Hypoglycaemia and hypothermia due to nimesulide overdose

Editor—Although toxicity due to chronic administration of nimesulide has been reported, to the best of our knowledge there is no report about poisoning due to a single ingestion. We report a 20 month old boy who accidentally took a high dose of nimesulide; 40 mg/kg, 8 times the recommended daily dose.

Physical examination was unremarkable. Laboratory findings, including hepatic and renal function, were normal, except for low to borderline glucose concentration (3.27 mmol/l) and mild acidosis (pH 7.35, bicarbonate 16.9 mmol/l). Gastric lavage with activated charcoal was instilled, and to ease the development of hypotension and hypothermia. Hypothermia has been reported to occur in patients with severe agitation and hypothermia. Am J Emerg Med 1999;17:226–30.

Providing it isn’t libellous or obscene, it will be posted within seven days. You can retrieve it by clicking on “read eLetters” on our hompage.

The editors will decide, as before, whether to also publish it in a future paper issue.

We advise frequent monitoring of vital signs and being alert for hypoglycaemia and acidosis in managing acute nimesulide overdose.

Letters to the editor

Rapid responses

If you have a burning desire to respond to a paper published in ADC or FGN, why not make use of our “rapid response” option? Log on to our website (www.archdischild.com), find the paper that interests you, click on “full text” and send your response by email by clicking on “submit a response”.

Providing it isn’t libellous or obscene, it will be posted within seven days. You can retrieve it by clicking on “read eLetters” on our homepage.

The editors will decide, as before, whether to also publish it in a future paper issue.

Pica in sickle cell disease: “She ate the headboard”

Editor,—Within our sickle cell population, there are a small number of school aged children who eat sponge. Knowing that pica—the compulsive ingestion of non-nutritive substances—is more common in tropical countries where cultural and dietary factors play a role, it may not be a surprising finding. However geophagia (soil), pagophagia (ice), and trichophagia (hair) are the commonest harmful substances eaten. We cannot explain the predilection for sponge amongst our patients.

Infants place everything in their mouth, and pica occurs in a variety of syndromes associated with brain damage and developmental delay. It is also more common in deprived and neglected children. Neurological complications are not uncommon in sickle cell disease (SCD) but none of our children had cognitive impairment or reference to Port-A-Cath usage in neurological disease. In this study of 81 children, one child had the device inserted for home administration of medication. This was removed after a portal infection 3 months after insertion.

The benefits to a Port-A-Cath include rapid reliable venous access, low maintenance, fewer restrictions on lifestyle, low incidence of infection and malfunction, when compared with externalised systems. These benefits are attractive for children with a refractory seizure disorder and their families. Rapid venous access is invaluable to the physician when managing status epilepticus.

References

it can be familial suggesting a learnt behaviour, or developmental and emotional issues may be involved. In America it is classified as an eating disorder, in the UK it is considered a behavioural disorder; it can also be an obsessive-compulsive disorder, or a manifestation of depression.

Our children could shed no light on their compulsion. In six cases the parents found the behaviour so unacceptable that they requested psychological intervention and in four, the behaviour has now stopped. Thus whilst we find this behaviour fascinating, we are no clearer in understanding the aetiology of pica for sponge in this small population of children with SCD.

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Letters

Maternal nutrition and pregnancy outcome

Editor,—Symonds et al raise interesting issues about the potential use of animal models in examining the impact of nutrition during pregnancy on future risk of adult disease.1 However, their discussion of recent epidemiological research in humans includes several important factual inaccuracies. The authors imply that our analyses and those of Godfrey et al grouped women into categories of energy intake, and suggest that different results might have been obtained had “all the raw data points [been used] to determine potential relations between maternal nutrition and birth weight”. Yet as clearly indicated in both papers,1,2 this is precisely the analysis that was conducted. For information, figure 1 shows the relations of our maternal energy intake to birth weight in our study. In each paper, the cut points used in tables to illustrate the relationships between energy intake and birth weight were neither “unclear” nor “arbitrary” but were, as stated, tertiles. Symonds et al draw attention to the “striking difference” in energy intake between our study and that of Godfrey et al whilst also suggesting that we should combine our data to determine potential relations between maternal nutrition and birth weight”. Yet as clearly indicated in both papers,1,2 this is precisely the analysis that was conducted. For information, figure 1 shows the relations of our maternal energy intake to birth weight in our study. In each paper, the cut points used in tables to illustrate the relationships between energy intake and birth weight were neither “unclear” nor “arbitrary” but were, as stated, tertiles. Symonds et al draw attention to the “striking difference” in energy intake between our study and that of Godfrey et al whilst also suggesting that we should combine our data to determine potential relations between maternal nutrition and birth weight.1


Maternal nutrition and pregnancy outcome

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Nitrous oxide and vitamin B<sub>12</sub>

Editor,—The paper by Kanagasundaram et al on the use of nitrous oxide to alleviate pain and anxiety during painful procedures fails to mention the effect of this gas on cobalamin metabolism. Nitrous oxide inactivates cob(II)alamin, the active derivative of vitamin B<sub>12</sub>, and essential cofactor for the transfer of the methyl group from methyltetrahydrofolate to homocysteine to form methionine. For subjects with good body methyl stores cobalamin this effect is unimportant, but no-one using this agent should remain unaware of the potentially devastating complications in the nervous system of using nitrous oxide in subjects who are of borderline or deficient vitamin B<sub>12</sub> status. Onset of subacute combined degeneration affecting the brain and spinal cord is a well documented event when individuals with low body stores of cobalamin are exposed to nitrous oxide.

There is a long list of situations which put children at some risk of cobalamin deficiency—for example, diets low in animal products, synthetic feeding of any description, small bowel malabsorption, any prolonged illness with disturbance of feeding behaviour, especially if combined with increased metabolic demands—for example, systemic malignancy or chemotherapy. Children with chronic conditions often need painful procedures, and depleted cobalamin stores may not be apparent unless measurements of serum B<sub>12</sub> are made routinely. What is more, repeated use of nitrous oxide depletes the body stores of cobalamin even in well people.

Given the scale of use which would result from routine use of nitrous oxide in children undergoing painful procedures, there should be real concern about the potential for an accident in a child with occult cobalamin deficiency. The message must be: never forget vitamin B<sub>12</sub> when thinking of using nitrous oxide.

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Figure 1 Birth weights were individually adjusted to the mean sex and gestational age of the cohort and for maternal smoking and height answered by animal experiments (unless one was to make the dubious argument that the errors associated with extrapolating data from animal models to humans are less than those from using self reported data from human dietary intake). We do not argue that maternal energy intake can never be associated with birth weight. Under extreme circumstances, such as those in the animal experiments cited by Symonds, or in Third World countries, it may be. However, this is no basis for suggesting is has any importance to populations in industrialised countries.


The outcome of specialist registrars in the southwest region

Editor,—The UK national directive is to increase consultant paediatric numbers substantially over the next 5–10 years which requires the delivery of suitably trained doctors. Higher specialist training in paediatrics takes five years and there are 200 posts, so the current number of trainees will produce more consultants than there are posts, so trainee numbers will still have to be reduced. The southwest regional training committee has expressed concern that trainees are not completing training within five years for a variety of reasons. We therefore reviewed the training times and outcome of the 90 specialist registrars (SpRs) who have trained in our region since the introduction of the Calman training scheme.

The high proportion of women entering paediatrics needs to be addressed. Our review confirms that 29% of trainees are training flexibly, which will increase their training time for anything up to 10 years. All these are in the flexible training scheme that requires at least 10 hours of formal teaching per week. In regions where trainees have access to the retainer scheme and train for only two sessions per week, training times will be even further extended. Also our training committee is concerned that five SpRs have resigned before completing training. Four of these are women who resigned because, despite working part time, they felt that the career process was incompatible with family life.

Of the trainees who trained flexibly and who have obtained consultant posts, four have chosen to work as part time consultants. The other two would have done so had the opportunity been available. Female trainees will have to train longer than their male counterparts to complete their training and also time out for maternity leave. Moreover, every trainee will not necessarily translate into one whole time equivalent consultant.

In our region 47% of trainees are having their Certificate of Completion of Specialist Training (CCST) date reviewed; the average time for them to complete a five year CCST programme based on current calculations is 6.3 years. Reasons include sickness.
pregnancy leave, time out to undertake essential training in specialties other than paediatrics (for example, anaesthetics for those training in paediatric intensive care), and flexible training. We do not operate a lenient policy for out of programme experience (OOPEx) or leave of absence. We allow OOPEx only for experience that will count towards training. No more than one year is allowed except for those entering an MD or PhD programme, and only four trainees have taken more than one year for research prior to CCST. Moreover, we insist that training in locum appointment for training (LAT) posts in our own region in core paediatrics does count towards CCST. Therefore, in other regions where more liberal policies are operated, or there are more trainees in research posts, training times may be even longer.

Having obtained their CCST, only half of our trainees have currently obtained consultant posts; 75% of the remainder have sought training elsewhere as post-CYST PhD training, lecturer posts, fellowships abroad, or training in another specialty. Therefore the total average training time is further extended. The remaining 25% are locum consultants awaiting a suitable post becoming available. All are geographically restricted and some are also specialty restricted.

Our review would therefore suggest that there is a considerable discrepancy between the number of national training numbers issued and the numbers of doctors wishing, or eligible, to take up consultant posts five years later. These issues need to be taken into consideration in manpower planning and in designing the national service framework for the future.

MARY MCGRAW
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Adrenaline syringes: community perspective

EDITOR—We read with interest the paper by Unsworth regarding the over prescribing of adrenaline syringes. We are sure we are not the only community paediatric team who have similar concerns, although perhaps from a different perspective. Dr Unsworth writes of the safety issues. We have more experience of the practical problems.

Thanks to the availability of prompt training for school staff by community personnel, it is now rare for a child to actually be excluded from school because they have an adrenaline injection device. However, they may very well be excluded from other activities such as guide camp or trips abroad.

There is also the increasing problem of young people with adrenaline injection devices moving on to college or work places. Who should train staff there?

Other problems with adrenaline injection devices in our local community include two being lost on the bus, and one being accidentally fired into the interphalangeal joint of a child’s thumb with the needle becoming bent like a fish hook.

There is also the issue of keeping them in date. Parents often forget to renew them, particularly those kept in school. Whilst it does not need to be kept in a refrigerator, adrenaline does deteriorate in warm conditions, and injection devices should be checked to make sure the adrenaline inside remains clear and colourless.

Often, an adrenaline injection device has been prescribed with no demonstration to the child or family on how to give it, nor when to give it. Surely antihistamine should also be prescribed in every case? In most children, it is the only medication, which is going to be needed. How are the parents to be instructed on when to call an ambulance. They could easily make the mistake of trying to take a deteriorating child to hospital in their own car, instead of calling for an emergency ambulance, or even assuming that they do not need to go to hospital at all if they have given adrenaline. As Dr Unsworth points out, the adrenaline injection does not always save the child’s life.

We would suggest that when an adrenaline injection device is prescribed it must be demonstrated to both the parent and child (if the child is old enough). A dummy pen is helpful for this. Demonstration should be repeated with each repeat prescription of the device. The child and their family should always have a written management protocol, including instructions on expected symptoms, when to give antihistamine, when to call an ambulance, and when to give adrenaline. Such a protocol can then be passed rapidly to the community paediatric team to support the prompt training of school staff.

It is worth remembering that clinical responsibility for the safe administration of a drug rests with the prescriber.

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Adrenaline syringes are vastly over prescribed. Arch Dis Child 2001;84:110–11.

Controversies in paediatrics?

EDITOR—I was very disappointed to see that the first contribution to the Controversy series was not written by a paediatrician. There are plenty of controversial topics in paediatrics, including the one cited. There are also plenty of paediatricians perfectly qualified to discuss issues related to the prompt training of school staff or the care of children. Paediatricians are best placed to assess the integrated needs of a child with medical problems. This principle is very relevant to developing areas of specialisation in which there is short supply of expert advice, such as in allergy. Paediatric allergists assess the impact of the diagnosis on many non-medical facets of a child’s life, including family lifestyle, integration into schools and peer groups, and the facilitation of appropriate independence from parental supervision. It is tiring to have to rehearse the arguments for the adequate protection of subjects at risk of anaphylaxis. Epinephrine (as all doctors should now be calling adrenaline) is not prescribed in clinic or in families with an allergic child. It is part of the integrated management plan, which appears to be effective though difficult to measure.

It is very hard to prove that epinephrine saves lives and I agree that the notional “number needed to treat” with epinephrine to prevent a death from anaphylaxis is very high. Unsworth’s title suggests that this “very high number” (my phrase) is too high. How has he measured that? What is too many? He quotes a prevalence of about 1% of Americans having peanut allergy. That is approximately 3 million subjects. We do not restrict insulin syringes to just a few insulin dependent diabetics because diabetes is so common that we cannot adequately care for all of them. Every allergic child has the right to be told of the potential need to be aware of available care, which is not restricted to the first 100 through the clinic door (if they can find an allergy clinic).

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Laparotomy will not save every patient with a leaking aortic aneurysm. Anaphylaxis will not save every person who has anaphylaxis. Anaphylaxis is a critical situation in which prompt administration of epinephrine may (but occasionally may not) save a life. I think it unarguable that it is better to self treat and probably survive than not self treat and possibly die. Unsworth quotes one early paper about anaphylaxis from the US2 and more recent British data3. These papers all go to more that anaphylaxis was used due to unavailability or inappropriate training and patient confusion, rather than that epinephrine was useless or dangerous. Most subjects did not have epinephrine available.4 Several of the deaths reported by Pumpa and new data confirm5 these were due to incorrect use of available epinephrine. In addition, epinephrine appears to be more dangerous in the hands of doctors who give it IV than in the hands of allergic subjects who self treat. I recommend your readers look at the report on the latest series of food related deaths.6

In the absence of any perfect predictive test, allergists are confined to basing risk of future severe reactions on the just a few variables. The first is a history of previous severe reactions.7 The majority of peanut allergies have had a severe reaction in the past8 and more than 60% have asthma, the second known association with severe reactions.9 According to current opinion, then, even after just one reaction to peanut most subjects are considered at risk of severe future reactions.

Many minor reactions to peanut progress to more severe reactions10 and there are strong data from huge series of challenges, about the positive and negative predictive values of the tests used in allergy clinics.11 Unsworth does not even mention formal challenges, the cornerstone of modern food allergy practice.12 An allergist would prescribe an epinephrine kit on the basis of a positive SPT in the absence of a significant history or formal challenge.13 Children and adults at risk of food related anaphylaxis have enough of life’s pleasures denied to them. The provision of epinephrine
common food allergens causing anaphylaxis and persisted for 5 to 100 years, including in food processing. Anaphylaxis related to foods most commonly occurs in patients who have had previous severe reactions. However, minor initial reaction does not exclude a subsequent severe reaction to peanuts. Any person with a history of anaphylaxis deserves the best available protection. It is reasonable to always have two Epipens available both at home and at school. And a second Epipen provides back up if a faulty technique is used or one syringe is damaged. Anaphylaxis may be biphasic, recurring in 3% of children admitted with anaphylaxis.1

As advocates of children, paediatricians are unlikely to hand out epinephrine syringes without due consideration of the impact on the child and his or her family. A comprehensive plan with written information is essential for any child seen with a food allergy whether or not epinephrine is prescribed. Sichere et al showed 20% of children did not carry epinephrine outside the hospital and only 55% had unexpired epinephrine on them. However, successful demonstration was associated with repeat prescriptions, membership of a lay organisation for food allergy, and being reviewed by a doctor. So, planning packages for schools such as devised by Vickers in Cambridge2 are valuable.

Unsworth states that “Community use should be much more restricted with increased involvement and reliance on trained medical staff”. Food allergy is the most common cause of anaphylaxis in children outside hospital. Early recognition and use of epinephrine is vital for successful outcome. The median time to respiratory or cardiac arrest was thirty minutes after an unprovoked anaphylaxis in one series.3 Surely this implies that the community is the setting where epinephrine should be given by appropriately trained parents and carers to a food allergic child with signs of anaphylaxis. Parents should be empowered as limited resources prevent medical staff being present immediately. Indeed, epinephrine IV by trained medical staff also appears to be more hazardous than the use of epinephrine. Hourihane prescribes “epinephrine” for “most (but not all) subjects who have reacted to peanuts”. He does not say for whom or how many patients do not get the prescription. Those with a previous history of only mild reactions can go on to suffer severe life-threatening reactions,4 so all at risk patients will surely demand adrenaline. He would not prescribe adrenaline in the absence of a significant clinical history of true nut allergy, (and I applaud that) but others regrettably do, and I know from personal experience that once the mistake is made, it is hard to reverse. I like the seat belt analogy, but seat belts have few side effects. Regarding positive and negative predictive values of IgE based allergy blood tests, my point is that often these tests are misleading. Patients with eczema, (a common finding in those presenting with possible nut or food allergy) typically have high background IgE levels and false positives are common.

Dr Abay reminds us that trained medical staff including doctors may administer adrenaline incorrectly. That fact does not justify delegating responsibility to the general public instead. They are surely more likely to make errors, despite training and/or management plans. Expecting the public to confidently decide whether to use the adrenaline or not, is expecting a lot. Fatal episodes do indeed tend to occur within minutes of allergen exposure and can evolve to anaphylaxis rapidly, even in cases where previous reactions have been benign. Families may well misjudge and/or err on the side of caution, giving adrenaline early for what was likely to turn out to be another benign reaction. Hence my keenness for restriction of community use and increased reliance on trained medical staff.

Let us remember that whilst many thousands of children and adults experience unpleasant but benign reactions each year, very very few prove fatal.1 In the community context, focusing on the higher risk groups including asthmatics would be my preference.

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1 Unsworth DJ. Adrenaline syringes are vastly over prescribed. Arch Dis Child 2001;84:410–11
Controversies in paediatrics?

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Arch Dis Child 2001 85: 510
doi: 10.1136/adc.85.6.510

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