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

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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

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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

Table 1

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Lange RA <i>et al</i> , 1990, USA	30 clinically stable patient volunteers referred for catheterisation for evaluation of chest pain	Randomised, double-blind, placebo-controlled trial	Change in coronary sinus blood flow after cocaine Further change in coronary sinus blood flow after cocaine then saline Further change in coronary sinus blood flow following cocaine and then treated with propranolol Change in coronary vascular resistance after initial cocaine Further change in coronary vascular resistance after cocaine then saline Further change in coronary vascular resistance after cocaine then propranolol Results on angiography	Decreased post cocaine by 10% (+/- 7%) No change Decreased by 15% (+/- 18%) Increased by 22% (+/- 11%) No change Further increase by 19% 6 were angiographically normal and 9 had sclerotic disease (>70% narrowing)	Low numbers equate to low statistical significance Age range 38-68 Only 7 of the 30 had normal coronary arteries Investigation only involved gross coronary anatomy No markers of myocardial ischaemia
Boehrer JD <i>et al</i> , 1993, USA	15 patients (7 men and 8 women) aged 40-79 years, non cocaine users undergoing catheterisation for evaluation of chest pain who were administered 2 mg/kg cocaine intranasally and 15 minutes later received intravenous labetalol (n=6) or saline (n=9)	Prospective clinical trial	Change in heart rate after cocaine Change in Mean arterial pressure after cocaine Change in coronary arterial area after cocaine Change in Heart rate after saline or labetalol	No change Increase of around 8% in both groups Around 6% reduction in Group 1 who got saline after compared to around 8% reduction in those who got labetalol No change	Very poor methodology, no mention of type of study or procedure of randomisation or any blinding process Very small sample size Significant number had coronary vascular disease and all were not related directly to cocaine use No markers of ischemia studied Method of reporting of data is poor and the percentages have been calculated from their tables by the reviewers The tables merely report gross change in parameters with deviations in values measured Patients were non cocaine users so validity in cocaine users can only be assumed
			Change in mean arterial Pressure after saline/labetalol Change in coronary arterial area after saline/labetalol	Almost 3% reduction in saline and 6% in labetalol group No significant change	

Table 2

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Marhofer P <i>et al</i> , 1997, Austria	40 patients (ASA II or III) undergoing hip surgery after trauma. Randomisation to either nerve stimulator (n = 20) or ultrasound guided (n = 20) three in one block.	PRCT	Quality of block as assessed by block rating scale (0 to 100) expressed as percentage of initial value.	Better for USS. US 15% +/- 10%, NS 27% +/- 14% p<0.05	Unblinded No power study Small group Unclear if validated rating tool Matching of groups not explicit for fracture or procedure Not performed in the emergency department
	Quality of block was assessed for one hour at 10 min intervals using a pin prick test.		Time to onset of block (mins)	Better with USS. US 16 +/- 14, NS 27 +/- 16 p<0.05 Better for USS. US 95% v NS 85% Better for USS. US 0, NS 3	
Marhofer P <i>et al</i> , 1998, Austria	60 patients undergoing hip surgery following trauma. Randomly assigned into one of three groups 20 mls 0.5% bupivacaine under US guidance (A), 20 mls 0.5% bupivacaine and nerve stimulator (B), 30 mls 0.5% bupivacaine and nerve stimulator (C)	PRCT	Subjective quality of analgesia Complications Arterial puncture Quality of block as assessed by block rating scale (0 to 100) expressed as percentage of initial value	Best for USS. A 4% +/- 5%, B 21% +/- 11%, C 22% +/- 19%. p<0.01	Unblinded
	Quality of block assessed for one hour using pin prick test at 10 min intervals		Time to onset of block (mins)	Best with USS. A 13 +/- 6, B 27 +/- 12, C 26 +/- 13. p<0.01	No power study
			Overall success rate	Best for USS. US 95% v NS 85%	Unclear if validated rating tool
			Complications	US None NS 2 (vascular puncture)	Not performed in the emergency department

would be poor clinical practice. When you gave the example of nerve blocks in fractured neck of femur he commented that ultrasound has been used as an alternative to nerve stimulators in this setting.

Search strategy

Medline using Ovid interface 1966–March 2006, CinAHL using Ovid interface 1982 to March Week 2 2006 and Cochrane: via NELH 2006 Issue 1. “femoral and ultrasound and anaesthesia”. Medline: {(Exp. Ultrasonography or ultrasound\$.mp or sonographic guidance.mp) or (electrical nerve stimulator\$.mp or electrical nerve stimulation.mp)] and (exp. Nerve block\$ or femoral nerve block\$.mp or 3-in-1 block.mp or three in one block\$.mp or three-in-one block\$.mp or triple block.mp or lateral cutaneous nerve block\$.mp or obturator nerve block\$.mp)} (limited to human, English and abstracts in Medline but not in CinAHL). Cochrane: “femoral and ultrasound and anaesthesia”.

Search outcome

137 papers were found through Medline, of which two were relevant to the three part question (see table 2). No additional papers were found in CinAHL or the Cochrane Library.

Cochrane: 21 citations found but no new papers.

Comment(s)

Conformation of needle placement in regional anaesthesia is seen by many as a vital part of the procedure. Many anaesthetists would argue that to perform such procedures without a nerve stimulator is not best practice, and has implications within clinical governance. In the emergency department the use of a nerve stimulator for three-in-one blocks would result in muscular contraction that would cause increase pain and risk fracture displacement. Although the trials are small, the data presented would suggest that ultrasound guide three-in-one block may be an alternative to nerve stimulation in the emergency department.

► CLINICAL BOTTOM LINE

Ultrasound guidance is better than electrical nerve stimulation at obtaining a good quality three in one femoral block.

Marhofer P, Schrogendorfer K, Koinig H. Ultrasonographic guidance improves sensory block and onset time of three-in-one blocks. *Anaesthesia and Analgesia* 1997 Oct;**85**(4):854–7.

Marhofer P, Schrodendorfer K, Wallner T, *et al*. Ultrasonographic guidance reduces the amount of local anaesthetic for 3-in-1 blocks. *Regional Anaesthesia and Pain Medicine* 1998 Nov–Dec;**23**(6):584–8.

Brain natriuretic peptide as a potential marker of acute coronary syndromes

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Abstract

A short cut review was carried out to establish whether brain natriuretic peptide (BNP) can be used as a marker for acute coronary syndromes. 685 citations were found, of which eight 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 BNP shows promise as an early cardiac marker and may enhance prognostic stratification. NPV and PPV may be unacceptably low to enable use as a sole cardiac marker. Incorporation into a multimarker strategy and serial estimations may be necessary.