Comparison of six jet nebulising systems for the nebulisation of rhDNase (2.5 mg in 2.5 ml)

Compressor + Nebuliser	Recommended systems		RMCH systems		
	Pulmo-aid + Updraft	CR50 + Sidestream	CR60 + Sidestream	CR60 + MicroNeb III	Turboneb + MicroNeb III
Median mean diameter (μm)	5.19	5.23	3.83	4.89	4.87
Nebulisation time (min)	6.57	2.9	3.85	6.83	5.88
Residual volume (ml)	0.5	0.6	0.4	0.6	0.7
% Of activity in the released aerosols*	73	71	65	64	65

RMCH=Royal Manchester Children's Hospital.

*The activity of 2.5 mg (in 2.5 ml) rhDNase is taken as 100%.

Further efficacy trials are urgently required to evaluate the dose-response relationship of rhDNase when it is delivered by different nebulising systems.

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Adverse events occurring during interhospital transfer of the critically ill

EDITOR,—The study by Barry and Ralston is extremely important in highlighting the dangers associated with transport of critically ill children by non-specialised personnel.¹ The fact that 75% of their patients suffered from serious clinical complications during transfer by non-specialised teams is both alarming and unacceptable. It is indeed very unfortunate that in spite of recent recommendations some critically ill children in the UK are still being transferred by non-specialised teams. A recent study from the US has shown that the use of specialised paediatric retrieval teams reduces the morbidity of interhospital transport.²

We have recently completed a study (in preparation for publication) looking at the morbidity associated with the transfer of 51 critically ill children by our specialised paediatric intensive care retrieval team. Morbidity during transport was assessed in terms of physiological deterioration and equipment related adverse events using the criteria described by Kanter and Tompkins.³ Only two (3.9%) patients had possibly preventable deterioration (episodes of apnoea and oxygen desaturation in one patient and hypoglycaemia in the other) during transport and there were no instances of equipment related adverse events. Severity of illness in our patients, as measured by the median (range) PRISM score on admission at the

referring hospital decreased from 14 (1-45) to 8 (0-23) on arrival at our paediatric intensive care unit.

Our study suggests that a specialised paediatric retrieval team can not only institute intensive care on arrival at the referring hospital, but also transport the patient back to a tertiary centre with an improvement in the severity of illness and minimal morbidity, demonstrating that similar unequivocal results can be achieved here in the UK. These results should strengthen the case for specialised paediatric retrieval even further.

A regional specialised paediatric intensive care retrieval service catering to meet all the demands of the region would seem the ideal solution for the future. For the present, however, tertiary centre intensive care units that accept critically ill children should try and extend the benefits of paediatric intensive care to the child awaiting transfer by sending out specialised retrieval teams to the referring hospital, thereby initiating intensive care earlier and decreasing the morbidity associated with non-specialised retrieval.

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Patterns of scald injuries

EDITOR,—Yeoh *et al* found only four children with non-accidental scalds out of a total of 68 bath scald injuries treated in a burns unit in 2.5 years.¹ The authors rightly draw attention to the unacceptably hot and in some cases dangerous temperatures in many household hot water systems. However in this country fewer cases of abuse are recognised than in the USA where there have been more studies. Tennant and Davison did not find a single case of non-accidental bath scald injury in 91 cases, although 60% were aged 2 years or less.²

Why should experience in Cardiff and Edinburgh be so different to cities in the USA?

In the USA estimates vary from 10-25% of burns being deliberately inflicted by adults.³ In one study of 71 inflicted burns the most

frequent cause of injury were scalds (83% tap water) which involved buttocks, perineum, feet (or foot), hands (or hand) in various combinations.³ In contrast, genuinely accidental scald injuries are more often due to causes other than tap water (15.7%). Studies have emphasised the young age in abuse with many below 3 years.

Many children with abusive burns and scalds will not in our experience have other injuries such as bruises or fractures (only 19.7%).³ The diagnosis will depend on a high index of suspicion (abuse until proved otherwise) and an awareness that adults do understand the burning hazard associated with hot tap water. Such scalds should not be excused by a purported lack of knowledge. This observation is supported by the virtual absence of accidental tap water burns in non-impaired adults.⁴

Paediatricians must be aware of the features associated with deliberate immersion. Careful consideration of the history including analysis of scald pattern in relation to child's development (ability to get into the bath, etc) and a knowledge of the detailed environment and parental behaviour at the time the injury was sustained are needed. Paediatricians should develop protocols and systems for the investigation of tap water scald injuries as few will be compatible with acceptable child care practice but involve either deliberate injury or neglect. Parent education and manipulation of water temperature are unlikely to be sufficient protection for these vulnerable children. At present too few cases are being recognised and reported.

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Attitudes and beliefs of Muslim mothers towards pregnancy and infancy

EDITOR,—The article by Gatrad on attitudes and beliefs of Muslim mothers towards pregnancy and infancy is timely and appropriate.¹ However as a practising Muslim paediatrician I found his article intriguing because he seems to mix and confuse Muslim and cultural beliefs with each other.

Although in some cultures pregnant women continue to fast during the fasting month of Ramadan, religiously it is discouraged. The practice of giving honey to the baby or tying a string around the baby's neck or wrist are both entirely cultural and have no religious basis whatsoever. Similarly the use of a mixture of herbs and nuts cooked in wheat and purified butter during the post-natal period is very much part of Indian culture and is not seen in many other Muslim parts of the world, for example Arabia. Gatrad goes on to quote other cultural issues and confuses them with Islam, for example