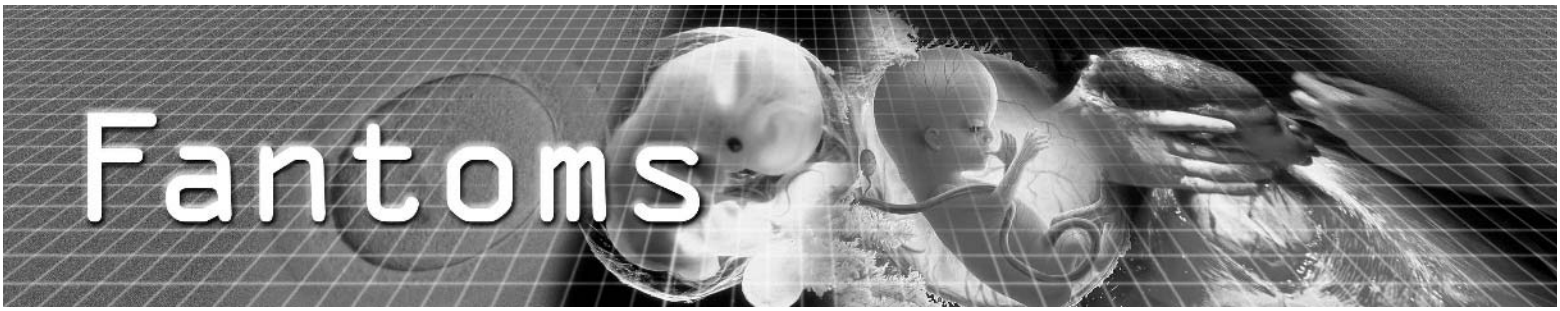


**Ben Stenson,** *Associate Editor*

## HOT TIPS

Following a review of the deaths of four babies due to cardiac tamponade associated with the presence of a central venous catheter, the UK department of health recommended in 2001 that:

> ''Until further investigation is undertaken concerning the ideal positioning of the catheter tip all central venous catheters inserted specifically for parenteral nutrition in this age group should be sited outwith the cardiac chambers.''

This was consistent with guidance in other countries. It was further recommended that:

> ''If there is suspicion that the line is in the atrium it should be repositioned.''

There was little evidence available on which to base an estimate of the frequency of this complication or to balance the risks and benefits of any policy decision about alternative line positions. National audit was recommended. An inevitable side effect of this policy has been that some infants are now subjected to repeated x rays with extra line breaks for contrast injections and have their dressings removed and replaced for adjustments. The morbidities associated with these additional procedures have not been evaluated. In this issue Cartwright describes 2186 central venous line placements in a single neonatal unit between 1984 and 2002. A policy of aiming to site the line tip in the right atrium is described in detail and appears to be extremely safe. The line tip was in the right atrium in 1282 cases. One case of non-lethal pericardial effusion was identified in association with a line that was coiled in the atrium. Time for a heated debate!
**See page 504**

## RESUSCITATION GUIDELINES

The revised International Liaison Committee on Resuscitation (ILCOR) guidance on neonatal resuscitation is due out in 2005. We have three papers in this issue that may be of interest to the committee. Trevisanuto *et al* describe their personal practice with the use of the laryngeal mask airway (LMA) in neonatal resuscitation, including a preliminary use for surfactant administration. They suggest that LMA insertion is easy to learn and may be something that should be taught to staff who do not have sufficient resuscitation exposure to maintain intubation skills. There are no randomised trials so it is unclear how many babies who cannot be successfuly ventilated by mask will respond to ventilation by LMA and avoid the need for intubation. The size of the LMA presently limits the use of the technique to larger babies. High inflation pressures cannot easily be generated. Menakaya *et al* randomised babies to resuscitation either with a standard anaesthetic bag circuit or a ventilator set to deliver volume guarantee. Not surprisingly, positive and expiratory pressure (PEEP) was delivered more consistently by the ventilator than by using the manual circuit. The tidal volumes delivered by the ventilator were not effectively limited and were no less variable than those delivered manually, despite the use of volume guarantee. In the context of rapidly changing lung mechanics, frequent disconnections, and intermittent large spontaneous breaths, volume guarantee was not effective. Hussey *et al* showed that health professionals manually ventilating an intubated mannequin delivered excessive pressures when no manometer was used. PEEP was delivered more consistently using the neopuff than using a bag circuit with a manometer.
**See pages 485, 490, and 494**

## CAFFEINE

Steer *et al* randomised infants less than 30 weeks gestation to receive either standard dose caffeine (5 mg/kg/day) or high dose caffeine (20 mg/kg/day) during the periextubation period. High dose treatment was associated with a substantial reduction in extubation failure without apparent short term adverse effects. Differences in major clinical outcomes were not statistically significant. The results of the Caffeine for Apnoea of Prematurity (CAP) trial are awaited in order that any potential longer term risks and benefits of caffeine treatment can be evaluated.
**See page 499**

## FOOD FOR THOUGHT

Wharton *et al* found that amongst preterm infants fed banked breast milk, preterm formula or term formula, low plasma taurine concentrations were associated with poorer mental performance at 18 months and 7 years after adjustment for confounding factors. This was not a randomised trial. Taurine intake was lowest in infants fed term formula. It is not known whether similar results would be obtained in term infants. These data add to the evidence suggesting that taurine may be a conditionally essential nutrient for preterm infants. There is no current requirement for taurine to be added to term formula. Heird suggests that it may already be too difficult ethically to perform randomised controlled trials.
**See pages 473 and 497**

## MEDICATION ERRORS

Two papers and an accompanying perspective consider the dangers of medication errors in neonatal units. Chappell and Newman highlight the vulnerability of existing systems to catastrophic, factor of 10 calculation errors because of the need to use vials containing doses appropriate for adults. Simpson *et al* report several errors of this nature in their description of a risk reduction initiative aimed at drug errors in a neonatal unit.
**See pages 472, 480, and 483**