doi: 10.1136/emj.2005.023671

Funding: LGR received part funding for one conference.

Competing interests: the test panels for the initial pilot study of 90 patients were provided by the manufacturer Biosite Inc.

References

- 1 Goodacre S, Nicholl SJ, Dixon S, Cross E, *et al.* Randomized controlled trial and economic evaluation of a chest pain observation unit compared with routine care. *BMJ* 2004;**328**:254–7.
- 2 Ng S, Krishnaswamy P, Morissey R, *et al.* Ninety minute accelerated critical pathway for chest pain evaluation. *Am J Cardiol* 2001;**88**:611–17.
- 3 McCord J, Nowak RM, McCullough P, *et al.* Ninety-minute exclusion of acute myocardial infarction by use of quantitative point of care testing of myoglobin and Troponin I. *Circulation* 2001;**104**:1483–8.
- 4 Herren KR, Mackway-Jones K. Emergency management of cardiac chest pain: a review. *Emerg Med J* 2001;**18**:6–10.

Injury to supraorbital area – should this be referred to as a head injury or facial injury?

The National Institute for Health and Clinical Excellence (NICE) published clinical guidelines for the management of head injury (NICE HI) in 2003.¹ There is only one indication for a skull x ray in an adult. This is where computed tomography (CT) scanning resources are unavailable. Before the publication of NICE HI, patients with a history of trauma and a large tender swelling in the frontal area would have x rays of the skull taken,² which included a lateral view of the frontal bone. We describe a case with no NICE HI indications for skull x rays or head CT scans that resulted in a missed frontal sinus fracture.

A 27 year old male presented to the emergency department after playing football. He had struck his forehead against the back of another player's head. There was no loss of consciousness, no amnesia, visual disturbance, or vomiting. The Glasgow Coma Scale was 15 and the neurological examination was normal. A large tense tender swelling over the left supraorbital area of frontal bone was noted. No imaging was indicated using NICE HI.¹ After a short period of observation he was discharged home with oral analgesia and a head injury instruction leaflet. Six days later he noticed a depression in his forehead. A head CT scan was performed demonstrating a depressed fracture of the anterior wall of the left frontal sinus. The fracture was treated by open reduction and internal fixation.

In this case, the treating doctor used NICE HI guidelines in the assessment of a swelling over the supraorbital frontal bone, which is part of the skull. From a radiographic point of view, the frontal sinus is visualised as a part of the upper third of face represented by the area above the superior orbital margin. Classically, the occipitofrontal and lateral radiographs of the upper third of the face are taken to detect this fracture.³

The frontal sinuses lie deep to the frontal squama in the frontal bone. The size and shape of this sinus varies among individuals and between the two sides. The anterior wall of the sinus is considered the stronger of the two tables. The posterior wall separates the sinus from the anterior cranial fossa and is much thinner. The frontal sinus is extremely

resilient to injury. However, high velocity impact, such as motor vehicle accidents and assault, can result in frontal sinus fractures.

This case indicates a lacuna in current practice. Since the introduction of NICE HI guidelines skull x rays are rarely done. It is the authors' contention that when there is a large haematoma in the supraorbital area, following significant trauma to the forehead, emergency department practitioners should request facial bone x rays that include a lateral view of the frontal bone. This should be the case if a CT scan of the head is not indicated. The reasoning behind this recommendation is to detect a facial fracture and must not be confused with NICE HI guidelines, which are designed to identify brain injury.

B P Shrivast, T S Huseyin, K A Hynes

Accident and Emergency Department, Barnet Hospital, Barnet, UK; brijendra.shrivast@bcf.nhs.uk

doi: 10.1136/emj.2005.029306

Competing interests: none declared

References

- 1 NICE. Head injury. Triage, assessment, investigation and early management of head injury in infants, children and adults. Clinical Guideline 4. Developed by the National Collaborating Centre for Acute Care. National Institute for Clinical Excellence, 2003.
- 2 Royal College of Radiologists. *Making the best use of a department of clinical radiology. Guidelines for doctors.* Fourth edition. London: The Royal College of Radiologists, 1998:74.
- 3 Nicholson DA, Driscoll PA. *ABC of Emergency Radiology.* London: BMJ Publishing Group, 1995.

Intranasal alfentanil for acute pain in children

Traditionally, the intranasal analgesic drug of choice in children has been diamorphine. Prompted by the Department of Health bulletin in December 2004,¹ warning of an impending shortage of diamorphine, we sought a viable alternative intranasal drug for providing analgesia for children with acute pain.

Alfentanil has a favourable pharmacokinetic profile for nasal administration with maximal plasma concentrations at 9 minutes and calculated bioavailability of 64.96%.² It has been suggested from separate studies that intranasal alfentanil is safe and effective for premedication in children³ and comparable to intravenous for postoperative pain relief.⁴ Its relatively short duration of action also means that lengthy (longer than 2 h) observation after using the drug is unnecessary.

We report our experience in using intranasal alfentanil as the initial analgesic administered to children presenting to the emergency department in acute moderate to severe pain. A dose of 0.01 mg/kg alfentanil in 0.2 ml of solution was administered through atomiser to children without contraindications to either route or drug. Thirty six patients received the drug over a 2 month period, with a median age of 8 years (range 1.5–16 years), and 1.8:1 male:female ratio. Median dose administered was 0.275 mg (range 0.1–0.7 mg). Ninety four per cent of children received the drug for orthopaedic injuries (n = 33). No adverse events were recorded. Thirty per cent of patients (10/33) required further analgesia or regional anaesthesia to facilitate further emergency department management, and all of these were admitted to hospital. Fifty six per cent (20/36) of all

patients required admission but none was because of drug effects. Nursing and parental acceptability was high for both ease of administration and analgesic effect.

Intranasal alfentanil has proven to be safe and effective in providing adequate pain relief in our experience in a selected paediatric population. Further evaluation is warranted, and ongoing.

J Brenchley, S Ramlakhan

Emergency Department, Barnsley District General Hospital, UK; jane.brenchley@bhnft.nhs.uk

doi: 10.1136/emj.2005.029165

Competing interests: none declared

References

- 1 http://www.dh.gov.uk/publicationsandstatistics/pressreleases/pressreleasenotices/fs/en?content_id=4099536&chk=gfksyg (accessed 23 December 2004).
- 2 Schwagmeier R, Boerger N, Meissner W, *et al.* Pharmacokinetics of intranasal alfentanil. *J Clin Anesth* 1995;**7**:109–13.
- 3 Ozcengiz D, Akman H, Ozbek H, *et al.* Intranasal alfentanil application in children for premedication. *Turk Anesteziyoloji ve Reanimasyon* 1996;**24**:15–18.
- 4 Ozbek H, Ozcengiz D, Unlugenc H, *et al.* The effects of intranasal and intravenous alfentanil administration on postoperative pain relief. *Agri* 1998;**10**:64–7.

"Street" supplies of the anticoagulant drug warfarin: a worrying new trend

Increasingly, physicians in emergency departments are seeing cases of injecting drug users (IDU) with dangerously high International Normalized Ratio (INR) results. Some of these patients have admitted to buying warfarin from a "street" source and taking the medication without INR monitoring. This group are known to be at significant risk of developing venous thrombo-embolic disease¹ and have difficulties in accessing healthcare.²

The risk factor of femoral vein injecting and recognition of progressive symptoms of deep vein thrombosis (DVT) is common. Many IDU are also aware of treatment with warfarin, and, hence, self-diagnose and treat using street acquired warfarin.

Complications associated with warfarin treatment include major haemorrhage. Also, a sub-therapeutic INR does not protect against thrombus propagation and pulmonary embolism.

A 37-year-old man with a long history of injecting drug use, was admitted with extensive bilateral DVT, multiple septic pulmonary emboli and pneumonia with a para-pneumonic effusion. During admission a temporary, indwelling inferior vena cava filter was inserted.

The patient failed to attend follow-up, although he continued to take warfarin, purchasing it from a fellow IDU who obtained the drug on prescription. When the patient's INR was checked 2 months later, it was >10.

This patient bought warfarin from a street source. He self-administered the anticoagulant in an attempt to treat and prevent worsening symptoms. We are aware of a number of other people presenting with bleeding symptoms to accident and emergency. These people indicate a willingness to have the correct treatment, however, an inability to access healthcare. Improved education and provision of healthcare facilities aimed at this group are

recommended to prevent complications associated with treatment of venous thromboembolism. This letter illustrates the need for clinicians who treat IDU to be aware of unexplained haemorrhagic complaints, which may be due to the use of street acquired warfarin.

D J Dawson

Manchester Royal Infirmary, Manchester, UK

L Peters

Manchester Drug Service, Bolton, Salford and Trafford Mental Health Trust, Prestwich, Manchester, UK

Correspondence to: Debbie Dawson, Emergency Department, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, UK; debbie.dawson@mmc.nhs.uk

doi: 10.1136/emj.2005.030346

References

- 1 **McColl MD**, Tait RC, Greer IA, *et al*. Injecting drug use is a risk factor for deep vein thrombosis in women in Glasgow. *Br J Haematol* 2001;112:641–3.
- 2 **Ellis BH**, McCan I, Price G, *et al*. The New Mexico Treatment Outcome Study: Evaluating the utility of existing information systems. *J Health Care Poor Underserved* 1992;3:138–150.

Prevalence of psychological distress assessed in emergency departments

Mental health in general, and undiagnosed psychiatric illness in particular, has been recognised as important concerns in emergency departments (EDs). They have been a focal point for acute healthcare services in Australia.^{1,2} This research examined the prevalence of non-specific psychological distress among people admitted through ED, who had chronic and complex conditions, and were aged 50 years and over.³ Patients over 50 years were selected because of the increased likelihood of the onset of chronic conditions. A chronic patient was defined as an ED admission with two or more presenting comorbidities for at least 6 months prior to admission. This group was matched with people from the New South Wales (NSW) Health Survey who reported any of the following conditions: high blood pressure, diabetes, cancer, or heart problems. Psychological distress measured by Kessler 10 (K10)³ was used because this instrument has been validated in large population based surveys and allows valid comparisons with the 1997 NSW Health Survey data.⁴

The interviews took place in ED or shortly after in the general ward; therefore, it was not possible for the researchers to know whether a psychiatric consultation was conducted after admission to hospital or not.

Altogether, 524 ED patients were interviewed on admission in a principal referral hospital in Sydney, Australia. These were a representative sample of all ED attendees to this hospital. A total of 12.4% (95% CI: 9–15%) had a severe (very high) level, 21.4% (95% CI: 17–25%) had a high level, 31.3% (95% CI: 27–35%) had a moderate level, and 34.9% (95% CI: 30–39%) had a low level of psychological distress or no distress. Eight percent (95% CI: 5–10%) of patients who completed the K10 had at least one mental health related condition (ICD-9 codes: 290–319). More females than males reported non-specific psychological distress but age differences were not large for the severe (very high) group.

Table 1 shows the demographic characteristics of admitted patients who completed K10 versus the total population of patients during the study period and data from age-matched people in the NSW State Health survey. The differences in age, gender, or marital status were not statistically significant.

In the comparison with the state wide survey,⁴ the rates of psychological distress from our study were higher than the population wide health survey estimates.

We acknowledge that the sample was drawn from a single geographical region and any generalisation to the broader NSW community cannot be made. Further, the findings of the study are based on self reported information provided by patients and some potential for reporting bias may have occurred because of respondents' interpretation of the questions or desire to report their emotions in a certain way or simply because of inaccuracies of responses because of recall bias.

In conclusion, these findings suggest that high levels of psychosocial distress in ED attendees pose additional challenges for "whole patient" health services delivery, given that ED services are frequently used as the gateway to the health system.

This suggests that when patients are admitted to hospitals through ED for clinical reasons not linked to obvious psychiatric problems, psychological distress in ED may be under reported (by patients) and not treated (in ED). The major finding is that psychological distress in ED is more common than population based estimates; therefore, it may require population health strategies to address mental health problems in ED, especially when it is associated with chronic illness.

R Forero, L Young, K M Hillman

Simpson Centre For Health Services Research, Liverpool Hospital, Liverpool, NSW and University of New South Wales, Australia

A E Bauman

School of Public Health, University of Sydney, Australia

R Forero, S Ieraci, L Young, K M Hillman

Sydney South West Area Health Service, Sydney, Australia; r.forero@unsw.edu.au

doi: 10.1136/emj.2005.029090

Competing interests: none declared

References

- 1 **Kalucy R**, Thomas L, King D. Changing demand for mental health services in the emergency department of a public hospital. *A&NZ J Psychiatry*. 2005;39: 1, 2, 78–80).
- 2 **Smart D**, Pollard C, Walpole B. Mental health triage in emergency medicine. *A&NZ J Psychiatry* 1999;33:57–66.
- 3 **Kessler RC**, Andrews G, Colpe LJ, *et al*. Short screen scales to monitor population prevalence and trends in non-specific psychological distress. *Psychological Med* 2002;32:959–76.
- 4 **Public Health Division**. Report on the 1997 and 1998 NSW Health Surveys. NSW Health Department, Sydney 2000. http://www.health.nsw.gov.au/public-health/nswhs/mhealth/mhealth_intro.htm (accessed 31 March 2005).

Consent in emergency research

The legal basis for consent for research in the incapacitated patient changed on 1st May 2004, when the Medicine for Human Use (Clinical

Table 1 K10 scores and demographic characteristics of admitted patients through ED

Kessler 10 Categories	Study sample % (n = 524)	% With comorbidities	1997 NSW Health Survey* Chronic group (%) Non-chronic group (%) (n = 1121) (n = 789)	
Very high (30–50)	12.4	7.7	6.1	4.1
High (22–29)	21.4	13.4	13.0	9.0
Moderate (16–21)	31.3	7.9	23.2	22.9
Low (10–15)	34.9	4.9	57.7	64.0
Mean score (95% CI)	19.6 (18.9–20.3)		16.55 (16.1–16.9)	15.48 (15.0–15.9)
Demographic characteristics	K10 sample in ED (%, n = 437)	Reference population†, all attendees to this ED (%) (6385)	Chronic diseased group (1144)‡ %	Non-chronic diseased group (797) %
Age				
50–59 y	16.9	24.5	27.3	46.9
60–69 y	28.4	25.9	33.0	25.7
70–79 y	35.7	28.2	28.8	18.6
80 y +	19.0	21.5	10.8	8.8
Sex				
Males	54.5	52.1	44.9	45.3
Females	45.5	47.9	55.1	54.7
Marital status				
Separated/divorced	59.0	58.6	14.1	16.1
Single	25.5	23.1	5.2	5.4
Widowed	3.4	5.4	26.8	22.2
Married	6.4	6.2	53.9	56.2
Unknown	5.7	6.7	–	–

*People 50 years and older who reported to have attended emergency department at least once in the last 12 months.

†All emergency department attendees at this hospital between January 2002 and January 2003.

‡Chronic disease group (those who reported high blood pressure, or diabetes, or cancer or heart problems).