PostScript

LETTERS

New recommendation for N-acetylcysteine dosing may reduce incidence of adverse effects

National Poisons Information Service (NPIS) guidelines for the treatment of paracetamol overdose recommend the use of intravenous N-acetylcysteine (NAC) in a dose calculated according to body weight (kg). Available on Toxbase (<http://www.spib.axl.co.uk>). We recently treated a 180 kg patient who had overdosed on paracetamol, prompting us to question this guidance.

Paracetamol overdose is the most common method of deliberate self-poisoning in the UK.¹ NAC is the well established antidote for the treatment of potentially harmful paracetamol overdose. It acts by providing an exogenous source of glutathione to conjugate the hepatotoxic metabolite, n-acetyl-p-benzoquinoneimine, of paracetamol. NAC is water soluble and is distributed within the vascular compartment. The dose recommended by the NPIS is calculated according to body weight. This method of estimating a person's plasma volume becomes inaccurate in obese patients as the increase in body mass is not reflected by a similar increase in plasma volume.

NAC is known to cause adverse effects in up to 10% of patients, including anaphylactoid reactions such as hypotension, tachycardia, bronchospasm and respiratory distress.² Accidental overdose of NAC has been fatal² and it is likely that anaphylactoid reactions to NAC are dose-related. NAC has been shown to produce dose-related vasodilatation of human subcutaneous arterioles at the same concentrations that produce anaphylactoid reactions.³ It would, therefore, be of benefit to reduce an individual's dose if the therapeutic effect could be maintained.

Following communication with the NPIS, via our hospital drug information service, a ceiling weight of 110 kg has now been recommended in the NPIS guidelines for calculating NAC dose in paracetamol overdose. This was published on Toxbase on 27 June 2005. We hope this reduces the incidence of adverse reactions when managing paracetamol overdose in obese patients.

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RD made the initial query and wrote the letter. GC made the formal enquiries leading to the change in guidelines. BP has edited the letter and acts as guarantor.

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Green fingers, red eyes! Ocular hazards of gardening

A 69 year old female presented with red, painful eyes and blurred vision. She had been pruning an euphorbia plant. Vision was reduced in the right eye (6/18) and normal in the left. There was bilateral conjunctival injection with the right eye having a hazy cornea, large corneal epithelial defect, and fibrinous uveitis.

Copious irrigation was carried out and the ophthalmology department was consulted. The patient fully recovered after treatment with intensive dexamethasone to the right eye and chloramphenicol drops to both eyes.

Euphorbia is a relatively common ornamental garden plant. It is traditionally used as a remedy for warts, calluses, and verrucas, but it causes a spectrum of inflammation on exposure to the eyes. In severe cases, corneal ulceration and blindness can result. All gardeners should be aware of the hazards of this plant and wear protective goggles. All emergency departments should be alerted to the potential dangers and act expediently to prevent irreversible loss of vision.

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Written consent has been obtained from the patient to publish this image.

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Reference

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Use of intravenous cyclizine in cardiac chest pain

May and Kumar¹ conclude that "cyclizine should be avoided in patients with acute coronary events", although we note that the BETs online version states "there appears to be no firm evidence that cyclizine increases morbidity and mortality in patients with myocardial ischaemia". They reviewed a single 16-year-old study, which looked at a small number of patients suffering from heart failure.

The study by Tan, *et al*,² which was reviewed, contained measurement data when cyclizine was given 30 min before diamorphine. Although cyclizine produced haemodynamic changes, the subsequent diamorphine tended to change those variables toward the basal values, although right atrial and pulmonary arterial pressures remained significantly above basal values. To their credit May and Kumar observe that it was a small study in a very specific group of patients. Tan *et al* quoted work that

Figure 1 A large epithelial defect and gross corneal oedema is seen when fluorescein drops are applied and a cobalt blue slit-lamp filter is used.

concluded cyclizine may be useful if avoidance or prompt reversal of the hypotensive effect of opiate is required.³ It is also relevant to observe that no data were given for simultaneous administration of cyclizine with opiate, because cyclizine is usually administered simultaneously with opiate, considerable caution is required if the conclusions of this study are to be translated into advice about clinical care.

The clinical bottom line begs the question "if not cyclizine, what should I use?" We repeated their search strategy but replaced the "cyclizine" with "metoclopramide" or "stemetil/prochlorperazine", revealing no studies of the effects of these two commonly used drugs. A Cochrane study is being undertaken to review other anti-emetics,⁴ we suggest that a more appropriate conclusion would be "There is the possibility of adverse haemodynamic effects of cyclizine in patients with heart failure, and of beneficial effects in patients with opiate induced hypotension; the effects of other known anti-emetics are unknown."

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Pacing in hypothermia: does it work?

Hypothermia is a relatively common clinical problem in the emergency department. It requires a informed response as regards the physiological changes that occur when there is a significant drop in core body temperature.

We describe the case of an elderly man who appeared particularly resistant.

An 87 year old man was found collapsed outdoors in his coal shed having been there most of the night. On presentation to the emergency department he did not have an oral airway adjunct, oxygen saturations were 82% on 100% oxygen, BP was 65/50, and pulse rate was 64 bpm. In addition, the patient had undetectable peripheral pulses and a GCS of 7 (E1 M4 V2). Core temperature was 24.1°C. Past medical history included depression, hypothyroidism, and a permanent pacemaker inserted for complete heart block. A diagnosis of severe hypothermia was made and rewarming was initiated using standard passive and active techniques, although no invasive measures were used

and the patient was not intubated. The initial ECG showed a paced rhythm of 60 bpm with normal complexes and throughout the rewarming period this was consistent with no arrhythmias of any sort recorded. Despite the need for a small amount of noradrenaline, cardiac rhythm remained constant and the patient made an uneventful recovery to discharge.

Cardiac arrhythmias and ECG changes are common in hypothermia with the incidence increasing as core body temperature decreases.¹ ECG changes include prolongation of the PR, QRS, and QT intervals and the appearance of pathognomonic J waves, while arrhythmias commonly described include bradycardias, atrial fibrillation, and ventricular tachyarrhythmias.² Despite the presence of severe hypothermia in this case, the ECG remained consistently normal and we postulate that this was in fact due to the presence of the internal cardiac pacemaker. Previous reports have suggested that the severely hypothermic heart is unresponsive to pacemaker stimulation, but this case suggests otherwise.³

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Informed consent was obtained for publication of the person's details in this report

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Use of a screwdriver in the emergency department

A 23 year old male attended our department with a history of accidental injury to his left index finger. While attempting to attach a metal screw to a wall using a powered electric screw gun, the patient pierced his finger with a 3.5 cm screw. The point of entry was the extensor aspect of the distal third of the left index finger and the exit was on the flexor aspect of the middle third of the finger (fig 1).

Figure 1 Screw through patient's finger (informed consent was obtained for publication of this figure).

No fracture was seen on x ray.

Local anaesthesia was achieved using a ring block to the finger. An attempt was made to remove the metal screw using traction with a pair of Spencer-Wells forceps. However, this was unsuccessful and we anticipated extensive tissue damage if more force was used. We therefore located a Philips screwdriver (fig 2) from the works department and used this to remove the metal screw. The screw came out easily, with minimum effort and little collateral tissue damage. The patient was reviewed 3 days later and had an uneventful recovery.

This case shows the importance of keeping simple mechanical tools in the emergency department (for example, screwdrivers and wire cutters) along with more conventional surgical instruments. The mechanism of injury gave us the idea to remove the screw using a screwdriver; this approach was nearly effortless and minimised associated tissue damage.

A Medline search did not produce any references where a screwdriver had been used to remove a foreign body in the emergency department. Although we would be surprised if this is the first time that this has occurred, we believe that this is the first time it has been written up.

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Figure 2 Screwdriver used to remove screw.