► CLINICAL BOTTOM LINE

A regime of prophylactic intravenous normal saline and intramuscular or intravenous chlorpromazine appears to have superior efficacy to pethidine, lignocaine or ergot derivatives, and similar efficacy to ketorolac, metoclopramide or sumatriptan for the abolition of the pain of migraine headache.

Iserson KV. Parenteral chlorpromazine treatment of migraine. *Annals of Emergency Medicine* 1983;**12**:756–8.

McEwen JI, O'Connor HM, Dinsdale HB. Treatment of migraine with intramuscular chlorpromazine. *Annals of Emergency Medicine* 1987;**16**:758–63.

Lane PL, McLellan BA, Baggoley CJ. Comparative efficacy of chlorpromazine and meperidine with dimenhydrinate in migraine headache. *Annals of Emergency Medicine* 1989;**18**:360–5.

Bell R, Montoya D, Shuaib A, et al. A comparative trial of three agents in the treatment of acute migraine headache. *Annals of Emergency Medicine* 1990 Oct;**19**:1079–82.

Cameron JD, Lane PL, Speechley M. Intravenous chlorpromazine vs intravenous metoclopramide in acute migraine headache. *Academic Emergency Medicine* 1995;**2**:597–602.

Shrestha M, Singh R, Moreden J, et al. Ketorolac vs chlorpromazine in the treatment of acute migraine without aura. A prospective, randomized, double-blind trial. *Archives of Internal Medicine* 1996;**156**:1725–8.

Kelly AM, Ardagh M, Curry C, et al. Zebic S Intravenous chlorpromazine versus intramuscular sumatriptan for acute migraine. *Journal of Accident & Emergency Medicine* 1997;**14**:209–11.

Bigal ME, Bordini CA, Speciali JG. Intravenous chlorpromazine in the emergency department treatment of migraines: a randomized controlled trial. *Journal of Emergency Medicine* 2002;**23**:141–8.

The use of intrapleural anaesthetic to reduce the pain of chest drain insertion

Report by Gabby May, Senior Clinical Fellow in Emergency Medicine

Checked by Tom Bartram, Clinical Fellow in Emergency medicine

Manchester Royal Infirmary, Manchester

doi: 10.1136/emj.2007.047878

A short cut review was carried out to establish whether there is any evidence that intrapleural anaesthetic is effective in relieving pain in patients with chest drains. 190 papers were found using the reported search, of which two answered the

clinical question. The authors, patient groups, outcomes results and key weaknesses of this evidence are presented. The clinical bottom line is that intrapleural bupivacaine should be considered in patients who have chest drains inserted, in addition to their regular oral/parenteral analgesia.

Clinical scenario

A 25-year-old male with a history of spontaneous pneumothorax presents to the emergency department with a further large pneumothorax. Unfortunately, attempted aspiration fails due to a permanent leak, and he requires an intercostal drain. He has had a chest drain inserted in the past and admits that it was very painful whilst the drain was in situ. You wonder whether administration of local anaesthetic down the tube would provide good analgesia, and decrease the need for oral/or intravenous medications.

Three part question

[After insertion of a chest drain] does [the use of local anaesthetic down the drain] reduce [patient's pain]?

Search strategy

Medline Ovid Interface 1966–Aug 2006

exp Anesthetics, local/OR local anaesth\$.mp. OR exp lignocaine/OR bupivacaine.mp. OR marcain.mp. OR lignocaine.mp. OR lidocaine.mp. OR exp lidocaine/OR (local adj5 anaesthetic).mp. AND chest drain.mp. OR intercostal drain.mp. OR chest tube.mp. OR exp chest tubes/OR exp drainage/OR exp thoracostomy/limit to English and humans

Search outcome

A total of 190 articles found, of which one was relevant.

Comment(s)

Patients with indwelling chest drains may have severe pain and require oral or intravenous analgesia including opiates. There has been much research on the use of intrapleural analgesia after chest trauma and thoracostomy, but only one study which looks at the use of intrapleural analgesia solely for the relief of pain from the indwelling drain.

Although the number of patients is small, it seems to suggest that there may be a role for intrapleural analgesia in this subset of patients. No side effects of treatment were noted.

Table 4

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Engdahl et al, 1993, Sweden	22 patients with indwelling chest drains – 8 hourly boluses of 20 ml interpleural bupivacaine with 0.5% adrenaline, compared with placebo - visual analogue scale scores compared	Randomised double blind trial	VAS scores after 1st injection (exclude pt 2)	Lower in bupivacaine group at 5,15, 30 and 60 min p<0.01	Small study
			VAS score 4 hrs post 1st injection	No difference between groups	8 hours between boluses though bupivacaine is relatively short acting
			VAS scores after injections 2–10	Only significant difference in favour of bupivacaine at 5 mins post 2nd injection, and post 7th injection, otherwise pain VAS comparable	Timing of 1st intrapleural injection not standardised – “at 4 hrs or earlier if in severe pain”
			Use of intravenous morphine	Not significant, though tended to be asked for earlier in control group	
			Use of oral analgesia	No difference in consumption	

VAS, visual analogue score

The biggest benefit of intrapleural bupivacaine seems to be gained with its early introduction, and also if it is given regularly, at least every 4 h, due to its short half life. Oral analgesia should still be given to these patients.

Better pain relief in this group of patients would also be beneficial, as it would improve the patients's ability to cough and deep breathe, and thus reduce the number of secondary chest infections.

► CLINICAL BOTTOM LINE

Intrapleural bupivacaine should be considered in patients who have chest drains inserted, in addition to regular oral/parenteral analgesia.

Knottenbelt JD, et al. Intrapleural bupivacaine analgesia in chest trauma: a randomised double blinded controlled trial. *Injury* 1991;**22**:114–6.

Engdahl, et al. Interpleural bupivacaine for analgesia during chest drainage treatment for pneumothorax. A randomised double blind study. *Acta Anaesthesiologica Scandinavica* 1993;**37**:149–53.