BEST EVIDENCE TOPIC REPORTS

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

Edited by Simon D Carley

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Best evidence topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but 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 to allow clinicians to update searches whenever necessary. Each BET is based on a clinical scenario and ends with a clinical bottomline that 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 elsewhere². 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.

- ▶ Does normal-shaped pupil exclude the diagnosis of iritis
- ▶ Use of lidocaine in the GI cocktail for the treatment of dyspepsia
- ▶ Dose >50 mg/kg: anticipate fluctuation in mental status with intermittent agitation followed by coma, which would require intubation and ventilation within 12 h
- ▶ Diagnosis of drug overdose by rapid reversal with naloxone
- ▶ Pregnancy-associated plasma protein: a novel cardiac marker with promise

Where a symbol is attached, it means that a critical appraisal of that paper has been posted on the bestbets website.

Does a normal-shaped pupil exclude the diagnosis of iritis?

Use of lidocaine in the gastrointestinal cocktail for the treatment of dyspepsia.

Diagnosis of drug overdose by rapid reversal with naloxone.

PAPP-A: a novel cardiac marker with promise.

- 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.
- 3 Mackway-Jones K, Carley SD. bestbets.org: Odds on favourite for evidence in emergency medicine reaches the worldwide web. *J Accid Emerg Med* 2000;17:235-6.

Does a normal-shaped pupil exclude the diagnosis of iritis

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A short-cut review was carried out to establish whether an abnormal pupil was a highly sensitive marker for acute iritis.

A total of 174 citations were reviewed, of which one answered the three-part question. The clinical bottomline is that patients who present with an acute iritis (anterior uveitis) often have no change in pupil size or shape—that is, their pupil is normal compared with their other eye.

Three-part question

In [patients with suspected iritis] does [the presence of a normal pupil] exclude [the diagnosis of iritis]?

Clinical scenario

A patient presents to the emergency department with a unilateral, red, painful eye. Visual acuity is reduced in the affected eye. The pupil is normal and the cornea is clear. There is some ciliary flush around the iris. You can't decide whether the diagnosis of iritis is correct or not. The other features of iritis (ie, unilateral, red, painful and decreased visual acuity) are present, but the pupil remains of normal size and shape. Is this a common presentation?

Search strategy

Ovid MEDLINE(R) 1966 to August Week 5 2006, Embase 1980 to 2006 Week 25, CINAHL 1982 to June Week 3 2006 {[Iritis.mp. or exp Iritis or Anterior uveitis.mp. or exp Uveitis, Anterior or exp Uveitis or exp iridocyclitis PR cyc;it is.mp.] and [Pupil.mp. or exp Pupil or exp Adhesions or Adhesions.mp. or posterior synechiae.mp. or Iris.mp. or exp Iris or irregular pupil.mp.] and [exp Diagnosis/or Diagnosis.mp.]} LIMIT to [humans and english language]

Cochrane Iritis and (Pupil Size or Irregular Pupil)

Search outcome

Medline 313 papers were found in Medline, of which only one was relevant to the question. This is listed in the table below. No further papers were gained from searching Embase, CINAHL or the Cochrane databases.

Comment(s)

From the review of the literature, only one paper was found to look into the examination of the eye in acute anterior uveitis. Seven of the eyes presented with a change in pupil size compared with the other normal eye. In all cases, the pupil was miosed (small). All the other 18 eyes presenting with anterior uveitis had normal pupils. The paper states that the formation of posterior synechiae (adhesions between the iris and the lens) is the cause of the miosed pupil. Posterior synechiae is considered to be a complication of prolonged inflammation in the eye. Hence, in the early stages of a first presentation of acute anterior uveitis, there may be no adhesions and therefore the pupil will be normal. An irregular pupil may be seen only after posterior synechiae have formed owing to chronic inflammation, usually as the pupil is artificially dilated.

In another study on iridocyclitis in patients with juvenile rheumatoid arthritis, 61% of their patients enrolled had posterior synechiae.[1]

Table 1

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Oksala A 1977 Finland	25 patients with unilateral acute anterior uveitis The affected eye compared with the normal eye. Eyes examined with a slit lamp and then with ultrasound	Cohort study	Ability to visualise the vitreous body in acute anterior uveitis	7 of 25 eyes unable to see vitreous body because of the formation of posterior synechiae causing the pupil to be miotic in first presentation of acute uveitis 18 of 25 eyes did not present with a change in pupil size or shape	Small number of patients

Clinical bottomline

Patients who present with acute iritis (anterior uveitis) often have no change in pupil size or shape—that is, their pupil appears normal compared with their other eye.

1 Key SN III, Kimura SJ. Iridocyclitis associated with juvenile rheumatoid arthritis. *Am J Ophthalmol* 1975;**80**:425–9.

2 Oksala A. Ultrasonic findings in the vitreous body in patients with acute anterior uveitis. *Acta Ophthalmol* 1977;**55**:287–93.

Use of lidocaine in the gastrointestinal cocktail for the treatment of dyspepsia

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Abstract

A short-cut review was carried out to establish whether lidocaine is a useful adjuvant in the gastrointestinal cocktail of dyspepsia treatment. 325 citations were reviewed, of which two answered the three-part question. The clinical

bottomline is that antacid alone should be used as preferred treatment for dyspepsia. The addition of lidocaine and donnatal can be used on doctor's discretion in patients without contraindications to these agents.

Clinical scenario

A 35-year-old man presents to the emergency department with a history of burning pain radiating from his epigastric area up through his mediastinum that started after dinner. The patient had a history of gastro-oesophageal reflux disease and was placed on prilosec treatment last year, but has stopped taking this for 3 months. You decide to treat this probable case of dyspepsia with a gastrointestinal cocktail, a mixture of lidocaine and antacid, but wonder if adding the lidocaine yields any benefit.

Three-part question

In [patients with dyspepsia who present to the emergency department] is the [GI Cocktail better than Antacid alone] in [relieving pain].

Search strategy

Medline 1966 to June 2006 using OVID interface. [exp Antacids/or exp Lidocaine/or gi cocktail.mp or exp Anesthetics, Local/] AND [dyspepsia.mp or exp Dyspepsia/]

Table 2

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Welling L and Watson W, 1990, US	76 patients in an urban emergency department with symptoms consistent with dyspepsia; 34 receiving antacid alone (Mylanta II), and 39 receiving GI cocktail (Mylanta II and 30 ml 2% viscous lidocaine) with three excluded; pain was measured on an 11 cm scale before, and 30 min after treatment	Randomised control trial	Pain at baseline Improvement in pain at 30 min after treatment	6.4 in the antacid group v 6.7 in the lidocaine group; $p > 0.5$ 0.9 in the antacid group v 4 in the lidocaine group; $p < 0.001$	Interviewers were not blinded to study patients, which may lead to bias; no clinically defined symptoms of dyspepsia to enroll patients
Berman D and Porter R, 2003, US	120 adult patients who presented to an urban tertiary care centre emergency department where the treating doctor ordered a "GI cocktail" Patients either given Donnatal-viscous lidocaine-antacid, Donnatal-antacid, or antacid alone; pain was measured on visual analogue scale; 113 patients completed the study	Prospective double-blind randomised trial	Pain relief in antacid alone group Pain relief in antacid and donnatal group Pain relief in antacid and donnatal group and viscous lidocaine Statistical analysis of results	25 mm decrease in pain 23 mm decrease in pain 24 mm decrease in pain No statistically significant difference in pain relief between the three groups on univariate or multivariate regression analysis	Well-conducted study, but there was no standardised inclusion criteria for the ordering of the GI cocktail and no specific diagnosis was found in each patient

GI, gastrointestinal.