Aspiration pneumonia in association with oral vitamin K

Most infants born in the British Isles now receive vitamin K prophylaxis, and the trend towards oral administration continues. With the awareness that vitamin K is well absorbed from the gut and following publication of the report linking intramuscular vitamin K and childhood cancer, oral vitamin K prophylaxis has become more widespread. However, because of lack of uniform national policy, the practice of vitamin K administration varies from region to region. Cases of aspiration or anaphylaxis following oral vitamin K administration in neonates have not been previously reported.

We report three cases of aspiration associated with oral vitamin K, Orakay, the preparation uniformly used in Northeast England. Acute respiratory distress developed in previously well, breast fed neonates following administration of Orakay at home. All required hospital admission, and two of them were transferred to a neonatal intensive care unit (NICU). Infants are traditionally wrapped in pre-warmed towels. Whether this is optimal remains unknown. We compared the effects on core temperature of wrapping or not wrapping neonates during their transfer from the delivery suite to the NICU.

Hypothesis waiting for proof: un wrapping neonates for transfer

During transfer from the delivery suite to the neonatal intensive care unit (NICU), infants are traditionally wrapped in pre-warmed towels. Whether this is optimal remains unknown. We compared the effects on core temperature of wrapping or not wrapping neonates during their transfer from the delivery suite to the NICU.

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During resuscitation, infants in both groups were transferred to a Vickers 77-transport incubator and left wrapped or unwrapped. Rectal temperature was recorded using a mercury thermometer before leaving the delivery suite and again, immediately after transfer into a NICU incubator. The study was granted ethical approval.

Our findings are summarised in the table. There were no significant demographic differences between the two groups. While the mean transfer time was longer in the unwrapped group, the mean temperature change during transit was lower although neither difference reached statistical significance. No hypothermia (rectal temperature <36°C) occurred in either group.

Table 1: Demographics of the two study groups and temperature difference

<table>
<thead>
<tr>
<th></th>
<th>Wrapped</th>
<th>Unwrapped</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Male:female</td>
<td>5:5</td>
<td>3:7</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>1.635</td>
<td>1.595</td>
</tr>
<tr>
<td>Mean gestation</td>
<td>32/40</td>
<td>32/40</td>
</tr>
<tr>
<td>Gestation range</td>
<td>30/40–34/40</td>
<td>27/40–33/40</td>
</tr>
<tr>
<td>Temperature difference</td>
<td>-0.34 (°C)</td>
<td>-0.21 (°C)</td>
</tr>
<tr>
<td>Range</td>
<td>4–10 min</td>
<td>5–10 min</td>
</tr>
<tr>
<td>Temperature difference</td>
<td>-0.7 to +0.1 (°C)</td>
<td>-0.5 to +0.1 (°C)</td>
</tr>
</tbody>
</table>

References
4. V Bhandering, N On Tin, S R Ahmed. Darlington Memorial Hospital, Darlington DL3 6HX, UK; vidyabhandering@hotmail.com
5. References

Diuretics in CLD

This symposium on chronic lung disease of prematurity (CLD) by Kotecha et al covered important aspects and controversies in the management of CLD. We accept the authors’ inability to cover all aspects of management. We feel that some space could have been devoted to diuretics in management of CLD. Nearly all patients with CLD of some stage of their disease will receive diuretics and most of them will be on them for a long time. We came across only one systematic review by Brion et al in the Cochrane database. Conclusion of the authors was that there was no beneficial effect of using distal tubular diuretics for more than 4 weeks after initial stage. There was also no benefit in adding potassium sparing diuretics or newer diuretics like metolazone. In spite of very little evidence base for diuretics in CLD, one finds nearly all CLD patients on a diuretic cocktail. In addition to their effect on electrolytes, they affect Ca/Po metabolism. This may exacerbate osteopenia of prematurity and may have adverse effect on lung compliance. There is need for more discussion or clear guidelines on this issue.

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References
Positioning long lines: response to Reece et al

Percutanously inserted central venous lines are widely used in neonatal intensive care to administer parenteral nutrition and medication.1 It is important to ascertain the position of the line tip before use as incorrectly positioned long lines can lead to life-threatening complications like cardiac tamponade and pulmonary oedema.2

Reece et al suggested that it is prudent to use a routine contrast radiograph to localise the line tip in newborn infants.3 They would like to comment on their suggestion and report a relevant study performed in our unit on neonatal units.

Intravenous soluble contrast is not commonly used in neonates and very little is known about its potential side effects in neonates.4

We would like to comment on the suggestion of Reece et al regarding the use of plain radiographs to identify position such as Augmentin. We wonder if the antimicrobial susceptibility testing was performed and is not presented. In addition, the susceptibility results are not internally consistent; 60% of the Staphylococcus aureus tested are reported to be ampicillin sensitive but only 27% were Amoxicillin + Clavulanate (Augmentin) sensitive. This represents a highly unusual susceptibility pattern with a high percentage of S aureus not producing beta-lactamase enzymes to inactivate penicillin (ampicillin), but still showing resistance to a penicillin-beta-lactamase-inhibitor combination such as Augmentin. We wonder if the 60% reported sensitivity of S aureus to ampicillin is erroneous since the vast majority of S aureus, even in developing countries, are now penicillin (ampicillin) resistant.6,7 We also find the resistance rate of S aureus to amoxicillin-clavulanate (which is equivalent to methicillin resistance for S aureus) surprisingly high, and question if this indicates the presence of hospital acquired infections in this series.

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References


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References


Authors’ reply

We thank Professor Delligrammaticas for his comments on our study.1 Delligrammaticas et al2 hypothesised that the combination of the prone posture and the 45 degree head up tilt position could facilitate diaphragmatic activity. We however, propose that the improvement in oxygenation seen in the head up tilt position, the weight of the abdominal contents on the diaphragm is reduced, tending to increase functional residual capacity.3 In contrast, ultrasonographic examination4 has demonstrated that the diaphragm was significantly thicker at end expiratory volume in the prone rather than the supine position, which is likely to result in reduced diaphragm strength. Indeed, we demonstrated3 Pimax (a measure of respiratory muscle strength) was lower in the prone compared to the supine position and the supine posture with 45° head tilt.

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Author’s reply

Methinks Professor Sulyok doth protest too much. His early, pioneering work on electrolyte balance in the newborn is well known, and extensively cited in an earlier review of the subject co-authored by myself. In this, inter alia, his study of the effect of salt supplementation on the renin-angiotensin-aldosterone system is quoted in support of the hypothesis that hyponatraemia in preterm infants is due to salt depletion rather than water retention. The reason these papers were not cited in the present paper is that they are not relevant to it. The paper is not a historical or general review of hyponatraemia in the newborn but the results of a study specifically designed to examine neurodevelopmental outcome in two particular groups of infants previously studied by ourselves. His recent study of hyponatraemia and sensorineural deafness in preterm infants had not been published when our paper was submitted to the Archives, although we would certainly have referred to it if it had been.

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We would like to apologise for an error that occurred in the paper. Oxygen therapy for infants with chronic lung disease by S Kotecha and J Allen (Arch Dis Child Fetal Neonatal Ed 2002;87:F11–F14). The following sentence, under the heading Weaning from home oxygen, should have read: Vermeulen et al showed that infants who could be weaned from home oxygen had awake median saturations of 97% during one hour awake studies, spent 14% of time with saturation <95% and 2% of time <92%.