Correspondence

Tuberculosis in children

Sir,

We were interested to read the two articles recently published in *Archives* from the Medical Research Council Tuberculosis and Chest Disease Unit1 and Packe and Innes.2 We were particularly interested in the comments on tuberculous meningitis in children.

We have recently reviewed the cases of tuberculous meningitis seen at the Royal Hospital for Sick Children, Glasgow.3 Between 1968 and 1986, 15 children were seen because of this condition. Fourteen were white and only one was Asian. The mean age at presentation was 2 years (12 months to 12 years) and none had received BCG vaccination. In 12 children close contact with other cases of tuberculosis was identified.

It is clear that the practice of offering BCG vaccination to children at 13 years of age was too late to protect the children we studied from acquiring the infection. Routine BCG vaccination of all neonates was stopped in Glasgow in 1974 and since then has been offered only to babies of Asian or Chinese origin. This may partly explain why most cases of tuberculous meningitis seen in our hospital occurred in white children.

We agree with the recommendation of the World Health Organisation that the use of BCG vaccination should be as early in life as possible and stress that any abandonment of such policy must be accompanied by meticulous case reporting and contact tracing if more cases of this serious condition are to be avoided.

References


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Total parenteral nutrition and sepsis

Sir,

The paper by Dr Beganović and colleagues on total parenteral nutrition and sepsis contributes little to our understanding of either of these issues.1 Sepsis was considered proved by positive bacteriology in 13% of infants receiving total parenteral nutrition and 6% of those who did not (the percentages given in the table have been miscalculated). Eighty per cent of blood cultures grew *Staphylococcus epidermidis, Staphylococcus aureus, Escherichia coli* or group B streptococcus, important causes of serious infection in the newborn period, puzzlingly described by the authors as ‘fairly benign’.

We are not told the proportion of patients with a central venous catheter for total parenteral nutrition and those fed through a peripheral venous cannula. The effect that this might have on sepsis rates within the group receiving total parenteral nutrition is of considerable practical importance. Patients receiving total parenteral nutrition were almost certainly more likely than enterally fed infants to have other sources of infection such as arterial catheters, endotracheal tubes, chest drains, etc. The lack of information relating to primary and secondary catheter sepsis makes it impossible to assess objectively the risk of infection related directly to administration of total parenteral nutrition.

The authors conclusion that ‘the advantages of total parenteral nutrition outweigh the disadvantages of sepsis in this group of infants’ is extraordinary as no details of the advantages derived from total parenteral nutrition or the morbidity and mortality associated with sepsis are given. The fact that 64% of the study population received total parenteral nutrition indicates an astonishingly high proportion of neonates in whom enteral nutrition was considered to be contraindicated.

We suggest that the frequent recourse to total parenteral nutrition as highlighted in this study does not reflect the fact that the commercially available solutions have been adapted from premature newborn infants’ so much as an uncritical approach to the use of a valuable treatment, but one which despite the authors opinions has a more limited application than they imply.

Reference


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Drs Verloove-Vanhorick and Beganović comment: Dr Puntis misunderstood our paper on total parenteral nutrition. Our aim was, foremost, to provide data on total parenteral nutrition and sepsis in a relatively huge cohort of very low birthweight or very preterm babies. Obviously, in such a nationwide, collaborative epidemiological study in a high risk population a single aspect of perinatal care cannot be recorded exhaustively. Dr Puntis’ criticism on lack of certain data seems therefore unwarranted. Some points, however, may easily be clarified.
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'Clinical sepsis' was considered to be present if clinical and/or haematological signs were recorded. If, in addition to these, a positive blood culture was recorded, the sepsis was defined as 'bacteriologically confirmed': Central catheters were used only sparingly in the Netherlands, and total parenteral nutrition was administered mostly by peripheral infusion. Blood cultures were seldom taken routinely, even in infants treated by total parenteral nutrition. Only clinical evidence of sepsis justifies such a procedure in these very small infants.

Dr Puntis misread the part about causative organisms. Far from considering these benign, we stated that in infants treated by total parenteral nutrition the causative organisms were 'fairly benign' namely, compared with infants not treated by total parenteral nutrition; this point is illustrated even better by our original unpublished table, categorising the causative organisms by duration of total parenteral nutrition (see table).

Table  Causative organisms of bacteriological sepsis by duration of total parenteral nutrition, as percentage of cases in each group.

<table>
<thead>
<tr>
<th>Duration of total parenteral nutrition (days)</th>
<th>S. epidermidis</th>
<th>S. aureus</th>
<th>E. coli</th>
<th>Streptococcus group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>11</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>1-7</td>
<td>27</td>
<td>19</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>8-28</td>
<td>36</td>
<td>26</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>&gt;28</td>
<td>67</td>
<td>17</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Quite correctly, Dr Puntis points out that no conclusion can be drawn from our data as to the aetiology of sepsis related to total parenteral nutrition. As the administration of total parenteral nutrition, however, both by peripheral and by central systems, carries the risk of introducing micro-organisms by infected fluids or systems, a causal relation is plausible. In addition to the strong association between sepsis and total parenteral nutrition emerging from our multivariate statistical analysis this justifies our conclusion that total parenteral nutrition is an important risk factor for sepsis in such infants.

We do not share Dr Puntis' view that total parenteral nutrition was overused. The study population contained, by definition, almost exclusively infants with immature digestive systems, which renders non-use of total parenteral nutrition the exception. Next to recent improvements in ventilatory support systems, total parenteral nutrition as the source of adequate nutrition is one of the most obvious factors contributing to the trebled rate of intact survival of such infants in the past 20 years.3

Plasma amino acids in preterm infants fed on human milk or formula

Sir,

We read with interest the paper by Ventura and Brooke and were surprised that they stated there were few data on amino acid concentrations in babies fed the new low birthweight formulas or on babies fed breast milk.1 Two years ago we published amino acid profiles on 85 low birthweight infants as part of a randomised controlled trial comparing different low birthweight formulas and expressed breast milk.2 Like Ventura and Brooke we found higher total amino acids in low birthweight babies fed formula compared with those fed breast milk, but we also showed different concentrations of three amino acids depending upon type of low birthweight formula (table).

Table  Comparison of selected amino acids in formula fed babies. Results are mean (SD)

<table>
<thead>
<tr>
<th>Amino acid</th>
<th>SMA LBW (n=25)</th>
<th>Prematalac (n=25)</th>
<th>Preaptamil (n=25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenylalanine</td>
<td>45 (9)</td>
<td>56 (15)</td>
<td>53 (22)</td>
</tr>
<tr>
<td>Cystine</td>
<td>27 (7)</td>
<td>29 (8)</td>
<td>39 (11)</td>
</tr>
<tr>
<td>Lysine</td>
<td>148 (40)</td>
<td>152 (71)</td>
<td>198 (74)</td>
</tr>
</tbody>
</table>

Analysis of variance p<0.05.

For these three amino acids, babies fed Preaptamil had the highest and babies fed SMA-LBW the lowest concentrations.

Therefore we feel Ventura and Brooke were wrong to group together all amino acid results on babies fed different formulas as the type of formula may determine amino acid concentration.

References


References