Hypoglycaemia and hypothermia due to nimesulide overdose

Editor—Although toxicity due to chronic administration of nimesulide has been reported,1 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 dosage. His mother had accidentally took a high dose of nimesulide; 40 mg/kg, 8 times the recommended dosage. He was admitted to our intensive care unit. After eight hours, his serum glucose concentration was 2.6 mmol/l, venous pH 7.28 and bicarbonate concentration 40 mmol/l. Gastric lavage with activated charcoal was performed. One third N saline in 5% glucose (1500 ml/m2) and ranitidine were started intravenously, and he was admitted to our intensive care unit. After eight hours, serum glucose concentration was 3.44 mmol/l, venous pH 7.28 and bicarbonate 18.5 mmol/l. His systolic blood pressure and body temperature fell to 60 mm Hg and 35.0°C (auxiliary), respectively. The patient was rewarmed and the intravenous infusion rate increased to 2000 ml/m2/day. Six hours later, his serum glucose concentration was 4.44 mmol/l, venous pH 7.33, and bicarbonate 16.5 mmol/l. Body temperature and blood pressure rose and 20 hours after admission all vital signs became normal, mild acidoses resolving within 24 hours. He was discharged after 48 hours. Physical examination and laboratory findings were normal six days after discharge.

The most striking events in our patient were the development of hypotension and hypothermia. Hypothermia has been reported due to non-steroidal anti-inflammatory drugs overdose, but hypothermia due to the antipyretic action of nimesulide has not been reported. Nimesulide produces a dose dependent antipyretic action in rats by inhibiting COX-2, but its effect under normothermic conditions is not known. Although it has been reported that nimesulide might be given to children with hypoglycaemia,2 it may cause hypoglycaemia in high ingestions.

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

E YAPAKCI O UYSAL H DEMIRBILIK O OLAR N NASAR H OZEN
Department of Pediatrics, Hacettepe University School of Medicine, Hacettepe University, Bisan Dajcmanac Çukur Hastanesi, Gastroenteroloji Unitesi, 06100 Ankara, Turkey e-mail: haozen@hacettepe.edu.tr


Port-A-Cath use in refractory seizure disorders

Editor,—The use of a totally implantable venous access system (Port-A-Cath) in children has become widespread in the last 15 years. We report a series of three children for whom the Port-A-Cath improved management of their refractory seizures.

Two patients both females with a diagnosis of severe myoclonic epilepsy of infancy and recurrent status epilepticus presented in the first year of life. Both had seizures, which were intractable to multiple anticonvulsants and became refractory to benzodiazepines. Intravenous immunoglobulin therapy once every 2–3 weeks became necessary for the management of status epilepticus. A Port-A-Cath was inserted in the right subclavian vein under local anaesthesia. A catheter with an external head was fixed to the subcutaneous tissue using a headboard. A Port-A-Cath for anticonvulsant therapy was inserted, followed by wear of the headboard.

The first patient developed a candida albicans infection 9 months after insertion. Amphotericin B was given for 14 days and the Port-A-Cath removed. A second device was inserted after the infection was treated and remains in place 6 years later with no further complications. The second patient had her Port-A-Cath removed after 6 years and 5 months when the catheter blocked. A second device has just been inserted. The third patient has had no complications nine months after insertion.

Port-A-Cath devices are widely used in the management of children requiring venous access for longer than 3 months, when peripheral access is difficult and for administration of medications or blood products.1,4 Children who typically benefit have haemophilia, cystic fibrosis, or malignancies. To our knowledge, there has only been one previous reference to Port-A-Cath use in neurologicol disease.2 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.3 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.

JE BOTHWELL JM DOOLEY KE GORDON EP WOOD
Division of Pediatric Neurology, IWK Health Centre, 5850 University Avenue, Halifax, Nova Scotia Canada B3J 3G9

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 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.

There is a recognised association between iron deficiency and pica, leading to debate as to which is cause and which effect. Natural sponge contains various proteins and minerals, and is often fortified with silica or calcium salts, however, synthetic sponge consists of cellulose alone. We wondered whether a craving of an unidentified salt fuels the eating of sponge, or whether the texture of sponge is simply orally stimulating.

In one study of pregnant women, 35% with pica had a history of childhood pica and 56% had a positive family history. In our children, four have a positive family history of pica. Therefore, pica can be a response to a nutritional deficit,
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.

M ROBERTS-HAREWOOD
S C DAVIES
Department of Haematology, Central Middlesex Hospital, London NW10 7NS marilyn_rae@doctors.org.uk

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. 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 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 in a meta-analysis. We argue that the differences are not particularly striking given the different methodologies used for dietary assessment. It would not be appropriate to combine in a meta-analysis data collected in contrasting ways from women at different stages of pregnancy. In any case, our study individually has sufficient statistical power to detect clinically important effects. In addition, animal experiments above observational epidemiology in humans, Symonds et al confuse two separate issues. First, there is the biologically interesting question of whether maternal diet can influence the outcome of pregnancy. This has actually already been demonstrated in animals. Second, there is the question of whether maternal diet does influence the outcome of human pregnancy. This question is of clinical and public health importance. It cannot be answered by animal experiments (unless one were 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 on 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.

P MATTHEWS
Department of Zoology, University of Oxford, South Parks Road, Oxford OX1 3PS, UK

YUDKIN
A NICHOLSON
Division of Public Health and Primary Health Care, University of Oxford, UK


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 cobalamin, the active derivative of vitamin B<sub>12</sub>, and essential cofactor for the transfer of the methyl group from methylene-tetrahydrofolic to homocysteine to form methionine. For subjects with good body stores of 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 risk of cobalamin deficiency—for example, diets low in animal products, synthetic feeding of any description, small bowel malfunction, 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.

ISABEL SMITH
Clinical Audit Department, Great Ormond Street Hospital, Great Ormond Street, London WC1N 3JH


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 numbers of consultant registrars (SpRs) who have trained in our region since the introduction of the Calman training scheme.

The high impact of the 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 five years’ training time.

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 be longer to train than their male counterparts due to flexible 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 calculation is 6.3 years. Reasons include sickness.


maternity 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 (OOPE) or leave of absence. We allow OOPE 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-CCST 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
Regional advisor in paediatrics and chairman of the southwest regional paediatric training committee

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, or 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 can we ensure appropriate instructions 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 a paramedic ambulance, or even assume 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 have always 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.

T WOLFF
C RUMNEY
Birmingham Specialist Community Trust, Child and Family Centre, Maas Road
Birmingham B11 2PR, UK
toni@toniwhitehouse.freeserve.co.uk

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

Controversies in paediatrics?

Error,—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 address the issue of adrenaline and the management of anaphylaxis. There are strong data from huge series of challenges, about the positive and negative predictive values of the tests used in allergy clinics.1,2 Unsworth does not even mention formal challenges, the cornerstone of modern food allergy practice. Many allergists would prescribe an epinephrine kit on the basis of a positive SPT in the absence of a significant history or formal challenge.3

Children and adults at risk of food related anaphylaxis have enough of life’s pleasures denied to them. The provision of epinephrine

www.archdischild.com
Editor,—Epinephrine kits enable a food allergy when and how to develop a treatment for food related anaphylaxis. I can stop prescribing epinephrine kits to people who currently need them.

J HOURIHANE
Division of Infection, Inflammation and Repair, University of Southampton, Mailpoint 218, Tremosa Road, Southampton SO16 6YD, UK

2 Hill D, Burks AW, Sampson HA. Epinephrine kits allows normal life to go on, involving families, ensuring they are ready to respond as best they can to the disaster that allergen exposure represents. When anyone develops a severe reaction to a food, it is likely to happen we should continue to empower families to deal with it. I have never met a parent who reported being more scared of the epinephrine kits than of the prospect of allergen exposure (with or without epinephrine available).

Families must be taught when to use epinephrine and how to use autoinjectors. Until doctors can tell families that anaphylaxis will never happen we should continue to empower families, ensuring they are ready to respond as best they can to the disaster that allergen exposure represents. When anyone develops a real treatment for food related anaphylaxis I can stop prescribing epinephrine kits to people who currently need them.

Letters

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