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 rather contain the best (highest level) evidence that can be practically obtained by busy practicing 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.

- ▶ The Use of IV Terlipressin in Non-Variceal Upper GI Bleeds.
- ▶ Beta-blockers in cocaine induced acute coronary syndrome
- ▶ Ultrasound placement of needle in three-in-one nerve block
- ▶ BNP as a potential marker of acute coronary syndromes

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;15:220–222.

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;15:222–226.

Mackway-Jones K, Carley SD. [bestbets.org](http://www.bestbets.org): Odds on favourite for evidence in emergency medicine reaches the worldwide web. *J Accid Emerg Med* 2000;17:235–6.

The use of intravenous terlipressin in non-variceal upper GI bleeds

Report by Gabby May, *Senior Clinical Fellow in Emergency Medicine*

Checked by Dafalla Musa, *Senior Clinical Fellow in Emergency Medicine*

Manchester Royal Infirmary

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Abstract

A short cut review was carried out to establish whether terlipressin should be used in upper GI bleeding when variceal bleeding is not suspected as the cause. 556 papers

were found, of which none answered the three part question. The clinical bottom line is that there is no evidence for the use of intravenous terlipressin in patients presenting with acute, severe upper GI bleeds unless they have endoscopic evidence of varices or a high clinical index of suspicion is met.

Three part question

[In patients with acute, severe non variceal upper GI bleeding] is [the use of iv terlipressin] indicated to [improve survival, control bleeding and prevent rebleeding]?

Clinical scenario

A 65 year old man presents to the emergency department with a large, fresh upper GI bleed. He has a history of NSAID use and complains of increasing indigestion over the last few months. You think some of this may be due to the fact he drinks 35 units of alcohol a week. On examination, he has no stigmata of chronic liver disease and is unwell with a BP of 80 systolic and tachycardia of 140.

In view of his history and lack of positive examination findings you feel that the most likely diagnosis is a bleeding peptic ulcer.

You wonder if there is any evidence to support the use of intravenous terlipressin in non variceal upper GI bleeds.

Search strategy

MEDLINE (OVID interface) 1960–April 2006 and COCHRANE (via NELH) 2006 Issue 1. Medline: {upper gi bleed.mp. OR exp Gastrointestinal Hemorrhage/or exp Hematemesis/OR haematemesis.mp. OR hematemesis.mp OR gastrointestinal adj5 haemorrhage.af. OR gastrointestinal adj5 hemorrhage.af. OR gi adj5 bleed.af. OR peptic ulcer disease.mp. OR exp peptic ulcer/OR gastric ulcer.af. OR duodenal ulcer.af.} AND {terlipressin.mp.OR vasopressin.mp. OR exp vasopressin/OR antidiuretic hormone.mp. OR adh.mp. } Limit to human and English language. Cochrane: “terlipressin and bleeding”.

Search outcome

Altogether 556 papers were found, of which none were relevant. Cochrane returned 63 citations, of which none were relevant.

Comment(s)

Intravenous terlipressin is used in variceal bleeds for its effect on the splanchnic circulation causing a lowering of portal pressure, and slowing or stopping bleeding. However, in ulcerative bleeding the vessel is commonly arterial rather than from an abnormally dilated vein.

The effects of terlipressin are generalised, and it is associated with a number of important side effects. In particular it causes generalised arteriolar and venous constriction, which may lead to myocardial ischaemia or infarction, or peripheral vascular ischaemia. Clearly, none of these are desirable in a hypovolaemic shocked patient.

The dilemma in the emergency department arises when a patient presents in whom variceal bleeding is possible, but

much less likely than a ulcerative bleed. A current database search has failed to identify evidence for the use of iv terlipressin in non variceal bleeds and we conclude that in the absence of known varices its use should be restricted.

► CLINICAL BOTTOM LINE

There is no evidence for the use of intravenous terlipressin in patients presenting with acute, severe upper GI bleeds unless they have endoscopic evidence of varices or a high clinical index of suspicion is met.

Beta-blockers in cocaine induced acute coronary syndrome

Report by Ayan Sen and Tim Fairbairn, *Clinical Fellow in Emergency Medicine, SHO in General Medicine*

Checked by Freya Levy, *Consultant in Emergency Medicine, Stepping Hill Hospital Manchester Royal Infirmary*

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Abstract

A short cut review was carried out to establish whether beta blockers should be used in the treatment of chest pain associated with cocaine use. 12 papers were found, of which two 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 tabulated. The clinical bottom line is that Beta Blockers should not be used in the treatment of cocaine induced myocardial ischaemia.

Three part question

In [cocaine users with chest pain suggestive of acute coronary syndrome] does [beta-blocker administration] cause [potentiation of coronary vasoconstriction]?

Clinical scenario

A 25 year old male is brought to the emergency department after he dialled 999 following sudden onset of crushing chest pain. He admitted to snorting cocaine before the episode but did not have any other past medical history. His blood pressure was 180/100 and he had been given aspirin and GTN spray by the paramedic crew. 12-lead ECG in A/E showed 1 mm ST-depression in V5–V6. You make a diagnosis of acute coronary syndrome (ACS) and decide to give the maximum medical treatment for ACS including beta-blocker atenolol. An irate cardiology SpR calls you up the next day to ask you whether you haven't heard of beta-blockers worsening cocaine induced coronary vasospasm. You are shocked to hear that and wonder what the evidence-base is!

Search strategy

MEDLINE using OVID interface 1966–March 2006 and Cochrane Database of Systematic Reviews 2006 Issue 1. Medline: [exp COCAINE-RELATED DISORDERS/OR exp COCAINE/] AND [exp Chest Pain/OR exp Angina pectoris OR exp Myocardial Infarction/OR acute coronary syndrome.mp] AND [exp Adrenergic beta-Antagonists/OR beta-blockers.mp. OR beta blockers.mp.].

Search outcome

Altogether 12 references were noted, of which two directly related to our question (see table 1). No additional papers were found in the Cochrane library.

Comment(s)

Beta blockade for cocaine induced myocardial infarction has been advocated in some quarters. At first sight it would seem to make sense as many of these patients will be hypertensive and suffering the effects of an adrenergic drive. However, it must be remembered that cocaine affects both alpha and beta receptors and that by giving a beta blocker the effects of alpha blockade on the heart may become unopposed. These trials seem to confirm this concern with a decrease in myocardial blood flow and coronary vasoconstriction. In a patient with myocardial ischaemia this could result in an even lower coronary blood flow thereby worsening the ischaemia. However, we must remember that this is a small study in an experimental setting with patients receiving very small amounts of cocaine (much less than the typical recreational user). It therefore makes the interpretation of these findings difficult.

On balance, in light of the feasible pathophysiological argument against the use of beta blockers, and the findings of these limited studies it appears sensible not to advocate the use of beta blockers in acute myocardial pain secondary to cocaine use.

► CLINICAL BOTTOM LINE

Beta Blockers should not be used in the treatment of cocaine induced myocardial ischaemia.

Lange RA, Cigarroa RG, Flores ED, et al. Potentiation of cocaine-induced coronary vasoconstriction by beta-adrenergic blockade. *Annals of Internal Medicine* 1990 Jun 15;112(12):897–903.

Boehrer JD, Moliterno DJ, Willard JE, et al. Lange RA. Influence of labetalol on cocaine-induced coronary vasoconstriction in humans. *American Journal of Medicine* 1993 Jun;94(6):608–10.

Ultrasound placement of needle in three-in-one nerve block

Report by R Williams, *Specialist Registrar in Accident and Emergency*

Checked by B Saha, *Specialist Registrar in Anaesthesia*

Oldham Royal Infirmary

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Abstract

A short cut review was carried out to establish whether ultrasound placement of three-in-one block is better than placement using a nerve stimulator. 137 papers were found, of which two 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 tabulated. The clinical bottom line is that ultrasound guidance is better than electrical nerve stimulation at obtaining a good quality three in one femoral block.

Three part question

In patients [undergoing “3-in-1” nerve block for femoral neck fractures] is [ultrasound scanning as efficacious as nerve stimulation] for [confirmation of needle placement and reducing complications]?

Clinical scenario

A 77 year old woman presents to the emergency department following a simple fall in which she has sustained a fractured neck of femur. You have recently completed a secondment in anaesthetics and consider a “3-in-1” block for pain relief. One of the consultants with whom you worked stated that to perform a nerve block without using a nerve stimulator