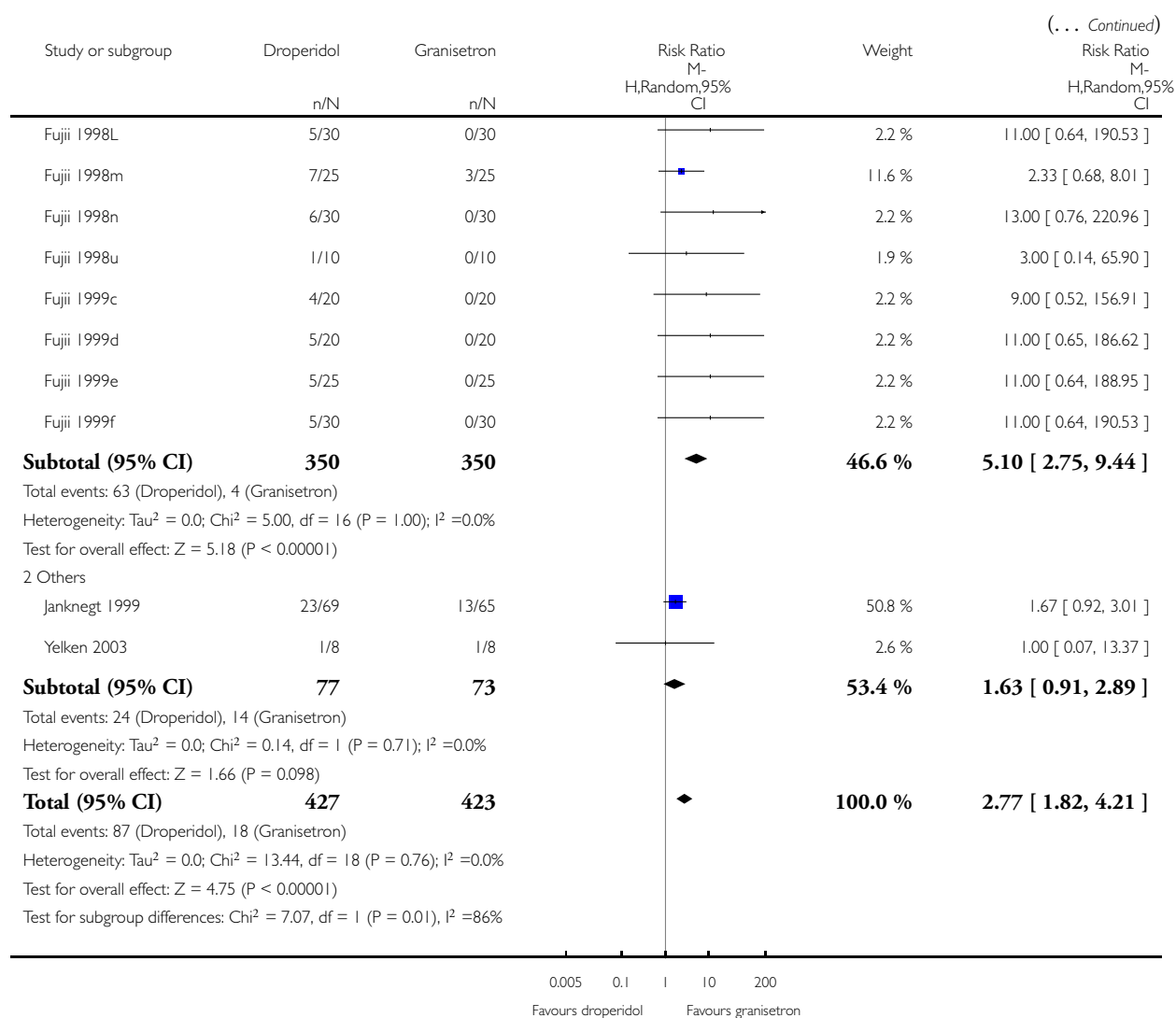
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

Outcome: 8 Rescue antiemetic: droperidol versus granisetron



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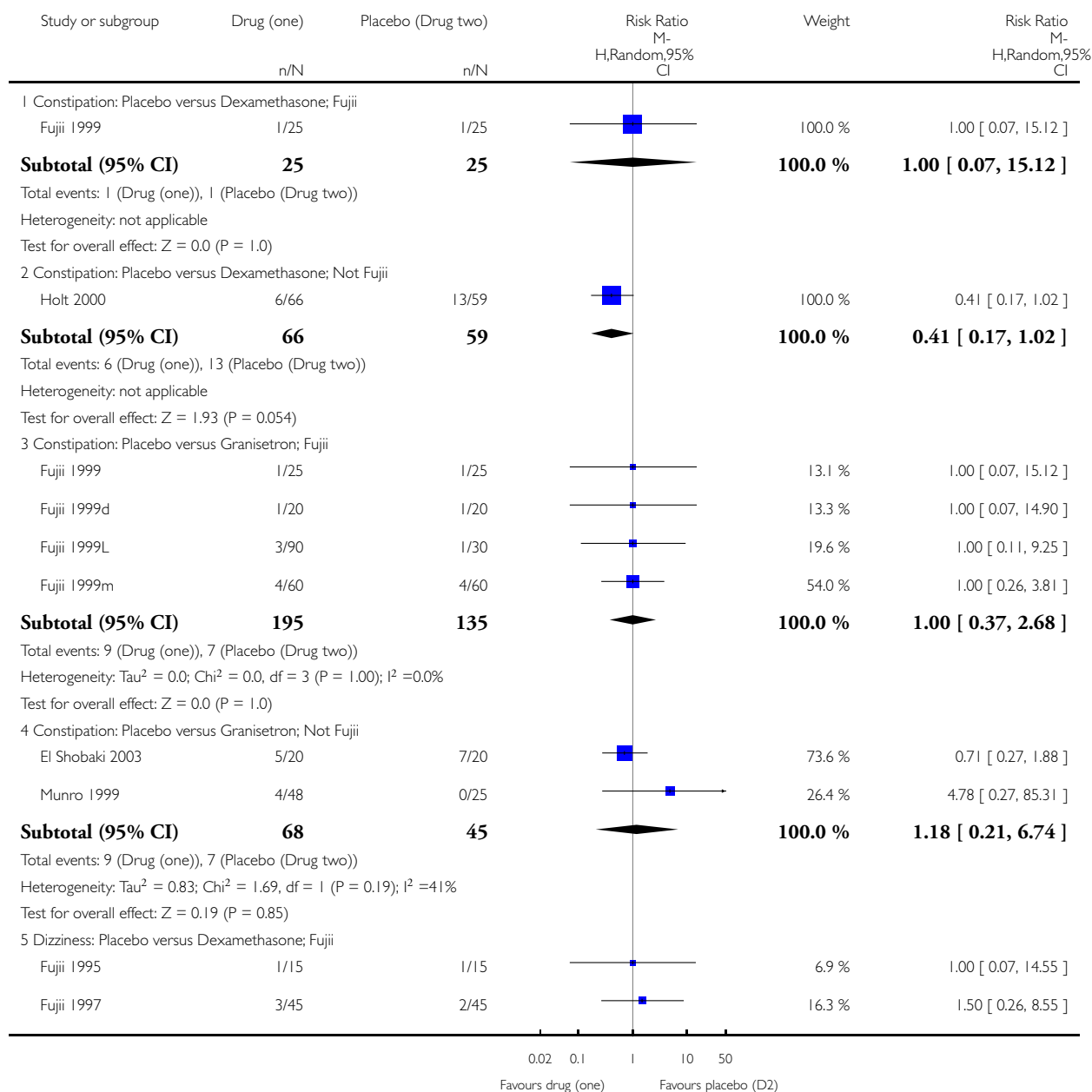


### Analysis 13.9. Comparison 13 POSTHOC ANALYSIS: Fujii et al versus other authors, Outcome 9 Side effects.

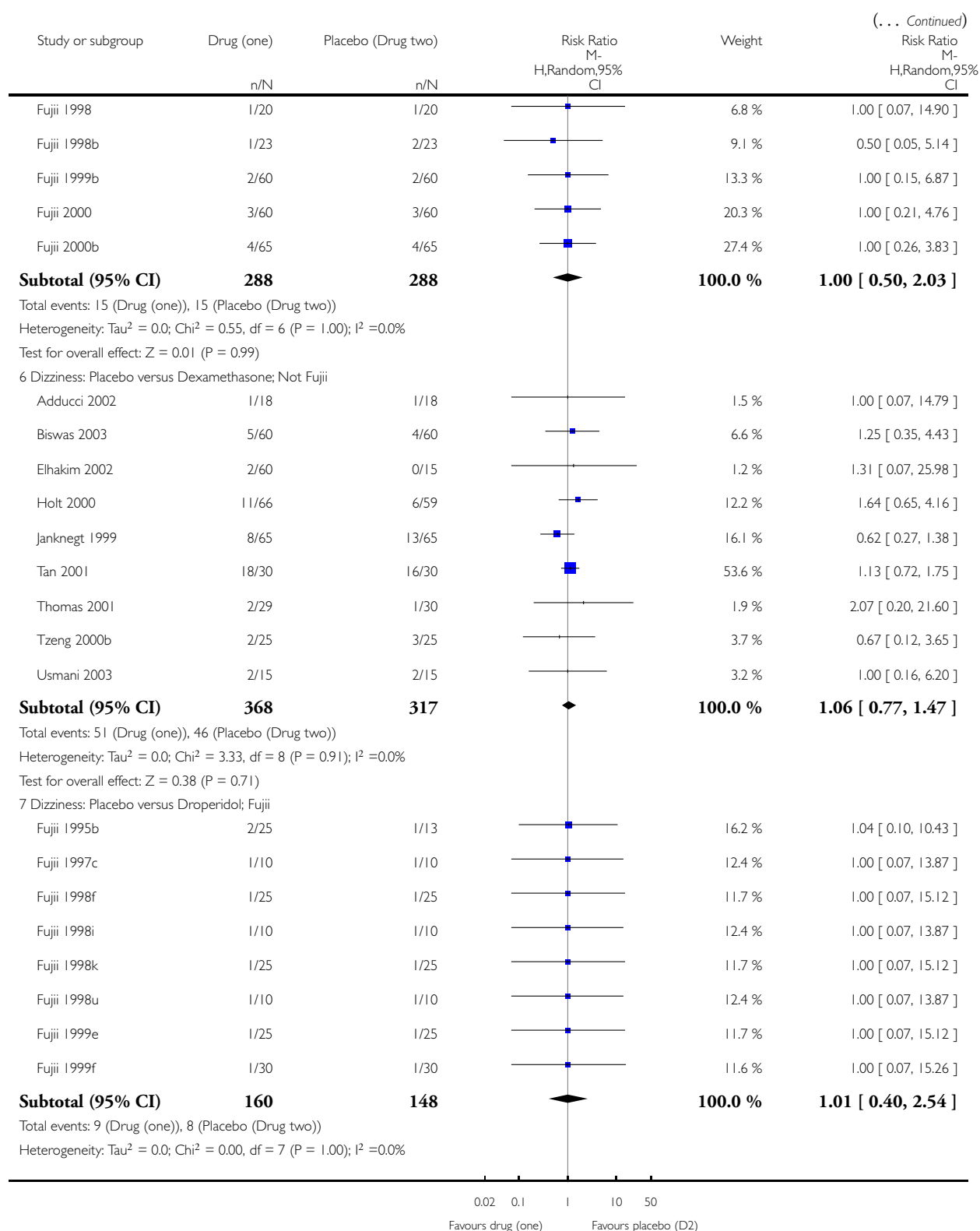
Review: Drugs for preventing postoperative nausea and vomiting

Comparison: 13 POSTHOC ANALYSIS: Fujii et al versus other authors

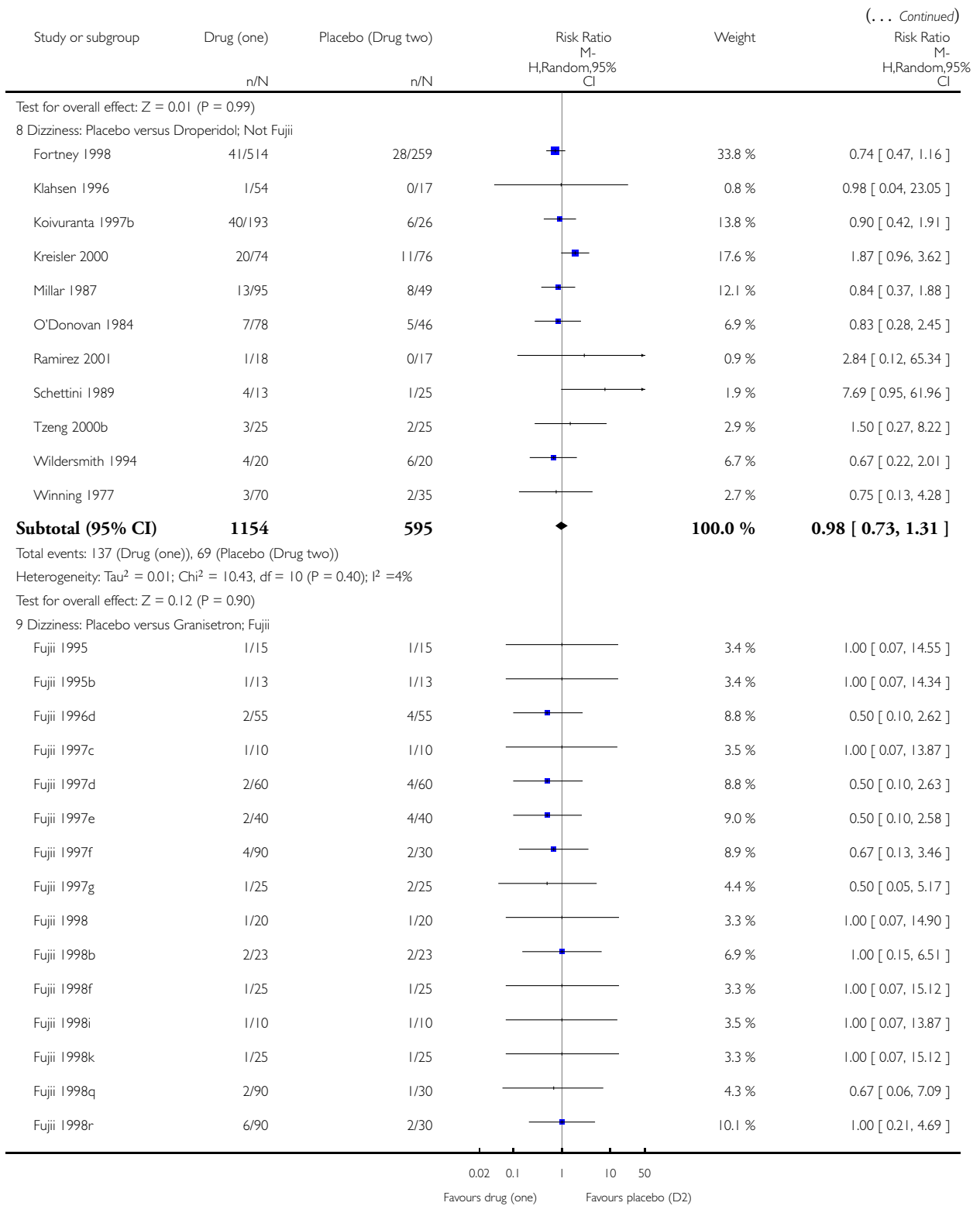
Outcome: 9 Side effects

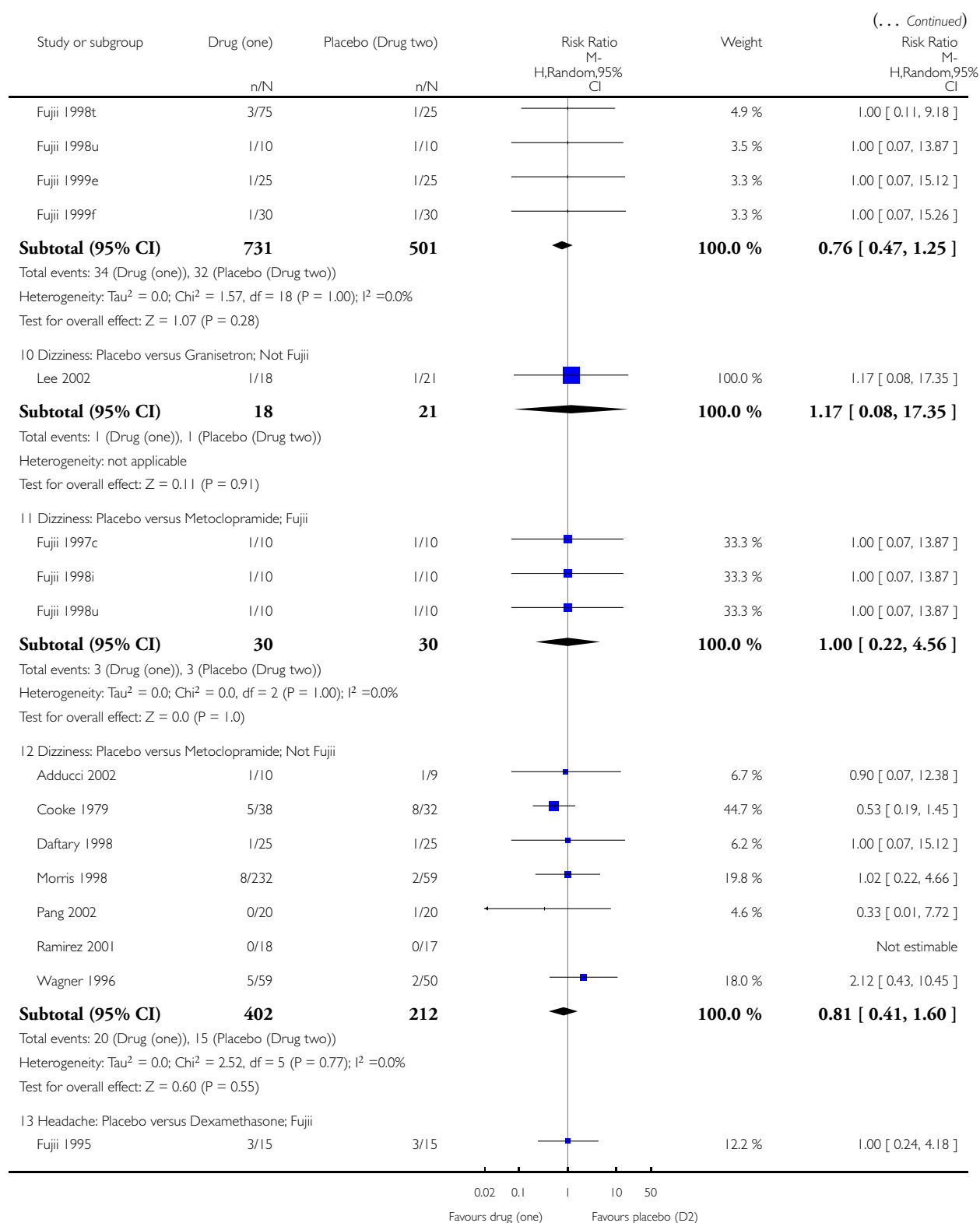


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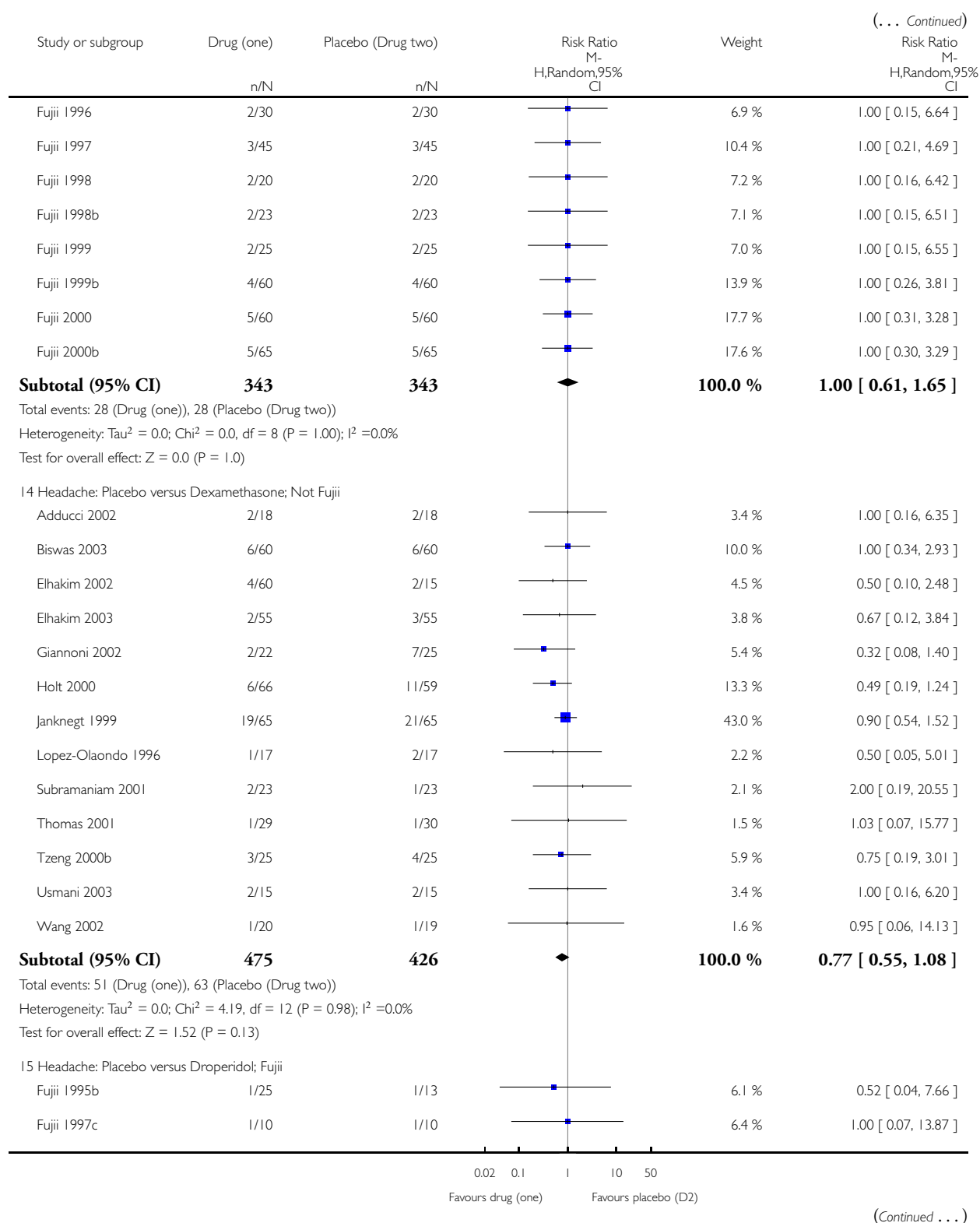


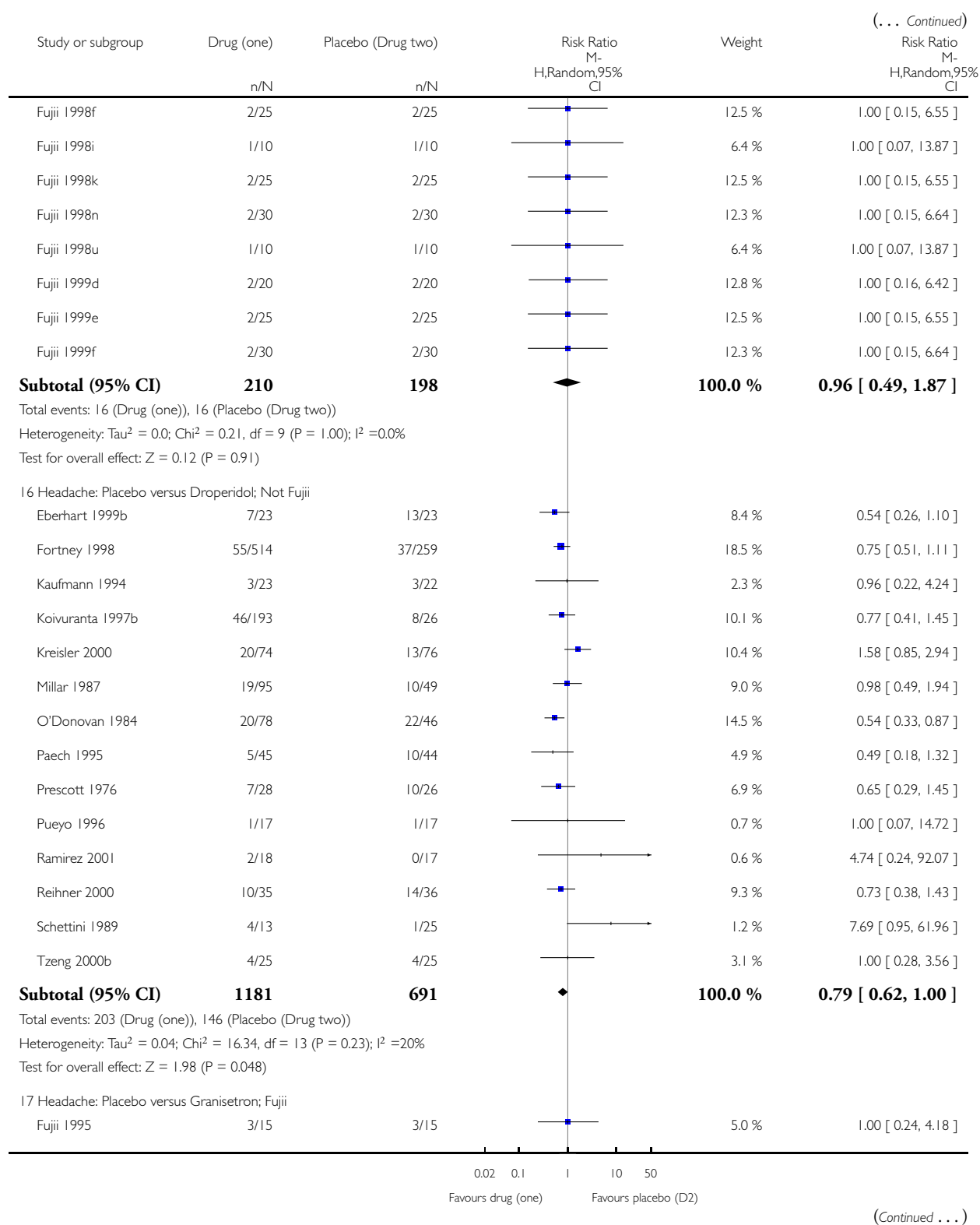
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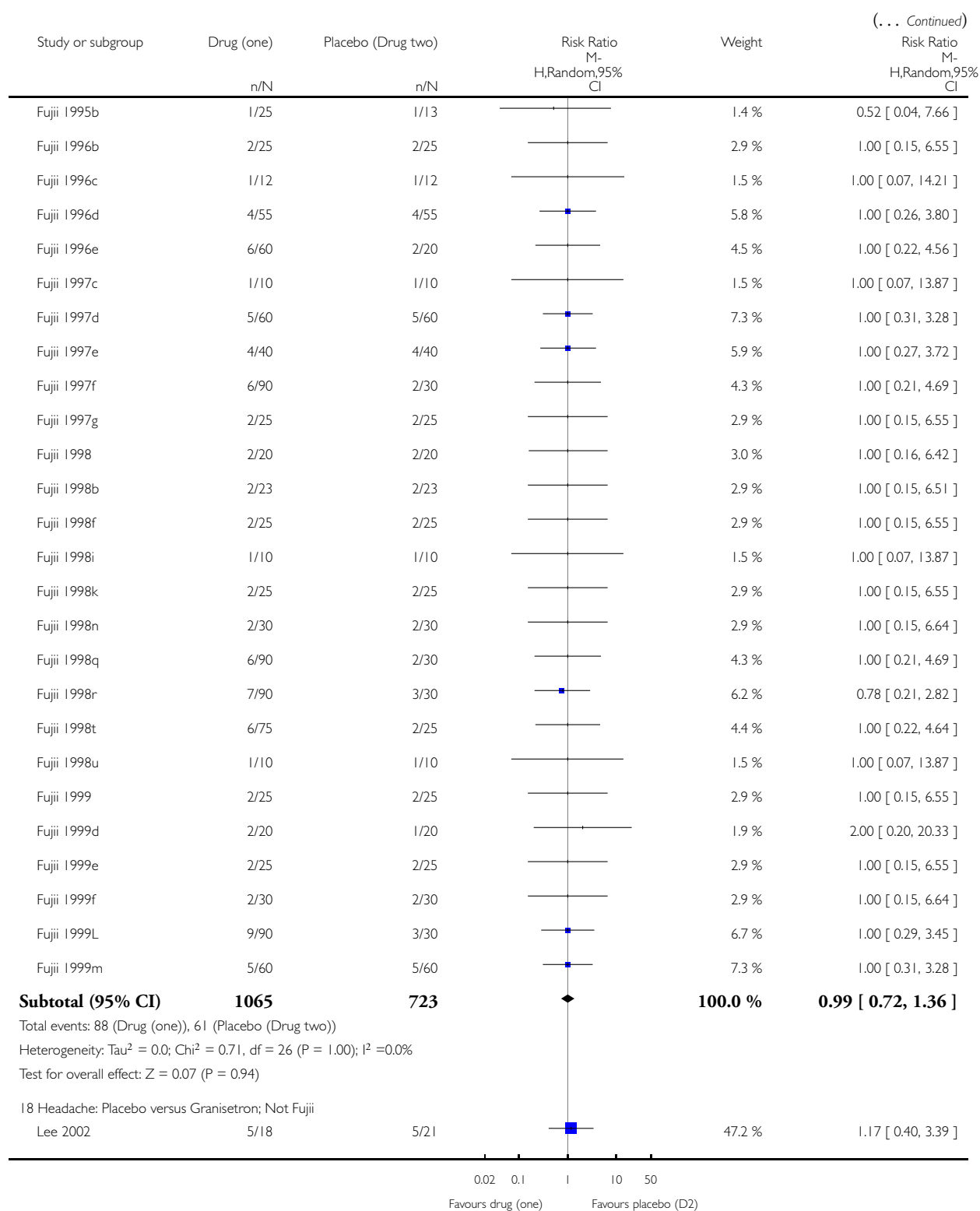


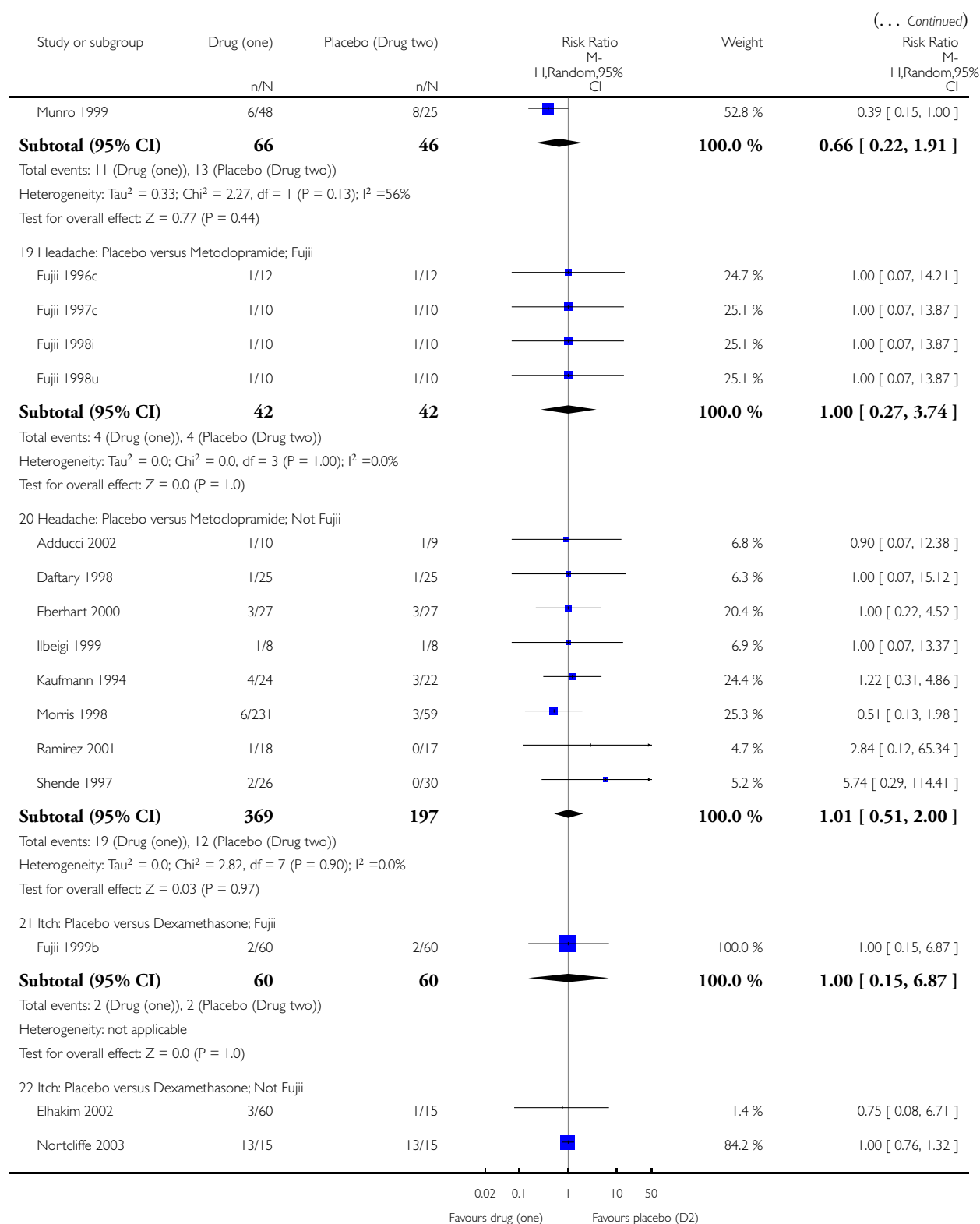


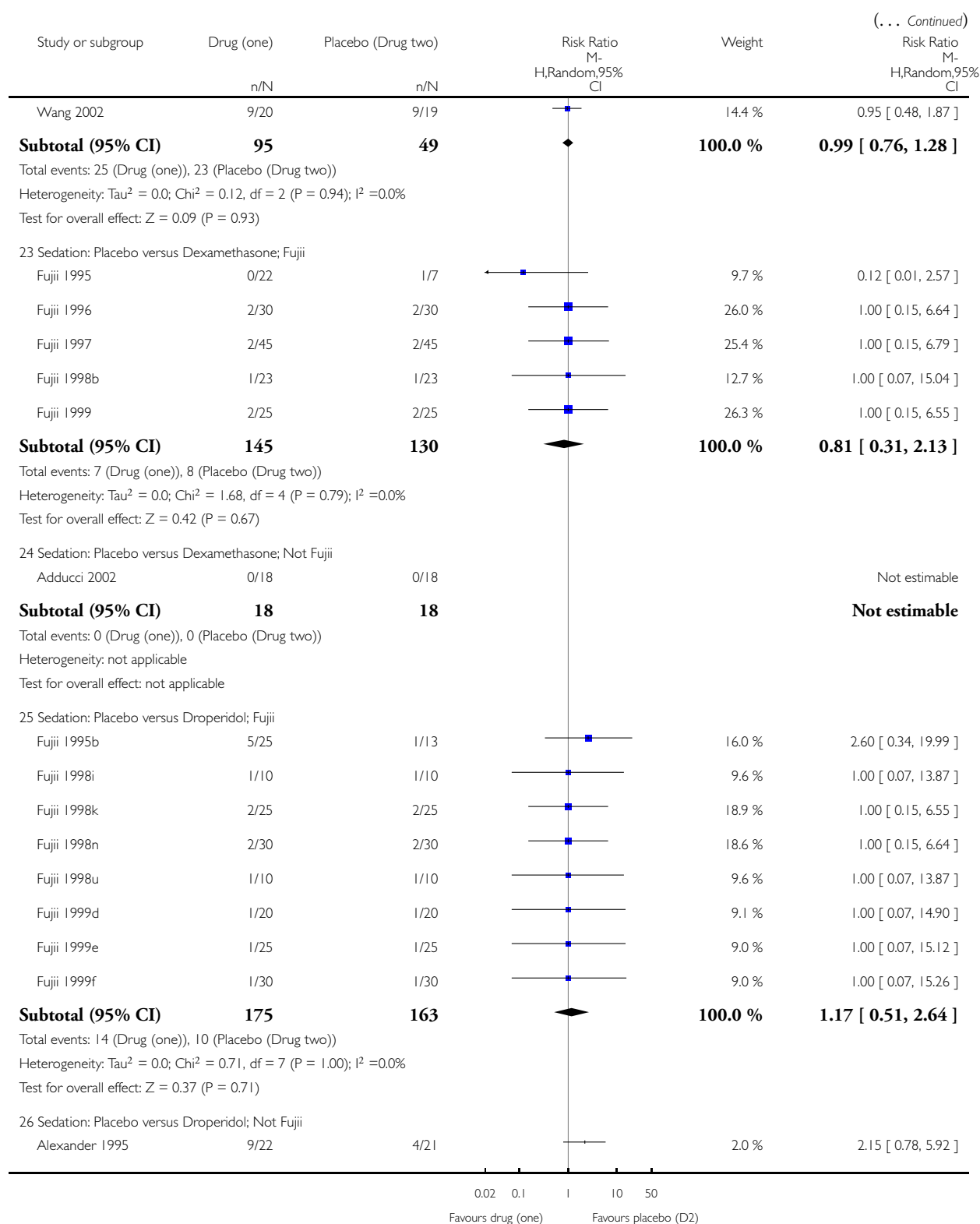


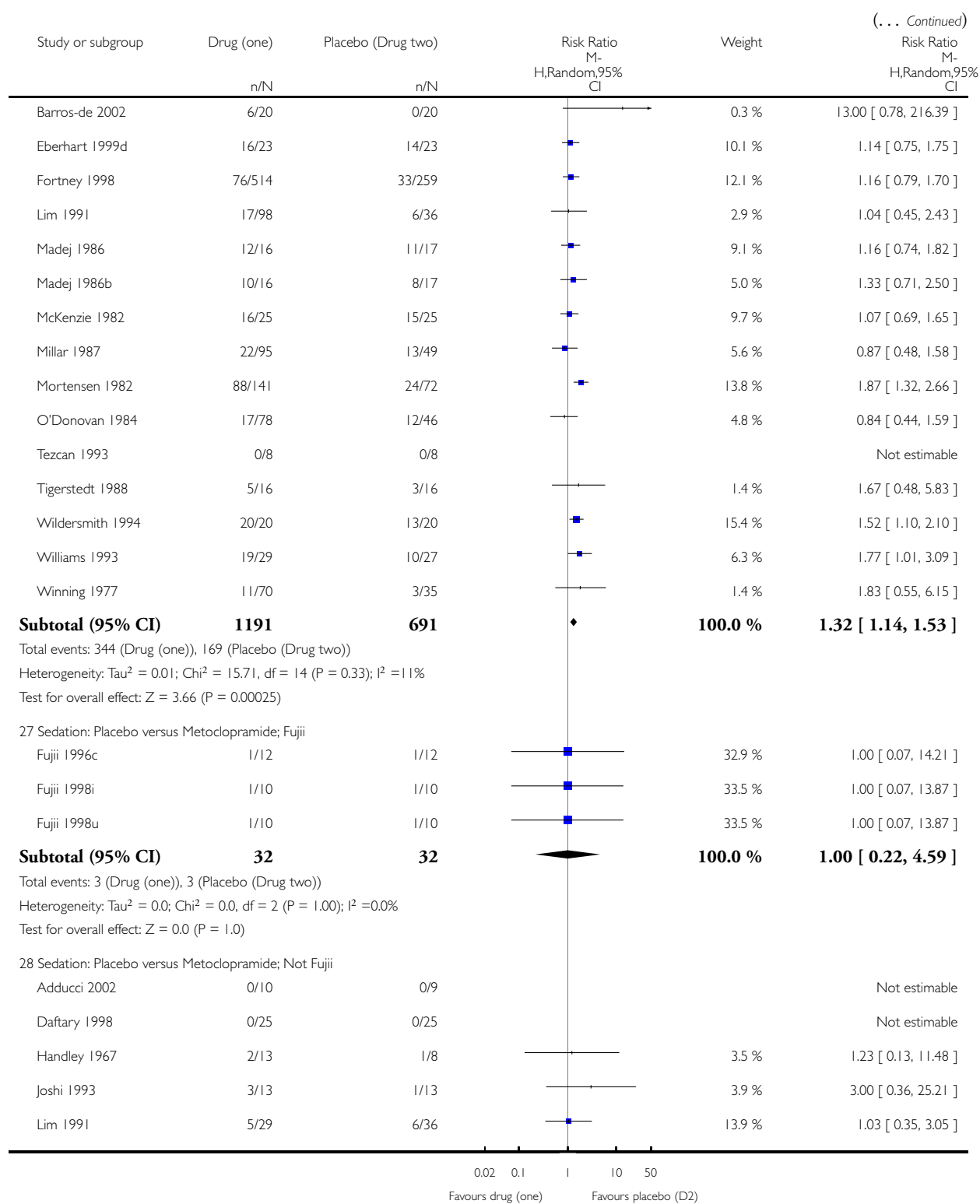


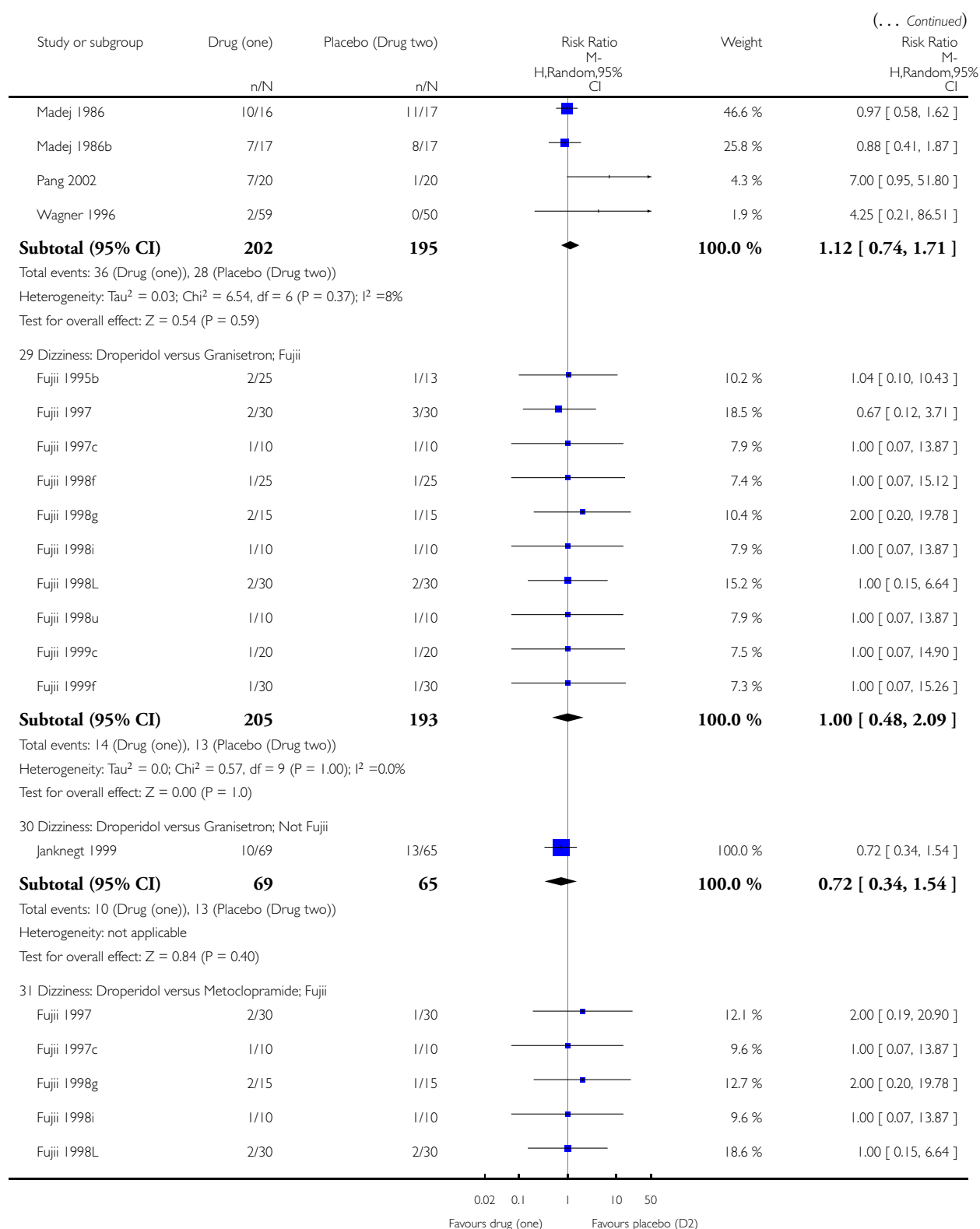




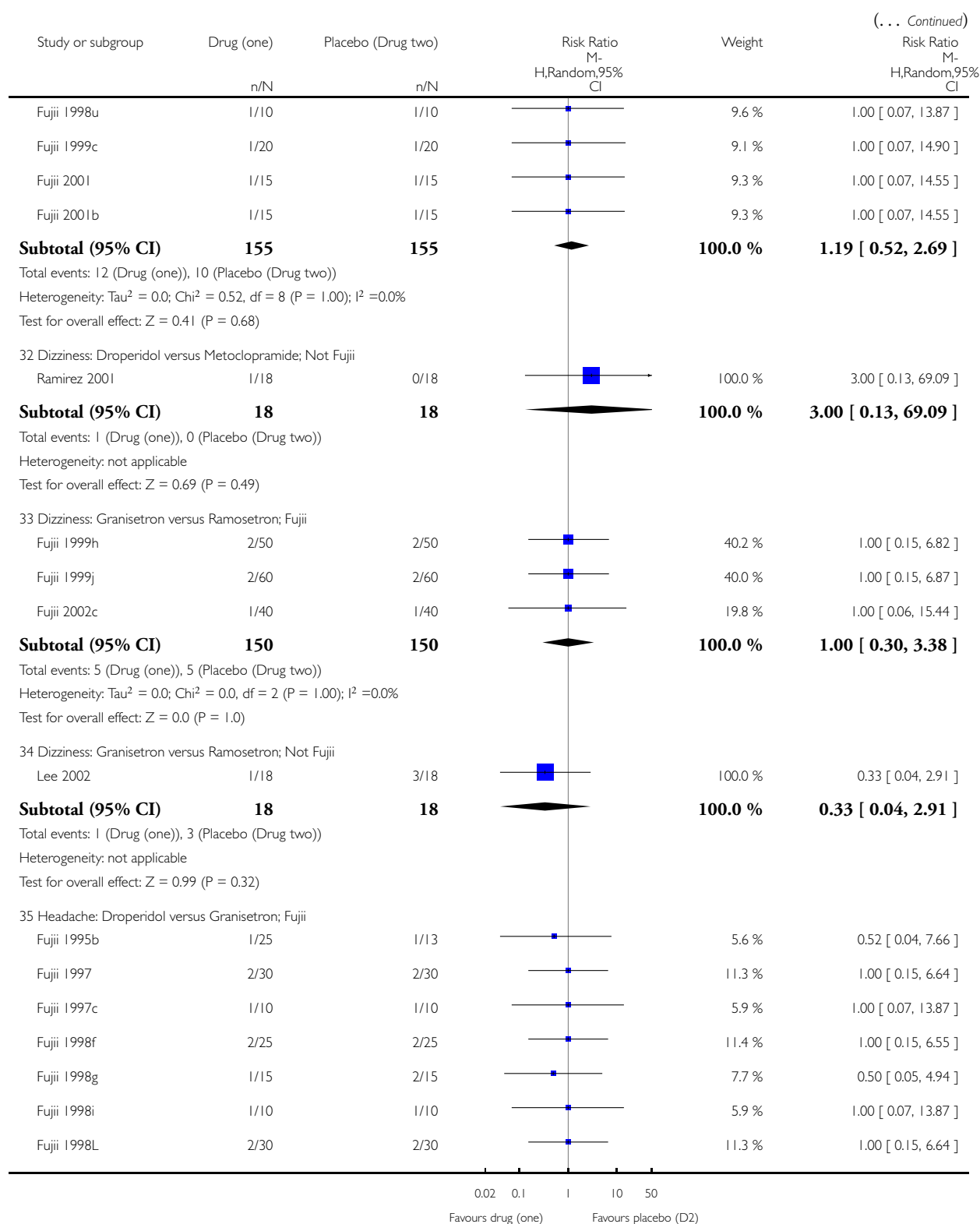




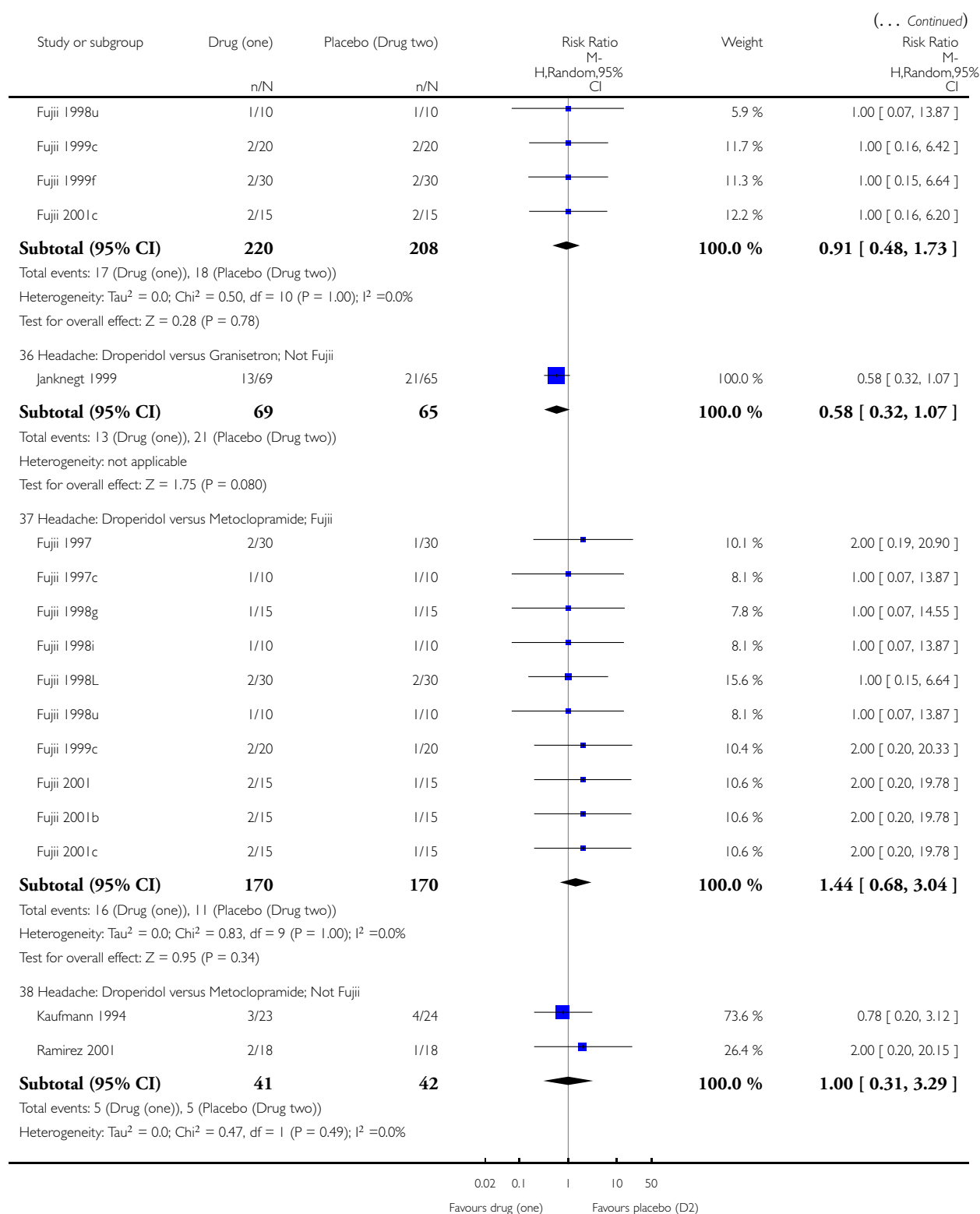


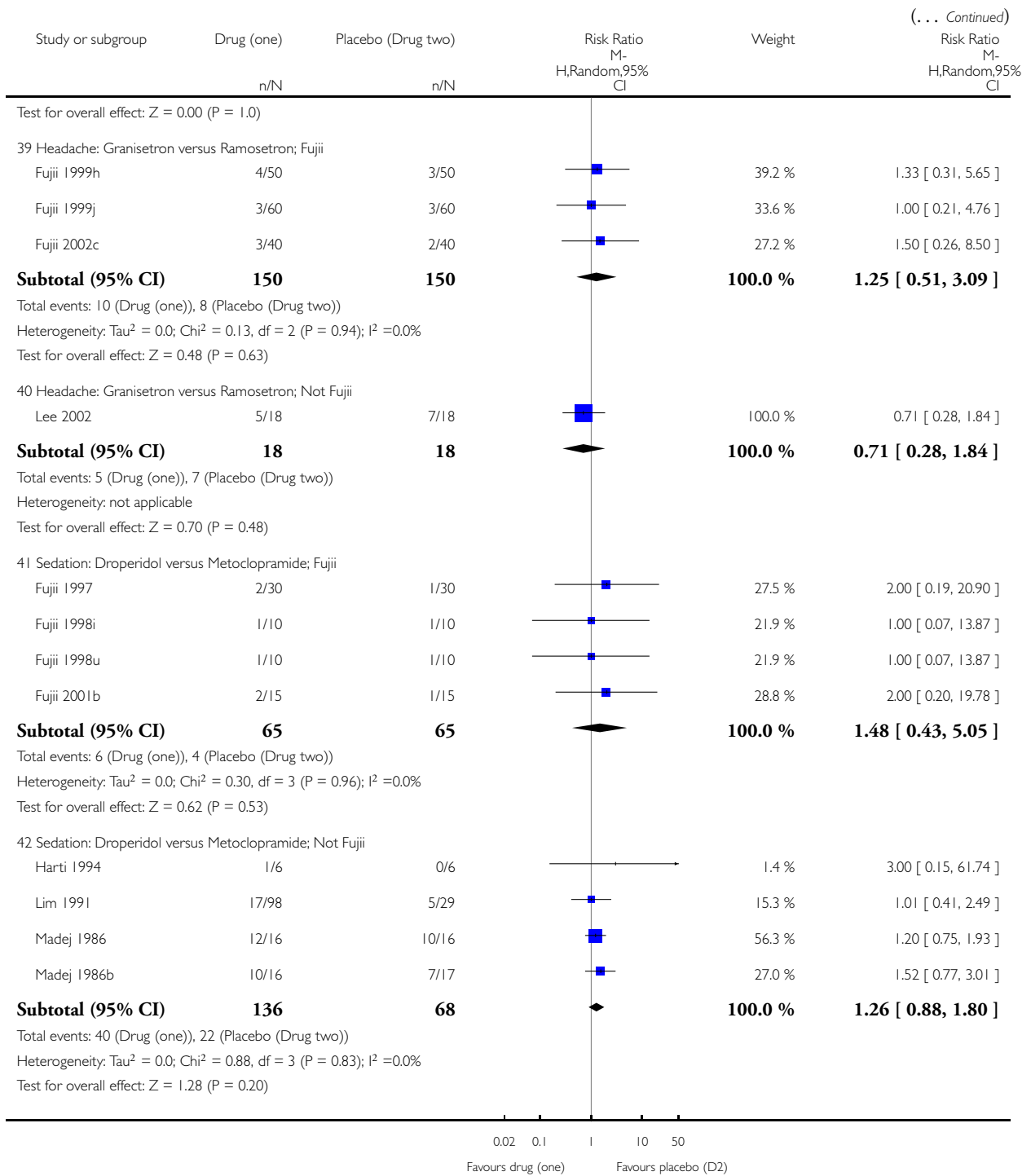


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## ADDITIONAL TABLES

Table 1. Turning relative risk into numbers needed to treat

Relative Risk	Control incidence .8	Control incidence .7	Control incidence .6	Control incidence .5	Control incidence .4	Control incidence .3	Control incidence .2	Control incidence .1
Relative risk 0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Absolute risk AR	0.77	0.67	0.58	0.48	0.384	0.288	0.192	0.096
reduction NNT	0.03	0.03	0.02	0.02	0.016	0.012	0.008	0.004
	31	36	42	50	63	83	125	250
Relative risk 0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Absolute risk AR	0.72	0.63	0.54	0.45	0.364	0.270	0.180	0.090
reduction NNT	0.08	0.07	0.06	0.05	0.040	0.030	0.020	0.010
	13	14	17	20	25	33	50	100
Relative risk 0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Absolute risk AR	0.69	0.60	0.52	0.43	0.344	0.258	0.172	0.086
reduction NNT	0.11	0.10	0.08	0.07	0.056	0.042	0.028	0.014
	9	10	12	14	18	24	36	71
Relative risk 0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Absolute risk AR	0.64	0.56	0.48	0.40	0.320	0.240	0.160	0.080
reduction NNT	0.16	0.14	0.12	0.10	0.080	0.060	0.040	0.020
	6	7	8	10	13	17	25	50
Relative risk 0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Absolute risk AR	0.59	0.52	0.44	0.37	0.296	0.222	0.148	0.074
reduction NNT	0.21	0.18	0.16	0.13	0.104	0.078	0.052	0.026
	5	5	6	8	10	13	19	38
Relative risk 0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Absolute risk AR	0.56	0.49	0.42	0.35	0.280	0.210	0.140	0.070
reduction	0.24	0.21	0.18	0.15	0.120	0.090	0.060	0.030
	4	5	6	7	8	11	17	33

**Table 1. Turning relative risk into numbers needed to treat** (Continued)

NNT								
Relative risk	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
0.64	0.51	0.45	0.38	0.32	0.256	0.192	0.128	0.064
Absolute risk	0.29	0.25	0.22	0.18	0.144	0.108	0.072	0.036
AR	3	4	5	6	7	9	14	28
reduction								
NNT								
Relative risk	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
0.56	0.45	0.39	0.34	0.28	0.224	0.168	0.112	0.056
Absolute risk	0.35	0.31	0.26	0.22	0.176	0.132	0.088	0.044
AR	3	3	4	5	6	8	11	23
reduction								
NNT								
Relative risk	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
0.50	0.40	0.35	0.30	0.25	0.200	0.150	0.100	0.050
Absolute risk	0.40	0.35	0.30	0.25	0.200	0.150	0.100	0.050
AR	3	3	3	4	5	7	10	20
reduction								
NNT								

**Table 2. Placebo versus Drug**

Drug	Nausea	Vomiting	Nausea or Vomiting	Rescue antiemetic
	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)
Alizapride	0.65 (0.46 - 0.92)	0.49 (0.29 - 0.84)	0.68 (0.39 - 1.19)	no result
Atropine	no result	1.11 (0.78 - 1.58)	0.91 (0.36 - 2.31)	no result
Cimetidine	0.66 (0.16 - 2.68)	0.47 (0.17 - 1.32)	no result	no result
Clonidine	0.69 (0.46 - 1.05)	0.75 (0.53 - 1.06)	0.73 (0.52 - 1.02)	1.09 (0.94 - 1.27)
Cyclizine	0.65 (0.47 - 0.90)	0.57 (0.43 - 0.75)	0.68 (0.58 - 0.80)	0.27 (0.14 - 0.62)
Dexamethasone	0.57 (0.48 - 0.69)	0.51 (0.46 - 0.57)	0.49 (0.44 - 0.54)	0.50 (0.42 - 0.59)
Diazepam	0.50 (0.25 - 0.99)	0.85 (0.58 - 1.24)	1.04 (0.51 - 2.10)	no result
Dimenhydrinate	0.72 (0.47 - 1.13)	0.61 (0.46 - 0.81)	0.71 (0.59 - 0.86)	0.62(0.33 - 1.15)

**Table 2. Placebo versus Drug** (Continued)

Dixyrazine	no result	no result	0.83 (0.67 - 1.02)	0.49 (0.30 - 0.80)
Dolasetron	0.82 (0.76 - 0.90)	0.63 (0.51 - 0.76)	0.72 (0.62 - 0.83)	0.67 (0.57 to 0.79)
Domperidone	0.62 (0.20 - 1.94)	0.80 (0.52 - 1.23)	0.71 (0.44 - 1.13)	no result
Droperidol	0.65 (0.60 - 0.71)	0.65 (0.61 - 0.70)	0.62 (0.58 - 0.67)	0.53 (0.47 - 0.60)
Ephedrine	0.50 (0.20 - 1.23)	0.91 (0.64 - 1.27)	0.79 (0.55 - 1.15)	0.82 (0.41 - 1.66)
Ginger	0.87 (0.62 - 1.23)	1.04 (0.66 - 1.64)	1.02 (0.73 - 1.42)	0.40 (0.18 - 0.88)
Glycopyrrolate	no result	no result	0.67 (0.35 - 1.29)	0.52 (0.18 - 1.48)
Granisetron	0.53 (0.45 to 0.63)	0.40 (0.35 - 0.46)	0.39 (0.31 - 0.48)	0.29 (0.22 - 0.39)
Hyoscine	0.63 (0.47 - 0.83)	0.66 (0.56 - 0.77)	0.71 (0.56 - 0.90)	0.92 (0.69 - 1.21)
Lorazepam	0.55 (0.33 - 0.93)	0.61(0.33 - 1.13)	no result	no result
Magnesium	no result	no result	0.79 (0.36 - 1.72)	no result
Methylnaltrexone	no result	0.64 (0.30 - 1.33)	no result	0.63 (0.33 - 1.21)
Metoclopramide	0.82 (0.76 - 0.88)	0.75 (0.70 - 0.81)	0.76 (0.70 - 0.82)	0.78 (0.69 - 0.88)
Midazolam	0.90 (0.64 - 1.28)	0.73 (0.56 - 0.95)	1.44 (0.52 - 3.94)	0.61 (0.38 - 0.98)
Neostigmine	2.73 (1.15 - 6.48)	3.87 (0.79 - 19.0)	3.19 (1.71 - 5.93)	1.39 (0.55 - 3.50)
Ondansetron	0.68 (0.63 - 0.74)	0.55 (0.50 - 0.59)	0.56 (0.50 - 0.63)	0.55 (0.49 - 0.61)
Perphenazine	1.15 (0.42 - 3.12)	0.70 (0.51 - 0.96)	0.71 (0.43 - 1.15)	no result
Prochlorperazine	0.73 (0.56 - 0.96)	0.68 (0.52 - 0.89)	0.68 (0.55 - 0.86)	0.49 (0.22 - 1.08)
Promethazine	no result	0.76 (0.40 - 1.45)	0.46 (0.25 - 0.82)	no result
Ramosetron	0.62 (0.40 - 0.96)	0.42 (0.28 - 0.63)	0.51 (0.39 - 0.68)	0.38 (0.15 - 0.99)
Tropisetron	0.77 (0.71 - 0.84)	0.59 (0.50 - 0.69)	0.70 (0.61 - 0.81)	0.62 (0.53 - 0.72)

**Table 3. Effective drug versus effective drug**

Comparison	Nausea	Vomiting	Nausea or Vomiting	Rescue antiemetic	Differences
Drug versus Drug	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	Number of outcomes different
Cyclizine - Dexamethasone	One study	One study	One study	One study	No result
Cyclizine - Dolasetron	No study	No study	No study	No study	No result
Cyclizine - Droperidol	One study	One study	One study	No study	No result
Cyclizine - Granisetron	No study	No study	No study	No study	No result
Cyclizine - Metoclopramide	No study	No study	One study	No study	No result
Cyclizine - Ondansetron	1.00 (0.69 to 1.44)	1.36 (0.58 to 3.18)	1.19 (0.73 to 1.95)	0.66 (0.31 to 1.40)	0/4
Cyclizine - Ramosetron	No study	No study	No study	No study	No result
Cyclizine - Tropisetron	No study	No study	No study	No study	No result
Dexamethasone - Dolasetron	No study	No study	No study	No study	No result
Dexamethasone - Droperidol	1.08 (0.64 to 1.84)	0.96 (0.48 to 1.93)	1.04 (0.72 to 1.52)	1.17 (0.68 to 2.04)	0/4
Dexamethasone - Granisetron	1.65 (0.54 to 5.04)	1.75 (0.85 to 3.62)	No study	8.00 (1.04 to 61.5)	1/3
Dexamethasone - Metoclopramide	0.61 (0.28 to 1.34)	0.45 (0.17 to 1.20)	0.59 (0.35 to 0.99)	0.50 (0.19 to 1.33)	No result
Dexamethasone - Ondansetron	1.27 (0.94 to 1.71)	1.38 (0.84 to 2.26)	1.23 (0.96 to 1.59)	1.19 (0.78 to 1.80)	0/4
Dexamethasone - Ramosetron	No study	No study	No study	No study	No result

**Table 3. Effective drug versus effective drug** (Continued)

Dexamethasone Tropisetron	-	0.41 (0.22 to 0.78)	0.38 (0.13 to 1.11)	0.41 (0.22 to 0.78)	0.44 (0.19 to 1.04)	2/4
Dolasetron Droperidol	-	1.06 (0.62 to 1.82)	0.80 (0.50 to 1.30)	0.95 (0.77 to 1.17)	No study	0/3
Dolasetron Granisetron	-	No study	No study	No study	No study	No result
Dolasetron - Meto- clopramide		0.85 (0.57 to 1.26)	0.36 (0.19 to 0.65)	0.70 (0.47 to 1.04)	0.55 (0.32 to 0.94)	2/4
Dolasetron - On- dansetron		1.02 (0.81 to 1.28)	1.17 (0.94 to 1.45)	1.03 (0.83 to 1.27)	0.98 (0.75 to 1.29)	0/4
Dolasetron Ramosetron	-	No study	No study	No study	No study	No result
Dolasetron Tropisetron	-	One study	One study	No study	No study	No result
Droperidol Granisetron	-	1.36 (1.05 to 1.77)	2.16 (1.71 to 2.72)	2.08 (1.55 to 2.80)	3.62 (2.41 to 5.46)	4/4
Droperidol - Meto- clopramide		0.90 (0.74 to 1.10)	0.83 (0.71 to 0.96)	0.77 (0.65 to 0.91)	0.78 (0.58 to 1.03)	2/4
Droperidol - On- dansetron		0.95 (0.88 to 1.03)	1.22 (1.09 to 1.37)	0.99 (0.88 to 1.12)	1.01 (0.89 to 1.14)	1/4
Droperidol Ramosetron	-	No study	No study	No study	No study	No result
Droperidol Tropisetron	-	1.07 (0.86 to 1.33)	1.10 (0.54 to 2.22)	1.03 (0.81 to 1.30)	1.07 (0.78 to 1.46)	0/4
Granisetron - Meto- clopramide		0.50 (0.31 to 0.81)	0.39 (0.26 to 0.59)	0.38 (0.27 to 0.55)	0.21 (0.11 to 0.42)	4/4
Granisetron - On- dansetron		No study	No study	No study	1.12 (0.38 to 3.34)	0/1
Granisetron Ramosetron	-	2.34 (1.11 to 4.94)	2.82 (1.69 to 4.71)	2.50 (1.18 to 5.29)	One study	3/3
Granisetron Tropisetron	-	No study	No study	No study	1.00 (0.34 to 2.91)	0/1

**Table 3. Effective drug versus effective drug** (Continued)

Metoclopramide Ondansetron	-	1.22 (1.01 to 1.47)	1.48 (1.23 to 1.77)	1.28 (1.03 to 1.58)	1.12 (0.99 to 1.27)	3/4
Metoclopramide Ramosetron	-	No study	No study	No study	No study	No result
Metoclopramide Tropisetron	-	0.86 (0.50 to 1.48)	1.33 (0.70 to 2.53)	1.20 (0.88 to 1.62)	1.29 (0.90 to 1.85)	0/4
Ondansetron Ramosetron	-	No study	No study	No study	No study	No result
Ondansetron Tropisetron	-	1.15 (0.82 to 1.60)	1.53 (1.15 to 2.04)	1.09 (0.88 to 1.36)	1.08 (0.85 to 1.39)	1/4
Ramosetron Tropisetron	-	No study	No study	No study	No study	No result

**Table 4. Subgroup analysis: type of operation; placebo versus drug**

Outcome: specialty	Clonidine	Dexam- ethasone	Dolasetron	Droperidol	Granisetron	Metoclo- pramide	On- dansetron	Tropisetron
	Clonidine	Dexametha- sone	Dolasetron	Droperidol	Granisetron	Metoclo- pramide	On- dansetron	Tropisetron
Nausea: dental				0.52 (0.30 to 0.90)			0.73 (0.24 to 2.20)	
Nausea: ENT		0.51 (0.36 to 0.71)		0.63 (0.49 to 0.81)	0.38 (0.21 to 0.67)	0.89 (0.64 to 1.25)	0.73 (0.62 to 0.85)	
Nausea: general		0.59 (0.48 to 0.72)	0.75 (0.33 to 1.70)	0.64 (0.48 to 0.84)	0.47 (0.35 to 0.65)	0.86 (0.62 to 1.19)	0.72 (0.59 to 0.88)	0.70 (0.54 to 0.90)
Nausea: gy- naecological		0.56 (0.36 to 0.88)	0.81 (0.71 to 0.93)	0.70 (0.58 to 0.84)	0.48 (0.38 to 0.61)	0.86 (0.77 to 0.96)	0.66 (0.57 to 0.76)	0.76 (0.66 to 0.87)
Nau- sea: neuro- surgical					0.94 (0.71 to 1.25)		0.88 (0.56 to 1.38)	
Nausea: ob- stetrical		0.61 (0.43 to 0.87)		0.50 (0.34 to 0.73)		0.69 (0.48 to 0.99)	0.41 (0.25 to 0.65)	



**Table 4. Subgroup analysis: type of operation; placebo versus drug** (Continued)

Nau- sea: ophthal- mological				0.59 (0.20 to 1.75)		0.56 (0.31 to 1.01)	0.29 (0.06 to 1.39)	
Nausea: or- thopaedic	0.64 (0.31 to 1.31)	0.39 (0.24 to 0.64)		0.54 (0.41 to 0.71)		0.70 (0.51 to 0.94)	0.82 (0.50 to 1.33)	
Nausea: plastic							0.82 (0.50 to 1.36)	
Vomiting: dental		0.38 (0.02 to 6.98)		0.73 (0.38 to 1.40)			0.39 (0.08 to 1.85)	
Vomiting: ENT		0.49 (0.41 to 0.60)		0.62 (0.45 to 0.86)	0.32 (0.23 to 0.44)	0.80 (0.62 to 1.04)	0.49 (0.39 to 0.61)	0.53 (0.41 to 0.69)
Vomiting: general		0.51 (0.40 to 0.66)	0.30 (0.14 to 0.66)	0.73 (0.55 to 0.96)	0.43 (0.32 to 0.59)	0.79 (0.60 to 1.04)	0.55 (0.44 to 0.70)	0.27 (0.11 to 0.67)
Vom- iting: gynae- cological		0.44 (0.35 to 0.55)	0.57 (0.37 to 0.89)	0.57 (0.46 to 0.71)	0.40 (0.33 to 0.49)	0.75 (0.65 to 0.86)	0.61 (0.51 to 0.72)	0.56 (0.45 to 0.71)
Vomit- ing: maxillo- facial							1.19 (0.35 to 4.03)	
Vom- iting: neuro- surgical					0.48 (0.30 to 0.78)		0.48 (0.29 to 0.81)	
Vomiting: obstetrical		0.66 (0.46 to 0.94)		0.54 (0.35 to 0.85)		0.65 (0.38 to 1.09)	0.55 (0.25 to 1.22)	
Vomiting: ophthalmo- logical	0.77 (0.50 to 1.18)		0.54 (0.35 to 0.83)	0.62 (0.51 to 0.75)	0.41 (0.31 to 0.54)	0.73 (0.59 to 0.89)	0.47 (0.32 to 0.70)	
Vomiting: orthopaedic	0.91 (0.45 to 1.84)	0.32 (0.15 to 0.69)		0.50 (0.41 to 0.63)		0.69 (0.49 to 0.97)	0.48 (0.30 to 0.76)	
Vomiting: plastic							0.44 (0.26 to 0.73)	
Vomiting: urological							0.63 (0.28 to 1.39)	

**Table 4. Subgroup analysis: type of operation; placebo versus drug** (Continued)

Nau- sea or Vom- iting: ENT		0.58 (0.41 to 0.81)		0.51 (0.32 to 0.82)	0.29 (0.15 to 0.58)	0.82 (0.50 to 1.39)	0.54 (0.42 to 0.70)	
Nausea or Vomiting: general		0.47 (0.29 to 0.76)		0.57 (0.44 to 0.74)	0.46 (0.37 to 0.56)	0.83 (0.68 to 1.02)	0.58 (0.45 to 0.74)	0.55 (0.44 to 0.63)
Nau- sea or Vom- iting: gynae- cological		0.46 (0.38 to 0.55)	0.81 (0.74 to 0.89)	0.61 (0.52 to 0.71)	0.37 (0.28 to 0.47)	0.77 (0.65 to 0.90)	0.63 (0.53 to 0.76)	0.60 (0.43 to 0.84)
Nau- sea or Vom- iting: neuro- surgical							0.48 (0.29 to 0.80)	
Nau- sea or Vom- iting: obstet- rical		0.46 (0.35 to 0.62)		0.53 (0.40 to 0.71)		0.75 (0.54 to 1.03)	0.44 (0.31 to 0.62)	
Nausea or Vomiting: ophthalmo- logical				0.56 (0.39 to 0.79)		0.89 (0.67 to 1.18)	0.51 (0.44 to 0.61)	
Nausea or Vomiting: orthopaedic		0.34 (0.22 to 0.52)		0.56 (0.45 to 0.70)		0.72 (0.52 to 1.00)	0.48 (0.35 to 0.65)	
Rescue antiemetic: dental							0.17 (0.03 to 0.91)	
Rescue antiemetic: ENT		0.47 (0.28 to 0.80)		0.70 (0.48 to 1.02)	0.19 (0.11 to 0.34)	0.86 (0.63 to 1.15)	0.53 (0.42 to 0.67)	0.30 (0.03 to 3.46)
Rescue antiemetic: general		0.40 (0.30 to 0.53)		0.49 (0.31 to 0.76)	0.30 (0.20 to 0.45)	0.84 (0.61 to 1.17)	0.67 (0.50 to 0.89)	0.56 (0.36 to 0.88)

**Table 4. Subgroup analysis: type of operation; placebo versus drug** (Continued)

Rescue antiemetic: gynaecological		0.44 (0.31 to 0.62)	0.69 (0.55 to 0.85)	0.46 (0.32 to 0.67)	0.32 (0.23 to 0.46)	0.71 (0.57 to 0.89)	0.62 (0.53 to 0.73)	0.63 (0.47 to 0.83)
Rescue antiemetic: neurosurgical							0.63 (0.36 to 1.10)	
Rescue antiemetic: obstetrical		0.61 (0.39 to 0.96)		0.45 (0.25 to 0.81)		0.49 (0.18 to 1.31)	0.23 (0.09 to 0.58)	
Rescue antiemetic: ophthalmological				0.37 (0.19 to 0.71)	0.36 (0.20 to 0.64)	0.56 (0.22 to 1.40)	0.44 (0.35 to 0.55)	0.52 (0.21 to 1.26)
Rescue antiemetic: orthopaedic	1.13 (0.76 to 1.67)	0.35 (0.21 to 0.59)		0.55 (0.44 to 0.69)		0.78 (0.59 to 1.02)	0.45 (0.30 to 0.66)	1.05 (0.55 to 1.98)

**Table 5. Posthoc analysis: control with or without antiemetic**

Comparison	Nausea	Vomiting	Nausea or Vomiting	Rescue antiemetic	95% CI overlap?
	RR (95% CI) heterogeneity	RR (95% CI) heterogeneity	RR (95% CI) heterogeneity	RR (95% CI) heterogeneity	Outcomes overlapping
CYCLIZINE					
Control did not receive antiemetic	0.65 (0.46 to 0.92) 0%	0.56 (0.43 to 0.72) 0%	0.62 (0.51 to 0.75) 22%	0.29 (0.14 to 0.60) 0%	
Control did receive antiemetic	0.83 (0.28 to 2.44) na	0.17 (0.02 to 1.30) na	0.77 (0.53 to 1.13) na	0.10 (0.01 to 0.73) na	Yes (4/4)
Total	0.67 (0.48 to 0.92) 0%	0.54 (0.42 to 0.70) 5%	0.64 (0.54 to 0.76) 5%	0.24 (0.12 to 0.47) 0%	
DEXAMETHASONE					
Control did not receive antiemetic	0.62 (0.55 to 0.69) 80%	0.47 (0.42 to 0.53) 11%	0.43 (0.38 to 0.48) 0%	0.49 (0.43 to 0.55) 45%	

**Table 5. Posthoc analysis: control with or without antiemetic** (Continued)

Control did receive antiemetic	0.59 (0.47 to 0.74) 0%	0.43 (0.33 to 0.57) 0%	0.55 (0.47 to 0.65) 15%	0.62 (0.45 to 0.84) 13%	Yes (4/4)
Total	0.61 (0.55 to 0.68) 71%	0.46 (0.42 to 0.52) 0%	0.47 (0.43 to 0.51) 16%	0.50 (0.45 to 0.57) 39%	
DOLASETRON					
Control did not receive antiemetic	0.81 (0.74 to 0.88) 0%	0.70 (0.64 to 0.78) 52%	0.77 (0.71 to 0.83) 37%	0.68 (0.60 to 0.76) 24%	
Control did receive antiemetic	0.42 (0.13 to 1.40) 5%	0.27 (0.08 to 0.90) 0%	0.30 (0.12 to 0.73) 0%	na	Yes (3/3)
Total	0.81 (0.74 to 0.88) 0%	0.69 (0.63 to 0.77) 50%	0.76 (0.70 to 0.82) 44%	0.68 (0.60 to 0.76) 24%	
DROPERIDOL					
Control did not receive antiemetic	0.66 (0.62 to 0.70) 58%	0.59 (0.55 to 0.64) 8%	0.63 (0.59 to 0.68) 12%	0.48 (0.44 to 0.53) 22%	
Control did receive antiemetic	0.58 (0.46 to 0.75): 0%	0.55 (0.43 to 0.71) 0%	0.46 (0.36 to 0.60) 0%	0.49 (0.35 to 0.69) 37%	Yes (4/4)
Total	0.65 (0.62 to 0.69) 38%	0.59 (0.55 to 0.64) 0%	0.62 (0.58 to 0.66) 10%	0.48 (0.44 to 0.52) 24%	
GRANISETRON					
Control did not receive antiemetic	0.60 (0.55 to 0.66) 29%	0.43 (0.39 to 0.48) 12%	0.50 (0.46 to 0.56) 58%	0.35 (0.30 to 0.42) 52%	
Control did receive antiemetic	0.22 (0.12 to 0.41) 0%	0.16 (0.09 to 0.29) 0%	0.16 (0.09 to 0.28) 0%	0.10 (0.04 to 0.27) 0%	No (0/4)
Total	0.56 (0.51 to 0.62) 40%	0.41 (0.37 to 0.45) 0%	0.46 (0.42 to 0.51) 65%	0.33 (0.28 to 0.38) 50%	
METOCLOPRAMIDE					
Control did not receive antiemetic	0.78 (0.71 to 0.85) 0%	0.72 (0.66 to 0.78) 0%	0.73 (0.67 to 0.79) 0%	0.74 (0.64 to 0.84) 0%	
Control did receive antiemetic	0.76 (0.47 to 1.22) 0%	0.96 (0.65 to 1.42) 0%	0.83 (0.52 to 1.31) 0%	0.87 (0.54 to 1.41) 0%	Yes (4/4)
Total	0.78 (0.71 to 0.85) 0%	0.73 (0.67 to 0.79) 0%	0.73 (0.67 to 0.79) 0%	0.74 (0.65 to 0.85) 0%	

**Table 5. Posthoc analysis: control with or without antiemetic** (Continued)

ONDANSETRON					
Control did not receive antiemetic	0.73 (0.71 to 0.75) 81%	0.60 (0.57 to 0.62) 68%	0.55 (0.52 to 0.58) 77%	0.51 (0.48 to 0.54) 57%	
Control did receive antiemetic	0.61 (0.48 to 0.78) 0%	0.56 (0.42 to 0.74) 0%	0.66 (0.54 to 0.82) 2%	0.62 (0.46 to 0.82) 0%	Yes (4/4)
Total	0.73 (0.70 to 0.75) 79%	0.59 (0.57 to 0.62) 65%	0.55 (0.53 to 0.58) 75%	0.52 (0.49 to 0.55) 52%	
TROPISETRON					
Control did not receive antiemetic	0.76 (0.69 to 0.83) 0%	0.62 (0.56 to 0.69) 44%	0.72 (0.64 to 0.80) 15%	0.62 (0.54 to 0.71) 4%	
Control did receive antiemetic	na	na	0.39 (0.19 to 0.78) na	0.20 (0.05 to 0.89) na	Yes (2/2)
Total	0.76 (0.69 to 0.83) 0%	0.62 (0.56 to 0.69) 44%	0.69 (0.62 to 0.78) 24%	0.61 (0.53 to 0.70) 9%	

**Table 6. Drug costs to prevent one person experiencing PONV (£ or \$ per event)**

Drug(s)	US\$ per dose	UK£ per dose	Control incidence .2	Control incidence .3	Control incidence .4	Control incidence .5	Control incidence .6	Control incidence .7	Control incidence .8
Metoclopramide 10mg [US pharmacy price]	\$0.20	£0.28	£4.62 \$3.30	£3.08 \$2.20	£2.31 \$1.64	£1.85 \$1.32	£1.54 \$1.10	£1.32 \$0.94	£1.15 \$0.82
Cyclizine 50mg [meclizine 50mg; US pharmacy price]	\$0.74	£0.74	£12.20 \$12.20	£8.13 \$8.13	£6.10 \$6.10	£4.88 \$4.88	£4.07 \$4.07	£3.49 \$3.49	£3.05 \$3.05
Dexamethasone 8mg [US pharmacy price]	\$2.25	£1.27	£18.14 \$32.14	£12.10 \$21.44	£9.07 \$16.07	£7.26 \$12.86	£6.05 \$10.72	£5.18 \$9.18	£4.54 \$8.05

**Table 6. Drug costs to prevent one person experiencing PONV (£ or \$ per event)** (*Continued*)

On-dansetron 4mg [US pharmacy price]	\$21.23	£6.45	£92.14 \$303.28	£61.43 \$202.20	£46.07 \$151.64	£36.86 \$121.32	£30.71 \$101.08	£26.33 \$86.66	£23.04 \$75.84
Granisetron 1mg [US pharmacy price]	\$46.87	£11.46	£188.90 \$772.58	£125.93 \$515.04	£94.45 \$386.29	£75.56 \$309.03	£62.97 \$257.54	£53.97 \$220.73	£47.23 \$193.16
Cyclizine 50mg and Metoclo- pramide 10mg [US pharmacy prices]	\$0.94	£1.02	£11.66 \$10.75	£7.77 \$7.16	£5.83 \$5.37	£4.66 \$4.29	£3.89 \$3.58	£3.33 \$3.07	£2.91 \$2.68
Dexam- etha- sone 8mg and Meto- clo- pramide 10mg [US pharmacy prices]	\$2.45	£1.55	£15.12 \$23.90	£10.08 \$15.93	£7.56 \$11.95	£6.05 \$9.56	£5.04 \$7.97	£4.32 \$6.83	£3.78 \$5.97
Cyclizine 50mg and Dexam- ethasone 8mg and Meto- clo- pramide 10mg	\$3.19	£2.29	£18.05 \$25.14	£12.03 \$16.76	£9.02 \$12.56	£7.22 \$10.06	£6.02 \$8.39	£5.16 \$7.19	£4.51 \$6.28

## APPENDICES

### Appendix I. Search strategy

1. MeSH-NAUSEA OR NAUSEA\* OR INAPPETENCE
2. MeSH-VOMITING OR VOMIT\* OR EMESIS OR EMET\*
3. MeSH-POSTOPERATIVE NAUSEA AND VOMITING OR POSTOPERATIVE NAUSEA AND VOMITING
4. #1 OR #2 OR #3
5. MeSH-POSTOPERATIVE OR POST-OPERATIVE
6. MeSH-ANESTHESIA OR ANAESTHESIA OR ANESTHET\* OR ANAESTHET\*
7. #5 OR #6
8. MeSH-ANTIEMETICS OR ANTIEMESIS OR ANTIEMETIC\* OR ANTIEMETOGENIC
9. ALIZAPRIDE OR ALPRAZOLAM OR ATROPINE OR BETAMETHASONE OR BETHAMETHAZONE OR BROMAZEPAM OR CHLORAL HYDRATE OR CHLORPROMAZINE OR CIMETIDINE OR CLEBOPRIDE OR CLONIDINE OR CYCLIZINE OR DEXAMETHASONE OR DEXMEDETOMIDINE OR DIAZEPAM OR DIFENIDOL OR DIMENHYDRINATE OR DIXYRAZINE OR DOLASETRON OR DOMPERIDONE OR DROPERIDOL OR EPHEDRINE OR ERYTHROMYCIN OR FAMOTIDINE OR FLUNITRAZEPAM OR FLURBIPROFEN OR GINGER OR GLYCOPYRROLATE OR GRANISETRON OR HYOSCINE OR INTRALIPID OR ITASETRON OR LIDOCAINE OR LORAZEPAM OR LORMETAZEPAM OR MAGNESIUM OR MEDAZEPAM OR METHYLNALTREXONE OR METHYLPREDNISOLONE OR METOCLOPRAMIDE OR MIDAZOLAM OR NALOXONE OR NEOSTIGMINE OR ONDANSETRON OR OXYGEN OR PALONOSETRON OR PENTOBARBITONE OR PERPHENAZINE OR PREDNISOLONE OR PROCHORPERAZINE OR PENTOBARBITONE OR PROMETHAZINE OR PROPOFOL OR RAMOSETRON OR RANITIDINE OR SULPIRIDE OR TIAPRIDE OR TRIMETHOBENZAMINE OR TROPISETRON
10. #8 OR #9
11. #4 AND #7 AND #10

## FEEDBACK

**Feedback submitted: 04-Feb-2014**

### Summary

1. The review is out of date, and needs to be updated with included summary of findings table, and risk of bias figures.
2. Due to the very large nature of the topic, it is very difficult to find specific information from the review. Perhaps dividing it into smaller more specific reviews would allow scientific questions to be more easily answered, and would also allow a shorter time to update each review.
3. In terms of outcomes, we do not see the clinical utility of having separate analyses for nausea, vomiting, and nausea or vomiting.
4. In presentation of data, the paragraphs of listed drugs with results is not an effective way to display results, perhaps tables would be easier to read.
5. The overall recommendation was against the use of routine PONV prophylaxis, unless the patient has a high risk. However in the recommendations there was no suggestions as to what would put a person at higher risk (are we to assume the usual risk factors? did the outcomes in the RCTs reflect this?). In order to assess the usefulness of the review, we used the example of answering the question: does ondansetron prevent post-operative nausea or vomiting in a certain population (ex. gyne procedures).
6. The trials in the results forest plot showed a very high level of heterogeneity, thus results are questionable as to how this can be applicable to real life. Sub-group analysis within the forest plot could allow for more specific structure of information and answer more specific questions in terms of either patient population of the RCT, dose of drug used, or procedure that was performed. No recommended dosage was given (or easily found) although the drug was shown to be efficacious.

## Reply

1. The author agrees with this comment.
2. The author disagrees with this comment. The summary (particularly when tabulated as suggested in point 1.) can concisely communicate the results of the review. The review is answering a simple question: the outcomes assessed (PONV) are the same for all the drugs. An update might identify around 13 effective drugs, the effects of which can still be communicated simply. There were few side-effects that achieved statistical significance, so these do not complicate the summary findings. The question being addressed by the review - that might be asked by patients or clinicians - is 'what drugs can reduce the rate of PONV and by how much?' and 'what are their relative effects and side effects?' This question is very difficult to answer if a patient or clinician has to hunt down multiple systematic reviews that have only looked at one or two drugs. Division of this review into multiple smaller reviews doesn't allow for meta-regression or indirect comparisons, it does not so easily permit the identification of fraudulent research or bias.
3. The systematic review reflects the outcomes that authors of RCTs have chosen to report. Some patients dislike vomiting but don't mind being nauseated (so much), whilst other patients don't mind vomiting as long as they don't feel nauseated (much); not all patients who vomit are recorded as complaining of nausea. For these reasons separate analyses are helpful.
4. This will be considered in the update.
5. No, there was no recommendation. The summary factually stated how many patients might be expected to benefit and how many would not.
6. Due to lack of capacity for the Cochrane Library (in 2006) to accommodate subgroup analyses we did not display the various subgroup results, although we did report that type of surgery was not associated with interactions with antiemetic effects. Subgroup analyses did not reduce heterogeneity. There was also no interaction with age (adult vs child), sex (male vs female) and other factors as reported. We also reported on the effects of dosage.

## Contributors

Summary: Andrew Wilson, Senior Student, University of British Columbia Medical School. I certify that I have no affiliations with or involvement in any organization or entity with a financial interest in the subject matter of my feedback.

Reply: John Carlisle, lead author.

## WHAT'S NEW

Last assessed as up-to-date: 14 May 2004.

Date	Event	Description
7 December 2016	Amended	The future of this review is being considered. This is because it includes a large number of retracted studies

## HISTORY

Protocol first published: Issue 2, 2003

Review first published: Issue 3, 2006



Date	Event	Description
4 March 2014	Amended	<a href="#">Feedback</a> submitted
20 June 2008	Amended	Converted to new review format.

## CONTRIBUTIONS OF AUTHORS

Dr Carlisle (JBC) designed and wrote the protocol for this review, wrote the review methodology, designed and conducted the literature search, extracted data and categorized them according to the listed quality criteria, analysed the results, and wrote the review.

Dr Stevenson (CS) independently extracted data from studies and categorized them on the basis of the listed quality criteria.

## DECLARATIONS OF INTEREST

None known.

## SOURCES OF SUPPORT

### Internal sources

- Torbay Special Projects Fund, UK.

### External sources

- No sources of support supplied

## NOTES

December 2016

The future of this review is being considered. This is because it includes a large number of retracted studies

## INDEX TERMS

## **Medical Subject Headings (MeSH)**

Antiemetics [\*therapeutic use]; Postoperative Nausea and Vomiting [\*prevention & control]; Randomized Controlled Trials as Topic

## **MeSH check words**

Humans