Influence of breast feeding on the clinical features of salt-losing congenital adrenal hyperplasia

even in healthy infants, un_masks the true nature of the underlying disorder in many such infants who, already profoundly salt-depleted and unable to tolerate further fluid loss, sink rapidly into severe dehydration and shock. The aldosterone content of breast milk is unknown, but it may, as in the case of progesterone, reflect blood concentration. The possibility that this or other breast milk steroids might exert a therapeutic effect on breast-fed infants with SL-CAH cannot be excluded, but given the profound salt wasting present in these infants, the plasma concentration of such hormones after absorption from the gastrointestinal tract would seem to be insufficient to influence renal sodium conservation.

SL-CAH should be included in the differential diagnosis of failure to thrive at the breast, and plasma electrolytes determined before the introduction of formula which may precipitate vomiting. For this reason, although breast feeding should always be encouraged, it is particularly desirable in babies with suspected SL-CAH while the results of confirmatory diagnostic tests are awaited and treatment is begun.

We thank Dr M M Wood, HSC, for statistical analysis, and Miss C Conway for typing the manuscript.

The radioimmunoassay method for plasma 17-hydroxyprogesterone was developed at HSC by Dr Graham Ellis, using an antibody (type M 156) which was obtained from Professor W R Butt, Birmingham and Midland Hospital for Women.

References


Correspondence to Dr A Curtis, Department of Paediatrics, The Regional Hospital, Wilton, Cork, Ireland.

Received 1 September 1982

Supplementary water for breast-fed babies in a hot and dry climate—not really a necessity

N M GOLDBERG AND E ADAMS

Department of Paediatrics, Joseftal Medical Centre, Eilat, Israel

SUMMARY Urine osmolarity under hot and dry climatic conditions remains within the expected physiological ranges and thus shows that supplementary water for breast-fed infants is not necessary.

It is generally agreed that infants in a hot and dry climate need extra water. This assumption was based more on caution than on knowledge. Recently breast-fed infants in a hot and humid climate were found to do well without supplementary water.

A field study was undertaken in two bedouin villages on the coastal side of the Sinai desert during the summer to find out the fluid requirements of totally breast-fed infants in a hot and dry climate.

Materials and methods

Fifteen healthy exclusively breast-fed infants (9 boys, 6 girls) were studied. They were aged between 40 and 150 days.

Urine was collected using adhesive collector bags. The samples were taken either after 1000 hours or before 1600 hours. Urine was then frozen and analysed within 24 hours using the Fiske osmometer (Fiske Associates, Burlington, Mass. 01803).

Temperature and humidity readings for the duration of the study were provided by the Israeli Meteorological Service.

Results

Urine osmolarity measurements are shown in the
Goldberg and Adams

Table. Urine osmolarity measurements

<table>
<thead>
<tr>
<th>Case</th>
<th>Gender</th>
<th>Age (days)</th>
<th>Urine osmolarity (mmol/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>45</td>
<td>215</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>70</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>Female</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>60</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>Male</td>
<td>45</td>
<td>272</td>
</tr>
<tr>
<td>6</td>
<td>Male</td>
<td>45</td>
<td>315</td>
</tr>
<tr>
<td>7</td>
<td>Female</td>
<td>60</td>
<td>209</td>
</tr>
<tr>
<td>8</td>
<td>Male</td>
<td>120</td>
<td>164</td>
</tr>
<tr>
<td>9</td>
<td>Male</td>
<td>120</td>
<td>320</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>60</td>
<td>99</td>
</tr>
<tr>
<td>11</td>
<td>Male</td>
<td>90</td>
<td>65</td>
</tr>
<tr>
<td>12</td>
<td>Female</td>
<td>150</td>
<td>286</td>
</tr>
<tr>
<td>13</td>
<td>Male</td>
<td>45</td>
<td>120</td>
</tr>
<tr>
<td>14</td>
<td>Female</td>
<td>30</td>
<td>82</td>
</tr>
<tr>
<td>15</td>
<td>Male</td>
<td>120</td>
<td>125</td>
</tr>
</tbody>
</table>

Table. Osmolarity ranged between 55 and 320 mmol/kg, with a mean of 164.5 mmol/kg.

The temperature during the study varied between 32 and 37°C, with a mean temperature of 32.9°C. Humidity varied between 13 and 41%, with a mean of 26.7%.

Discussion

A newborn baby can concentrate his urine to 700 mmol/kg. By age 3 months he is expected to reach the adult osmolarity (1200 mmol/kg). It was calculated that a 4-month-old, totally breast-fed model infant, who weighed 6.3 kg would have a urinary osmolarity of 216 mmol/kg. Theoretically, he should manage well in hot climates without additional water. Most of the infants in our study had a urine osmolarity which was less than 216 mmol/l. All of them had a urine osmolarity considerably less than the maximum which the kidney can produce.

In dry climates water loss is high. This would explain the assumption that breast-fed infants in a hot and dry climate should receive supplementary water.

References


Correspondence to Dr Nahum M Goldberg, Department of Paediatrics, Joseftal Medical Centre, Eilat, Israel.

Received 1 March 1982
Supplementary water for breast-fed babies in a hot and dry climate — not really a necessity

N M Goldberg and E Adams

Arch Dis Child 1983 58: 73-74
doi: 10.1136/adc.58.1.73

Updated information and services can be found at:
http://adc.bmj.com/content/58/1/73

Email alerting service

These include:

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/