Alternative models of primary care

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24 Dale J, Rennie D, Roberts J, Tyson L. Minor injury services: a major public concern: an option appraisal for Bromley Health. London: King's College School of Medicine and Dentistry, Department of General Practice and Primary Care, October 1994.
GENERAL RESUSCITATION

The ABCs of resuscitation are rigidly adhered to in severe or life threatening anaphylaxis, with emphasis on prophylactic intubation if impending laryngeal obstruction is suspected. An endotracheal tube one or more sizes smaller than usual is recommended.15 If endotracheal intubation cannot be achieved a surgical airway maybe a life saving procedure.

Adrenaline and infusion of intravenous fluids have a synergistic effect in the treatment of anaphylaxis.5 10 Significant hypotension (fall in systolic blood pressure of more than 20 mm Hg) and tachycardia are features of moderate (grade II) anaphylaxis and should be treated with 10 ml/kg colloid intravenous fluid. Higher volumes (20 ml/kg) should be infused in severe cardiovascular collapse (grades III–IV).

As soon as airway problems appear likely, or for adrenaline resistant anaphylaxis, the involvement of an intensive care specialist is critical. Adrenaline infusion5 7 11 measuring filling pressures, and using other sympathomimetic drugs13 (for example, a noradrenaline infusion) may be beneficial. If the patient is on a β blocker, intravenous salbutamol or glucagon, or both, should be used. Glucagon is well established and should be considered in protracted anaphylaxis14: 1 mg boluses up to 3 mg (half doses in children) should be followed by an infusion of 1–5 mg/hour. Consolidating treatment with antihistamines and steroids should follow.

Conclusions

Key points which need re-emphasising are that for severe or life threatening anaphylaxis with cardiovascular collapse, immediate but careful administration of high dilution (1:10 000 or 1:100 000) intravenous adrenaline in a controlled titrated manner is required, with early involvement of senior doctors, and there should be a systematic approach to allergic emergencies with attention to prevention of future episodes.


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Prehospital intravenous nalbuphine hydrochloride

69:433 in 1991 to 87:917 in 1996 is statistically significant ($\chi^2 = 9.1397, p = 0.003$). This almost certainly represents an increased use of the ambulance service by patients with less acute conditions over the five year period. Emergency ambulance calls in the catchment area have shown an average increase of 6.7% each year over the same period (Westcountry Ambulance Trust Service statistics).

If the administration of parenteral analgesia by doctors in the A&E department is taken as defining those patients who need analgesia, there has been an increase in the proportion given analgesia prehospital from five of 69 (7.25%) in 1991 to 36 of 87 (41%) in the current study. Table 3 shows that there may be scope for further improvement if the indications for nalbuphine were extended (13 fell outside the protocol) and all paramedic crews were fully trained to give nalbuphine (three were not qualified to give nalbuphine).

Sixty seven per cent of patients given prehospital analgesia required further parenteral analgesia in the A&E department. This was not entirely unexpected, as repeat doses of analgesia would often be given for many of the conditions encountered. Fourteen patients who received the maximum dose of 20 mg required further analgesia in the A&E department. These figures suggest that more patients might benefit from nalbuphine and a maximum dose of 30 mg rather than 20 mg might be more appropriate. Since completion of this study, doses of 30 mg have been given on several occasions by paramedics without any complications, following telephone consultation with a senior A&E doctor. Paramedics have been fully trained in the use of naloxone for reversal of respiratory depression caused by nalbuphine. Any increased use of nalbuphine must also be balanced against the increased on-scene time, with other implications on patient care.

The questionnaire highlighted various points. Not all ambulance staff are currently qualified to give nalbuphine. Patients may not initially complain of pain to the ambulance personnel or may refuse opioids and opt for entonox, which may provide sufficient analgesia. Nalbuphine is currently given for a relatively narrow spectrum of conditions, and contraindications for its use featured prominently in the reasons for not giving it. There may be scope for extending its use for non-traumatic conditions such as back pain, renal colic, and abdominal pain after telephone advice from an experienced A&E doctor, and also in a few stable patients with more than one injury.


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**Faculty of Accident and Emergency Medicine**

**Exit examinations**

The next Diet of the Faculty’s Exit Examination will be on 6/7 May 1998 at the University of Edinburgh.

Inquiries to the Faculty of Accident and Emergency Medicine, 35-43 Lincoln’s Inn Fields, London WC2A 3PN; tel +44 (0)171 405 7071.
Prescribing analgesics: the effect of patient age and physician specialty

M Hauswald, C Anison
Pediatric Emergency Care 1997;13:262–3

Overview—This is a survey of the analgesic prescribing habits of paediatricians, emergency physicians, and family practitioners when presented with a history of a patient with severe otitis media that has caused two sleepless nights. Some doctors were given the patient's age as two years and others as 22 years.

Results—137 of the 165 surveys of the surveys were returned in a usable form. Overall 80% of the doctors would have prescribed oral analgesia, 28% would have given opioid analgesia. Children and adults would have been equally likely to receive analgesia. However, the adults received significantly more prescriptions for narcotic analgesics (Fisher's exact test, p = 0.03). When comparing the three specialties the investigators found that there was no significant difference in the prescribing habits of paediatricians and family practitioners overall (83% and 81% respectively received analgesia) or for narcotics (20% and 23% respectively). Emergency physicians used analgesics in all patients; 50% of the time these contained opioids. This was significantly different from the paediatrician and family practitioner groups. Only seven patients (one child) received stronger opioid analgesia than codeine.

Conclusions—(1) Narcotic analgesics are often not prescribed for otitis media; (2) children are less likely to receive analgesics than adults, especially opioids; (3) emergency physicians are more likely to prescribe stronger analgesics than paediatricians or family practitioners.

Critique

Was the study original? The questions being asked in this study are not new, and several similar studies have been carried out previously (these are cited). Investigations carried out more than 10 years ago arrived at similar conclusions. It therefore becomes another study in a long list.

Was the study design sensible? There are two different questions to be answered: how did practice vary with respect to the age of the patient, and how did it vary with respect to the specialty of the doctor? If the emergency physicians and family practitioners were the only groups taking part this would be valid; however, the paediatricians were given data relating only to the two year olds but were included in the totals when the comparisons were made.

Were the statistics appropriate? Fisher's exact test was used to analyse the data; this seems appropriate given its non-parametric nature. The sample size was small (137 replies), especially when divided into specialties: 32 emergency physicians, 65 family practitioners, and 40 paediatricians. The emergency and family doctors were also then subdivided into those treating the two year olds and those treating the 22 year old.

Are the conclusions valid? The comparison between specialties is difficult, for example the emergency physicians’ prescription of narcotics to all patients is compared with the paediatricians’ prescription to two year olds—that is, 50% compared to 20%, respectively; however, if only two year olds were considered the relevant comparison becomes 38% v 20%. Would this now be statistically significant?

Extrapolation—Overall the investigators indicate that we still have significant problems with regard to prescribing adequate analgesia, especially for children. This is probably true.

Use of fax facility improves decision making regarding thrombolysis in acute myocardial infarction

V S Srikathanan, A C H Pell, N Prasad, G W Tait, A P Rae, K J Hogg, F G Dunn
Heart 1997;78:198–200

This is a prospective audit comparing the senior house officers' decision making accuracy with that of the consultant, using information faxed to their home. Consultant intervention allowed four patients to benefit from thrombolysis who would not otherwise have received it, and stopped eight patients receiving thrombolysis inappropriately.

Further analysis of their results led the researchers to conclude that there was good agreement between the SHO and consultant in identifying inferior myocardial infarcts and left bundle branch block; however, SHOs tended to misinterpret the findings in patients with anterior infarcts, despite guidelines being available.

Comparison of silver sulphadiazine and paraffin gauze dressings in the treatment of fingertip amputations

M S Riyat, F G O'Dwyer, D N Quinton
Journal of Hand Surgery 1997;22B:530–2

Forty patients aged between 16 and 70 with grade 1 or grade 2 finger tip injuries were included in this randomised trial. At review 24 to 36 hours after initial treatment they were randomised into two groups: one group received paraffin gauze dressings applied weekly; the other group received silver sulphadiazine applied to the stump and covered with the finger of a plastic glove. An absorbent dressing was then applied; this was changed twice weekly by the patient until healing was complete.

Dressing changes during the first two weeks of the study were more comfortable with silver sulphadiazine (p = 0.059 and p = 0.072), but by week 3 the silver sulphadiazine treated fingers were more sensitive to touch (p = 0.058). The number of days to discharge was less in the paraffin gauze group (p = 0.0066). Finger length appeared better preserved using silver sulphadiazine (p = 0.0637 at three months and p = 0.0282 at six months). Of the 40 patients originally recruited, 24 completed the study; however data for only 17 appeared to be available for assessment of finger length at six months.

Emergency planning in the National Health Service: does central guidance reach those who need it?

R Cocks
Health Trends 1997;29:19–20

This survey looks at the receipt of information sent from the Department of Health to regional health authorities by accident and emergency department lead consultants. Two hundred and fifteen accident and emergency department heads were sent questionnaires; 174 responded during the study period (three months from May 1995). The documents examined were HC (90) 25, regarding hospital major incident planning; HSG (93) 24, regarding contracting and the funding of
major incident exercises; HSG (93) 38 dealing with chemical incidents; and HSG (94) 52, regarding protective clothing. It was found that only 24% of the unit heads had seen all four, 16% three, 11% two, 14% one, and 35% none; 51% had received the main planning document HC (90) 25.

The author suggests that instead of the information being sent to an anonymous body it should be sent to named post holders and that health emergency planning advisers have an important role to play in monitoring the implementation of central guidance. Have you seen all these documents?

Prophylaxis after occupational exposure to HIV
P Easterbrook, G Ippolito
British Medical Journal 1997;315:557–8

This editorial reviews the changing practice of giving antiviral drugs to patients after needlestick injuries and other exposure to infected blood and body fluids. Recent Department of Health guidelines advocate that A&E departments should stock “starter packs” of antiviral drugs and dispense these after possible recipients have been “fully informed of the risks, and the rationale for treatment.” To be effective the treatment should be started within one to two hours of exposure.

A minor injury, such as a needlestick, might wait two to three hours before being seen and then the patient might find the average A&E doctor untrained in counselling on the risk/benefit of antiviral prophylaxis. Given the need for early treatment, this does seem to be an emergency, but if A&E is to be responsible for starting treatment there are obviously procedural, training, and guideline implications for YOUR department.


Meta-analysis and the meta-epidemiology of clinical research
C D Naylor
British Medical Journal 1997;315:617–19

Meta-analyses are being used increasingly as a research tool and to review the evidence for treatments. Some can be very useful and the techniques are well explained in the article by Egger and Smith in the BMJ. There are pitfalls and drawbacks in many methods, and the papers by LeLorier et al and Naylor examine the accuracy of meta-analysis and reveal some disturbing results.

The LeLorier study compared the results of meta-analyses with subsequent large randomised controlled trials that were published in one of the following journals: New England Journal of Medicine, Lancet, Annals of Internal Medicine, and the Journal of the American Medical Association. Twelve large randomised controlled trials were identified, and all the trials included had to have adequate statistical power. Nineteen meta-analyses answering the same questions were then found. They next analysed the outcomes of the trials and meta-analyses and found that for a total of 40 primary and secondary outcomes agreement was only fair. The BMJ editorial and articles in the same issue highlight some surprising information revealed by meta-analyses, such that a single trial was published on seven occasions. Understanding meta-analysis is becoming a requirement of reading research journals and these articles attempt to give guidance on appraisal of the quality of papers that use this technique.

Radiographic detection of gravel in soft tissue
C D Chisolm, C O Wood, G Chua, W H Cordell, D R Nelson

In this randomised blinded study the authors used a standard sized wound in 160 chicken legs to implant pieces of gravel of four different types, ranging in size from 0.25 mm to 2 mm. From one to four pieces were placed in each leg wound; controls had leg wounds with no gravel. The chicken legs were then x rayed. Three radiologists interpreted the films and three emergency residents followed the same procedure. The investigators found that 1 mm and 2 mm particles were accurately identified in 97.7% of cases, but 0.25 mm and 0.5 mm particles were only identified in 75% of cases. The radiologists were more specific but the emergency residents were more sensitive.

Using the hand to estimate the surface area of a burn in a child
T R Nagel, J E Schunk
Pediatric Emergency Care 1997;13:254–6

The investigators asked the question “is the palm or the whole of the palmar surface of the hand the best guide for estimating the percentage burn in a child.” They used standard nomograms to calculate the surface area of 91 children. They then photocopied the child’s palm and worked out the surface area. They found that the entire palmar surface represented 0.94% (95% confidence interval 0.93% to 0.95%) of the total body surface area, and the mean percentage by the palm alone was 0.52% (0.51% to 0.53%). They concluded that the entire palmar surface of the hand including the fingers more closely approximates 1% of body surface than the surface of the palm alone. My 1993 edition of the ATLS manual states “remember the palm (not including the fingers) represents approximately 1% of the patient’s body surface.” This article therefore makes a very important point. However, exactly the same methodology and findings were published in the BMJ in May 1996.1

Atrial fibrillation
S M Narayan, M E Cain, J M Smith
Lancer 1997;350:943–50

The authors provide us with a comprehensive algorithm to simplify treatment of this relatively common condition. In most cases accident and emergency medical staff would be unlikely to treat once the condition is identified, or to provide any further management other than appropriate referral. If the patient is haemodynamically unstable, synchronised dc cardioversion should be the initial treatment: 100 J is successful in 50% of cases and 200 J in 85%. Pharmacological cardioversion may also be tried in acute atrial fibrillation. Flecainide, propafenone, and amiodarone are the most successful drugs at doing this. Cardioversion by any method results in a stroke risk of 3%. Therefore in emergency cardioversion the authors suggest it may be prudent to heparinise the patient, and then give warfarin for at least four weeks. Warfarin has been shown to reduce the annual incidence of stroke from 4.5% to 1.4%, the mortality rate by 33%, and the combined outcomes of stroke, systemic embolism, or death by 48%, with a 1.3% risk of haemorrhage. However this potential for haemorrhage must not be forgotten in
the accident and emergency department when these patients are seen with seemingly innocuous head injuries.

EMERGENCY CASEBOOK

Development of tension pneumothorax after chest drain insertion

A 50 year old man presented by ambulance to the accident and emergency department following a road traffic accident. He had been driving a car which collided with a tree. The impact had been on the driver’s side of the car. He had been wearing a seat belt and was not entrapped. There was no head injury or any loss of consciousness. On arrival he was confused and complaining of severe right sided chest pain.

Management was according to ATLS principles and revealed a right sided flail chest associated with multiple rib fractures, pulmonary contusion, and marked hypoxia (Po2, 5.7 kPa and SpO2, 78% on 15 l of oxygen by trauma mask). In view of these findings the patient underwent a rapid sequence induction of anaesthesia, endotracheal intubation, ventilation, and insertion of a 32G intercostal drain on the right side. This improved his SpO2 to 96%. The drain discharged 200 ml of blood and was noted to be swinging with respiration. A check chest x ray confirmed satisfactory placement of the drain, but also a widened mediastinum which had not been apparent on the initial chest x ray. His condition was stable so thoracic computed tomography was arranged to exclude aortic arch injury. While this was being done his clinical condition suddenly deteriorated. He became hypotensive (BP 70/40) and tachycardic (HR 130/min) with no improvement after a rapid infusion of colloid. On examination of the scan (fig 1) it became apparent that he had developed a right sided tension pneumothorax. Following decompression and insertion of a second intercostal drain his clinical indices returned to normal.

This patient developed a life threatening tension pneumothorax despite the insertion of a large intercostal drain. It is postulated that the drain either kinked during transfer or became occluded with blood clot. The presence of the drain led to a delay in diagnosis as it was assumed that this particular potential complication had already been dealt with. As ATLS and common sense suggests, whenever a trauma patient deteriorates the primary survey must be repeated. An assumption that any tube previously inserted has become blocked or displaced will prevent serious complications being overlooked.

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LETTER

Measurement of pain in children in the emergency department

EDITOR.—Despite increased awareness of "dil- 
gyanagelasia" in the paediatric population, children in acute pain are often undertreated. Effective pain management requires accurate assessment, appropriate analgesia, and monitoring response to treatment. Various tools have been developed to aid the assessment of pain in children. However, at present there is no accepted measure of pain or its response to analgesia in the acute accident and emergency setting. We carried out a study investigating the use of two self report tools—a visual analogue scale (VAS) and a five faces scale—in our A&E department.

We found that the five faces scale was a reliable measure in children aged four years and over. Although the faces scale could be used in some children aged three years, the failure rate was 50%. The VAS was only useful in children aged six years and over. These findings are consistent with studies in other settings. Self report pain measurement tools are useful in assessing intensity of pain in children and in measuring the effectiveness of analgesia given in the A&E department. Although both the VAS and the faces scale were successfully applied, the faces scale is preferred because it may be applied to a wider age group, is simpler to administer, and is easier to use in a busy department.

L FERGUSON
T F BEATTIE
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BOOK REVIEW


This CD-ROM package from the Royal Botanic Gardens at Kew and the Guy’s and St Thomas’ Poisons Unit, is designed to help staff with no botanical knowledge to identify plant material quickly and easily. It covers around 2000 plants in 214 groups and gives details of their toxic effects. You will need some serious computer hardware and the software costs about £175 for a year’s subscription, so it doesn’t come cheap.

Poisonous plants in Britain and Ireland helps to identify plants from their leaves, stems, fruit, flowers, seeds, or roots. It is interactive and the user is asked several questions about the plant material that is available. The questions are not particularly technical and are illustrated by simple line drawings. There is an easy to use glossary which explains some of the botanical terms and a question can be skipped if the answer is not known. The questions narrow the field of possible suspects until only five or fewer remain. The user can then view the superb photographs of the suspects and compare them to the plant material available. Where a plant is listed on the database, it is usually identified easily and there is a good description and sound advice on toxicity. Treatment advice is usually limited to an invitation to contact the Poisons Unit.

Unfortunately, the database is not exhaustive: most toxic plants are included, but the makers point out that exclusion from the database does not necessarily mean that the plant is non-toxic. Some patients will still be treated on clinical grounds, without a formal identification of the offending plant.

Apart from its cost, there are a few other limitations to Poisonous plants in Britain and Ireland. Firstly, it does not cover mushrooms or toadstools, which are commonly ingested by children. Secondly (and rather irritatingly), it does not allow the user to see a description of a plant and its toxicity if only the common name is known. The photographs, description, and toxicity data can be reached from the Latin name but this is clearly only useful if you happen to know the Latin name of the plant—not particularly likely in our department. A few minor technical problems make the program a little less user friendly than it could be and we shall write to the makers with our comments on these.

In its current format, Poisonous plants in Britain and Ireland should perhaps be viewed as a helpful luxury rather than an essential tool for every A&E department. However, it is continually developing and annual revisions are planned so it should be increasingly useful in the future.

STEVEN CRANE
ADRIAN KERNER
Leeds

Fourth World Conference on Injury Prevention and Control
Building partnerships for safety promotion and injury prevention
17–20 May 1998, RAI Congress Centre, Amsterdam

The Fourth World Conference on Injury Prevention and Control will stress the need for building an international community for injury control management and for sharing experiences in the different countries of the world. It will encompass a rich variety of knowledge and experience in the various sectors concerned, including:

- control of road traffic injury
- safety at work
- home and leisure safety
- prevention of sports injury
- prevention of interpersonal and self inflicted violence

It will pinpoint divergences as well as similarities in different countries and regions in terms of the need for control programmes, the approach to injury control, and the techniques applied and achievements made in closing the gap between research and intervention.

The conference is an initiative of the World Health Organisation and its collaborating centres for safety promotion and injury control. The Consumer Safety Institute is the coordinating institute in the host country.

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