exhibit two peaks; one at 265 nm, consistent with DNA absorption, and the second at 450 nm. Bilirubin absorbs maximally between 420 to 480 nm—the blue range. Despite such evidence, few clinically adverse side effects have been reported.

Ennever et al. found the most effective wavelength for the production of 4Z,15E bilirubin to be 390 nm with an overall effective band from 350 to 470 nm. But other types of isomerisation occur and the relative contributions of different isomerisations to the overall effect of phototherapy is unknown.

Vecchi et al. have shown that longer wavelengths in the green range result in more effective phototherapy than daylight lamps. They note that the depth of penetration of light in human skin increases with increasing wavelengths.

Clinical indications for phototherapy remain confused. Obviously infants should be exposed to the minimal necessary irradiation. Until optimal conditions are defined, however, we can reiterate our plea that paediatricians measure the ‘dose’ of phototherapy and that manufacturers provide emission spectra for phototherapy light sources.

References

Oral rehydration solutions and electrolyte content of water

Sir,

We read with interest the annotation by Tripp and Candy on oral rehydration solution.1 We would, however, like to draw attention to the composition of the most vital part of oral rehydration solution—water.

In industrialised countries it is taken for granted that the electrolyte content of drinking water is negligible (as per public health standards). The composition of fresh water, however, depends upon many geological factors and varies from area to area.2

In Benghazi the sodium content of unboiled drinking water ranges from 20 to 56 mmol(mEq)/l and that of boiled water from 39 to 82 mmol(mEq)/l.3 The sodium content of a standard commercial formula milk, reconstituted with boiled water can range from 43 to 125 mmol(mEq)/l with an osmolality from 350 to over 426 mmol(mEq)/l (see Table).

In view of the above limitations, we do not advocate use of any commercial or World Health Organisation oral rehydration solution in infants with diarrhoeal disease in our area. We have been treating these children successfully with water supplemented with glucose, potassium, and bicarbonate.

Paediatricians working in the developing countries or remote rural areas, should ascertain the electrolyte content of the regional drinking water before making any protocols for oral rehydration treatment.

References

Nisar A Mir and A Y Elzouki
Faculty of Medicine,
University of Benghazi,
Libya

Doxapram and neonatal apnoea

Sir,

Stimulated by the report of Sagi et al. on the beneficial effect of doxapram in treating neonatal apnoea refractory to aminophylline, we recently used the drug in two preterm infants. The first, a baby of 28 weeks’ gestation weighing 1200 g, was 17 days old at the time of receiving doxapram. The second baby was of 26 weeks’ gestation, weighed 880 g, had suffered an intraventricular haemorrhage at the age of 24 hours, and was being ventilated for apnoea at 13 days of age. In both babies the frequency of apnoeic attacks was dramatically reduced within a few hours of starting doxapram infusion at a dose of 2.5 mg/kg/hour, and within the ensuing 12 hours the second baby no longer required ventilation. Both babies became extremely agitated, however, while receiving doxapram, exhibiting virtually continuous erratic limb movements, excessive crying, and disturbed sleep. We felt obliged to stop the infusion and their behaviour returned to normal within two or three hours. As in the cases reported by Sagi et al.,

Table Composition of natural unboiled fresh water

<table>
<thead>
<tr>
<th></th>
<th>Natural fresh water</th>
<th>Benghazi water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium (mmol(mEq)/l)</td>
<td>0.35–0.72</td>
<td>20–56</td>
</tr>
<tr>
<td>Potassium (mmol(mEq)/l)</td>
<td>0.20</td>
<td>0.36–0.66</td>
</tr>
<tr>
<td>Calcium (mmol/l)</td>
<td>0.03–0.16</td>
<td>1.53–2.08</td>
</tr>
<tr>
<td>Total solids (mg/dl)</td>
<td>&lt;0.03</td>
<td>0.12–0.35</td>
</tr>
<tr>
<td>pH</td>
<td>5–7</td>
<td>7.4–7.74</td>
</tr>
</tbody>
</table>

Conversion---SI to traditional units: calcium 1 mmol/l = 4mg/100 ml.
Oral rehydration solutions and electrolyte content of water.

N A Mir and A Y Elzouki

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