Correspondence

since treatment. This indicates that the timing of such tests is important, and sequential tests during the first year of treatment may be necessary to detect a transient GH deficiency.

(2) The comments of Shalet and Price about their prospective study are interesting but they are difficult to correlate with the data in the abstract where they reported that 29 children with ALL, who had been in complete remission for 4-8 years, had a normal mean height velocity SD score but that 17 of them had impaired GH responses to insulin, and one was clinically GH-deficient.

No details are given about the number of children studied prospectively or the timing of the measurements. Fifteen children had somatomedin activity assayed in the first year of treatment but no anthropometric data are given on them.

(3) We feel that they have not understood the statistical methods we used. In an individual child growth rates over periods less than one year are unreliable, but by taking the mean of the SD scores of a large group of children, changes in growth rates over shorter periods can be demonstrated. The larger the group of children, the smaller is the change that is potentially detectable. A small change in growth rate in the time between presentation and the end of cranial irradiation might have been recognisable with a larger group of children, but our findings suggest that the principal effect on the growth rate occurs after cranial irradiation.

(4) It is known that both systemic disease and steroid therapy in children can affect growth rate, and it would be surprising if this were not so in children with malignant disease. However, children with solid tumours who also received cytotoxic drugs, usually including steroids, but did not receive cranial irradiation showed no significant alteration of growth during the first year of treatment.

While conceding that other factors are likely to affect the growth of children with leukaemia, we still believe that a transient interference with GH production is the major cause of the poor growth that we demonstrated in the first year of treatment.

We draw attention to the following error in our paper. On page 601 the formula for calculating the SD score should read: SD score = (x - \bar{x})/SD.

References


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Bacteriuria in the neonate

Sir,

We read with interest the paper by Moncrieff et al. demonstrating a very low rate of incidence for asymptomatic bacteriuria in 151 healthy preterm babies. The incidence was zero in their series of 147 fully investigated babies; it would rise to 1.3% if 2 infants with pure growths of 100,000 organisms/ml on bag specimens, who could not be completely investigated, had significant bacteriuria. Two other infants with bacterial growths of 100,000 organisms/ml were considered 'most unlikely to have significant bacteriuria' because the cultures had grown two different organisms.

We make the following comments:

(1) A very low rate of incidence for asymptomatic bacteriuria, similar to that observed in healthy preterm babies, was also found in high-risk newborn infants. Only 9 out of 1762 high-risk neonates that we studied presented with asymptomatic bacteriuria, giving a 0.5% incidence rate. From our study we, like Moncrieff et al., concluded that routine survey of bacteriuria was not essential in high-risk neonates, and that a thorough search for symptoms that suggested urinary tract infection appeared to be more effective.

(2) In our study a mixed infection was found in 4 out of 43 infants presenting with proved significant bacteriuria. This intriguing finding was confirmed in each case by a urine specimen obtained by suprapubic puncture. Escherichia coli and proteus were found in 2 cases, E. coli and enterococcus in one case, E. coli and klebsiella in one case. The fact that a mixed infection was confirmed by suprapubic aspiration excluded an artefact by external contamination but, as suggested by Fairley et al., it did not exclude contamination by retrograde aspiration of urethral organisms.

The significance of mixed infections in the neonate is still unclear. The phenomenon could be related to an unusual pattern of antibody synthesis and bacterial growth in the bladder of the neonate. However until this point can be elucidated, we do not think that the finding of a positive urine culture in the newborn infant can be ignored simply because it shows a mixed growth.

References

Dr Håkansson and co-workers comment:

We agree that the number of controls was small and not completely matched for age. The problem associated with the collection of a control group of children is obvious but should be overcome if necessary. However, because we had no indications of any age-dependent variations in any of the variables presented, and because our control groups of children were indistinguishable from adult controls, we did not consider this to be of paramount importance for the conclusions in our paper. Subsequent studies have given further support to our conclusions and, if anything, such studies have shown a tendency towards somewhat higher values in children than in adults for one variable (the phagocytic rate of IgG-coated particle). We are therefore convinced that the results presented in our paper are valid.

Superficial skin necrosis in babies prepared for umbilical arterial catheterisation

Sir,

Mann's report1 of gluteral skin necrosis after umbilical arterial catheterisation incriminates the catheter, but we have some evidence that the catheter may not be the culprit. Between July 1976 and May 1977 we saw 8 cases in whom findings were almost identical with the 3 he described. All the babies were of very low birthweights (mean 1010 g ± 205 SD) and gestation (mean 28 weeks ± 1.7 SD). Discoloration of the buttocks and lower back was noticed within the first 4 hours and the catheter was removed immediately from 6 babies. In the case of a baby who died, necropsy showed that the lesion was confined to the skin with haemorrhage in the dermis and superficial subcutaneous tissue. The vessels showed no evidence of thromboembolism and the underlying muscle and deep fat appeared normal. It was decided that the catheter was essential for clinical management of 2 babies and the damaged skin subsequently healed. After this 'epidemic' we carried out a postal survey of 16 neonatal intensive care nurseries in the UK. Nine centres reported a total of 14 similar cases in babies of low birthweights. Catheterisation of the umbilical artery failed in a baby who weighed 800 g, but skin necrosis over the buttocks and lower back had still occurred.

To study the sequence of events we introduced a policy of inspecting the back and buttocks before catheterisation to identify skin damage from other causes—such as breech delivery. The area was re-examined immediately after the procedure and it soon became apparent that many babies had been lying in a pool of chlorhexidine (0.5% in spirit) and povidone-iodine used to clean the umbilicus. We suspected that these solutions might be causing skin damage and so we used them sparingly and changed the sheet immediately after catheterisation.

Since January 1978 280 babies have been prepared for umbilical arterial catheterisation. In 14 (5%) some degree of skin damage was present before the procedure. Catheterisation was successful in 249 (89%) babies. We have used end-hole Argyle (ALOE Medical Co. St Louis,

Dr Moncrieff comments:

I accept that it is possible that the 2 babies with mixed growths might have had infection, and am glad that Dr Guignard agrees that infection must always be confirmed by a suprapubic aspiration. We both think that looking for asymptomatic bacteriuria in healthy preterm babies, even high-risk ones, is not a profitable occupation.

Neutrophil function in infection-prone children

Sir,

The problem of obtaining reasonable controls when working with children is a perennial one. When performing esoteric immunological investigations for which the normal values are unknown, and which are almost certainly age-related, controls are of paramount importance. Recently you published an article describing neutrophil function tests on 24 children with recurrent bacterial infections, mainly those of the upper respiratory tract.3 The average age of these children was not given, but the mean value of the ages listed was 4-5 years.

The control group consisted of 20 children, mean age 9 years, 8 with allergy to birch-pollen (asymptomatic at the time of sampling) and 12 admitted for operation for non-infectious causes. It is a pity to nullify what may well be perfectly valid results by the use of so few controls so poorly matched for age.

Reference


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