BEST EVIDENCE TOPIC REPORTS

Towards evidence based emergency medicine: best BETs from the Manchester Royal Infirmary

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Best Evidence Topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but rather contain the best (highest level) evidence that can be practically obtained by busy practising clinicians. The search strategies used to find the best evidence are reported in detail in order to allow clinicians to update searches whenever necessary. Each BET is based on a clinical scenario and ends with a clinical bottom line which indicates, in the light of the evidence found, what the reporting clinician would do if faced with the same scenario again.

The BETs published below were first reported at the Critical Appraisal Journal Club at the Manchester Royal Infirmary¹ or placed on the BestBETs website. Each BET has been constructed in the four stages that have been described elsewhere.² The BETs shown here together with those published previously and those currently under construction can be seen at <http://www.bestbets.org>.³ Four BETs are included in this issue of the journal.

- ▶ Midazolam or ketamine for procedural sedation of children in the emergency department
- ▶ Use of octreotide acetate to prevent rebound hypoglycaemia in sulfonylurea overdose
- ▶ Ultrasound to detect haemothorax after chest injury
- ▶ Aminophylline in bradyasystolic cardiac arrest

1. Carley SD, Mackway-Jones K, Jones A, *et al*. Moving towards evidence based emergency medicine: use of a structured critical appraisal journal club. *J Accid Emerg Med* 1998;15:220–2.
2. Mackway-Jones K, Carley SD, Morton RJ, *et al*. The best evidence topic report: A modified CAT for summarising the available evidence in emergency medicine. *J Accid Emerg Med* 1998;15:222–6.
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Midazolam or ketamine for procedural sedation of children in the emergency department

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Abstract

A short cut review was carried out to establish whether ketamine or midazolam is superior at providing safe and

effective conscious sedation in children in the emergency department. A total of 203 papers were found using the reported searches, of which four presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are summarised in table 1. It is concluded that midazolam and ketamine have similar efficacy and safety profiles but that ketamine is preferred by parents and physicians.

Three-part question

In [children needing painful procedures in the emergency department] is [midazolam or ketamine] [safer and more effective at achieving conscious sedation]?

Clinical scenario

A mother brings her 5-year-old son to the emergency department with a deep scalp laceration, having fallen onto the corner of a coffee table. The wound requires sutures. For various reasons the option for procedural sedation in this department is limited to midazolam. Due to your past experience, you are more comfortable using ketamine. Although there is a large amount of data in the emergency literature to show efficacy and safety for both agents, you are not aware of direct comparisons to back your preference for ketamine in children in the emergency department setting.

Search strategies

Medline 1960–April 2007 using the OVID interface: (exp ketamine/or ketamine.mp.) AND (exp midazolam/or midazolam.mp.) AND (exp child/ or “children”.mp. or exp pediatrics/ or “pediatric”. mp.). LIMIT to human AND English language.

The Cochrane Library Issue 2, 2007: MeSH descriptor Ketamine explode all trees AND MeSH descriptor Midazolam explode all trees AND (emergency department):ti,ab,kw 7 papers none relevant

Outcome

Of the 203 papers found in Medline, 199 were found to be irrelevant or of insufficient quality for inclusion. Of seven papers found in Cochrane none were relevant. The remaining four papers are summarised in table 1.

Comments

The available comparative studies involved multiple agents and combinations, routes of administration and doses. No head to head trials of intravenous ketamine versus intravenous midazolam for procedural sedation in children in the emergency setting could be found. Secondary findings show that satisfaction of parents and physicians was greater with ketamine and that physicians felt it was safer.