haemoperitoneum,⁴ and, more recently, in association with adrenal haemorrhage (B Karpe, T Nybonde, 35th international congress of British Association of Paediatric Surgeons, Athens, 1988). The sign of inguinal bruising suggests blood within the spermatic cord, and leakage presumably occurs at the origin of the external spermatic fascia from the external oblique aponeurosis at the superficial inguinal ring.

These clinical features suggest that the testis will remain viable, whereas in neonatal torsion a necrotic testis is almost invariably found.¹ An operation should

still be done to establish the diagnosis and drain the haematoma.

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Ethnic differences in incidence of severe burns and scalds to children in Birmingham

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The overall incidence of severe burns among children in Birmingham has not altered greatly during the past 20 years, although we have seen apparently disproportionate numbers of Asian children with burns. We therefore examined our records for the five years 1983-7.

Subjects and results

Details were obtained for all children living in Birmingham who had been admitted to this hospital during 1983-7 with severe burns (defined as burns covering more than 5% of the surface of the body, burns to functionally important parts of the body, and possible abuse). Because the burns unit is centrally located few, if any, such patients were treated at other hospitals; children with less severe burns, however, were often treated by local casualty or primary care services, and because of possible variation in ascertaining these minor burns they were not included.

The ethnic origin of the burned children was determined from forenames and surname; this is valid for Indian, Pakistani, and Bangladeshi but not Afro-Caribbean children (the main ethnic groups within Birmingham). Selecting children matched for ethnic

origin for comparison from the general population was therefore restricted. The ethnic origin of children aged under 15 was identified from the 1981 census, in which the head of the household was recorded. Children born into such Indian, Pakistani, or Bangladeshi households were considered Asian for this study.

The table gives details of the 600 children admitted. Asian children comprised 25% of these admissions, though they formed only 18% of the city's children. There were 2.7 scalds and 1.0 burns per thousand Asian children compared with 1.8 scalds and 0.6 burns per thousand other children. Incidence ratios and their associated confidence intervals¹ showed this difference to be significant (odds ratio 1.55; 95% confidence intervals 1.29 to 1.86). There seemed to be no ethnic difference by age or sex: most of the children were toddlers. The proportions of most types of injury were similar, but Asian children had a particularly high incidence of burns from fat. Cultural differences in methods of cooking were probably the main cause.

Comment

Historically scalds were more common among deprived children, the most severe being caused by boiling water in buckets or open pans.² Provision of central heating, bathrooms, and washing machines reduced these, and most scalds are now caused by teapots or kettles. An important social gradient still exists, with environmental and intellectual poverty being the principal elements; there does not seem to be any difference in this type of injury between ethnic groups.

Immigrants traditionally enter a new community at

Numbers of severe burns and scalds to children in Birmingham* by ethnic origin and sex, 1983-7. Figures in parentheses are burns and scalds per 1000 children

	Asian			Non-Asian			All cases
	Boys	Girls	All	Boys	Girls	All	
Scalds:							
Baths and buckets	12	7	19	37	34	71	90
Kettles	11	2	13	53	29	82	95
Teapots	11	3	14	29	14	43	57
Teacups	10	9	19	22	27	49	68
Other water spilt	12	10	22	30	16	46	68
Other hot liquids	17	9	26	30	12	42	68
All scalds	73 (3.3)	40 (2.0)	113 (2.7)	201 (2.1)	132 (1.4)	333 (1.8)	446 (1.9)
Burns:							
House heating	4	6	10	11	7	18	28
Cookers	1	1	2	1	3	4	6
Fat	7	6	13	8	5	13	26
Hot objects	4	2	6	7	11	18	24
House fires	1	2	3	4	2	6	9
Electrical	2		2	8	3	11	13
Flammable liquids	2	1	3	13	6	19	22
Chemicals				2	3	5	5
Other burns	2	1	3	14	4	18	21
All burns	23 (1.0)	19 (1.0)	42 (1.0)	68 (0.7)	44 (0.5)	112 (0.6)	154 (0.7)
Total burns and scalds	96 (4.3)	59 (3.0)	155 (3.7)	269 (2.8)	176 (1.9)	445 (2.4)	600 (2.6)

*Population in Birmingham: 22 165 Asian boys; 19 936 Asian girls; 95 815 non-Asian boys; 91 309 non-Asian girls.

the bottom of the social scale, which may partially explain our results. The high incidence of scalds and fat burns among Asian children relates to different methods of cooking in Asian households, especially the use of ghee (clarified butter) and many dishes (hence many vessels) in Asian meals. Asian homes tend to have many relatives present at mealtimes and, as Asian women traditionally supervise both children and cooking, accidents happen more easily. Small overcrowded kitchens are less safe for children than open air cooking in a village back yard.

Learmonth found that burns and scalds were common in rural communities in India.³ The principal contributory factors were lack of supervision of children, dangerous cooking practices, and flowing

flammable clothing. Education has an important impact in preventing burns in India.⁴ Our findings identify a need for a similar service here.

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Safe use of lignocaine

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Inadvertent overdosage of local anaesthetic agents, which are in widespread daily use, is well documented.¹ Many doctors seem to choose the strength of these agents indiscriminately, using 2% when 0.5% would be adequate. I carried out a study to test the hypothesis that many doctors are unaware of basic information about these drugs.

Method and results

I conducted a survey on two consecutive days at a large teaching hospital and a district general hospital. Junior doctors of all grades were approached on an ad hoc basis and asked six questions about ligno-

appropriate dose was the most important factor in preventing "catastrophic reactions." It is depressing to find that doctors are still ignorant of the appropriate dose.

Labelling drugs in weight per volume percentages is an old and accepted method used for many preparations, but the Committee on Safety of Medicines should perhaps re-examine this method of dispensing drugs. In addition to local anaesthetics, drugs dispensed in containers labelled with percentages include intravenous solutions and dermatological and ophthalmological preparations. Similar mathematical errors might be encountered with adrenaline, which is labelled in parts per volume. For many years Sweden has required solutions to be labelled with the weight per millilitre.

The basic pharmaceutical data given in the *British National Formulary*² and product data sheets should be reinforced. The deficiencies in data sheets have all been discussed elsewhere.³ The original packaging for all

Results of questionnaire survey on safe use of lignocaine

	No (%) giving correct response			Correct response	Range of responses given		
	Anaesthetists (n=17)	Other specialties (n=83)	All (n=100)		Anaesthetists	Other specialties	All
(1) How much lignocaine is there in: 5 ml 1% Lignocaine?	16 (94)	29 (35)	45	50 mg			
10 ml 2% Lignocaine?	16 (94)	27 (33)	43	200 mg			
(2) For a 60 kg adult, what is the safe dose (ml) of: 1% Lignocaine plus adrenaline?	8 (47)	13 (16)	21	40-60 ml	2-48 ml	2-360 ml	2-360 ml
2% Lignocaine?	9 (53)	17 (21)	26	8-12 ml	5-12 ml	5-720 ml	5-720 ml
(3) What is the safe dose (mg/kg) of: Lignocaine?	9 (53)	8 (10)	17	2.8-4.2 mg/kg	0.1-6.0 mg/kg	0.01-500 mg/kg	0.01-500 mg/kg
Lignocaine plus adrenaline?	9 (53)	2 (2)	11	6.4-9.6 mg/kg	0.01-10 mg/kg	0.01-600 mg/kg	0.01-600 mg/kg

caine (table). One hundred doctors participated (73 employed at the teaching centre and 27 at the district general hospital). Their specialties covered all acute medical and surgical disciplines. For the last four questions the dose given in the *British National Formulary*² (plus or minus 20%) was accepted as correct. The table gives the results.

Comment

Probably the most important finding of this study was that less than half of the doctors knew that 1% lignocaine was equivalent to 10 mg/ml. The results would be less worrying if these doctors could be expected to give the appropriate volume of local anaesthetic. Many respondents in another study claimed that they knew the safe volume of lignocaine for adults.⁴ Forty six per cent of the doctors in my study would have given two or more times the maximum recommended volume of 2% lignocaine (question 2). Grimes and Cates¹ suggested that administering the

drugs should perhaps include an obligatory data sheet similar to those already provided by some manufacturers. An additional entry in the data sheet for local anaesthetic agents might include the safe dose in mg/kg.

Finally, there has been some discussion in the United States about the potential problems of large doses of lignocaine in prefilled syringes for use with infusion fluids.⁵ Reducing the size of ampoules of stronger lignocaine solutions (2% and above), perhaps to 2 ml, should be considered.

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