Rationing of antibiotic use in neonatal units

Editor,—We read with interest the article by Isaacs et al.1 on the rationing of antibiotic use in neonatal units. This encourages the use, where possible, of flucloxacinil and ammoginosylce as empirical treatment of late onset sepsis.

While this represents a valid approach to the empirical treatment of late onset infection, the epidemiology of bacterial sepsis will vary from unit to unit. In our unit we use a combination of vancomycin and cefoxatone. In 1999, of 159 positive blood cultures, coagulase negative staphylococci were isolated from 124 (78%). All were sensitive to vancomycin, but only 63% were resistant to netilmicin, 89% to cefoxatone, and 91% to flucloxacinil. In most cases, there was a sudden rather than insidious deterioration in the baby with raised C reactive protein, suggesting true infection rather than contamination. This is further supported by the fact that in 94% of cases a coagulase negative staphylococci was the sole isolate and the patients responded to appropriate treatment.

Although we consider the use of vancomycin to be essential for empirical treatment of late onset sepsis, we are aware of the problems associated with its overuse. The emergence of vancomycin resistant organisms including vancomycin resistant enterococci and vancomycin insensitive Staphylococcus aureus is, of course, a concern, but, in spite of continuing surveillance, this has not been observed in our unit. We agree that, to prevent the emergence of resistant gram positive organisms, it is vitally important to stop vancomycin use if cultures are negative after 48 hours. Some 96% of blood cultures that grow an organism do so within 48 hours,2 and discontinuation after this time is not associated with increased morbidity.

In conclusion, we would suggest that antibiotic policies remain unit specific, based on the prevalent microorganisms and their known sensitivities.

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Table 1 Intramuscular Konakion administration for premature infants in Welsh neonatal units

<table>
<thead>
<tr>
<th>Dose</th>
<th>Will preterm</th>
<th>Unsell preterm</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.2 mg/kg</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0.4 mg/kg*</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0.25–0.5 mgf</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0.5 mg</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1.0 mg</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

*Infants less than 2.5 kg.
†Depending on weight.

For extremely premature infants, some units used intravenous vitamin K. However, this route is not effective for long term prophylaxis and the safety of a potentially high peak of serum vitamin K following an intravenous dose has not been assessed.

Perhaps the reluctance to use the new licensed preparation stems from the lack of long term safety data. There is also a financial disincentive to use Konakion MM Paed rather than older preparations. In order to provide prophylaxis for 1000 term infants (estimating that 20% are exclusively breast fed), at current prices3 the comparison is as follows: oral Konakion MM Paed (£3410); Konakion given orally, £322; Konakion given intramuscularly, £230.

Research is urgently needed to ascertain the most appropriate route, preparation, and dosage schedule for premature infants, who are at high risk of vitamin K deficiency bleeding and resultant intracranial haemorrhage.

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Prophylaxis of neonatal vitamin K deficiency bleeding in premature infants

Editor,—In March 1998, the Department of Health issued new guidelines for prophylaxis of neonatal vitamin K of late onset bleeding.1 The recommended oral preparation for term infants was Konakion Mixed Micellar Paediatric (Konakion MM Paed). The recommendations did not, however, include specific guidelines for premature infants.

We undertook a survey of Welsh neonatal units one year after publication of these guidelines. We were interested in the formulation of vitamin K being given to term infants and the regimen being used for premature infants. Just over three quarters of the units (11/14) replied to postal or telephone questions (including the regional referral unit and all five subregional units). Of the 10 units that offered oral doses to term infants, only four provided the recommended Konakion MM Paed. Other units used injectable Konakion orally (or “Orakay”). Case reports from Germany and Australia show late onset bleeding after three oral doses of injectable vitamin K, which suggests that this preparation does not give adequate protection when given by mouth.

Ten units responded with information on well preterm infants; nine of these used the intramuscular route (eight Konakion, one Konakion MM Paed). For unwell preterm infants, all 10 respondents used the intramuscular route (nine Konakion, one Konakion MM Paed). The dose of Konakion given to preterm infants varied widely between units (table 1).

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