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Highlights from this issue

Ben J Stenson

VARIATION IN PRACTICE AND POOR OUTCOMES FOR EXTREMELY PRETERM INFANTS

It's alarming that the treatment that families can expect when threatened with extremely preterm birth varies enormously and the likelihood of their baby surviving to discharge is determined by a great many additional influences other than medical circumstance. But how many families know that? Caroline Diguisto *et al* report an analysis of the outcome of infants born before 25 weeks gestation in France derived from the EPIPAGE2 cohort study. Regional rates for the provision of active antenatal care (antenatal corticosteroids or magnesium sulfate or caesarean delivery) varied from 21% to 61%. Differences remained significant after adjustment for individual and organisational characteristics. There was wide variation in the number of infants born alive who died in the delivery room. The authors conclude that the dependence of life and death decisions on place of birth raises serious ethical questions. In an accompanying editorial Annie Janvier and colleagues develop this theme further, with additional examples from the UK and the USA and with the evidence linking outcomes to unit activity. There remains an alarming proportion of extremely preterm infants born in the UK outside tertiary neonatal centres. Janvier and colleagues call for open transparent reporting of outcomes that are readily available to parents so that this may drive healthcare providers to improve practice. The cumulative evidence of variable standards is overwhelming and requires action from us all. Available infrastructure may not presently allow every single birth to take place in the right place but clinician inertia should never be the reason. *See pages F476 and 470*

CHANGES IN CARDIAC OUTPUT WITH SLEEP POSITION

In 34 healthy term infants studied by Tai-Wei Wu and colleagues, cardiac output decreased in prone sleep when compared with supine sleep. The changes were related to stroke volume rather than heart rate and were not associated with significant alteration in cerebral oxygenation. An accompanying editorial by Peter

Fleming *et al* places this information in the context of other evidence linking prone versus supine positioning with changes in the control of cardiovascular, respiratory and thermoregulatory control. We are reminded that although the pathophysiologic mechanisms underlying the association between prone sleeping and sudden unexpected death are uncertain, the advice about avoidance of prone sleeping is not. *See pages F483 and F472*

APPROACHES TO THE TREATMENT OF ISOLATED HYPOTENSION

Working out which infants require treatment with inotropic drugs and other measures to support the circulation remains an area of uncertainty where practice is more habitual than evidence based. In another study from the EPIPAGE2 cohort, Xavier Durrmeyer *et al* analysed data that were gathered prospectively about the presence of hypotension (defined as mean blood pressure less than gestational age) whether or not this was associated with other evidence of compromise and whether or not this was treated. Their focus was to look at the outcome of isolated hypotension not associated with other compromise. They used statistical modelling to control for confounding. In their analysis survival without disability was greater in infants with isolated hypotension when this was treated with fluid bolus, inotropes or corticosteroids than when it was left untreated, causing them to advise caution in the use of permissive hypotension. It is hoped that randomised trials in these circumstances will soon begin to fill in the blanks as long as the infants are given access to the trials by their treating clinicians. Details of these trials are included in a review article by Heike Rabe and Hector Rojas-Anaya covering the subject area in more detail later in this issue. *See page F490 and F547*

MANAGEMENT OF ULTRASHORT BOWEL

This review article Akshay Batra *et al* provides a wide ranging update on the epidemiology, management and outcome of infants with ultrashort (<10 cm) bowel. Although these infants are uncommon, this is an important read for all those involved

in caring for infants with the conditions that may give rise to it, including more common conditions such as necrotising enterocolitis and gastroschisis. Ethical considerations that arise are discussed. Good decision making requires good information and this article will be a valuable resource. *See page F551*

FEEDING AFTER NEC

Nick Embleton and Stephan Zalewski review the science behind feeding infants who are recovering from NEC when there is insufficient maternal breast milk available. They found no randomised controlled trials to guide practice so guidance relies on lesser evidence. They discuss considerations related to the various different nutritional elements. *See page F543*

SUSTAINED INFLATIONS

Georges Schmolzer *et al* randomised preterm infants to be stabilised at birth with the use of one or more 20 s sustained inflations versus conventional IPPV, with management of both groups also guided by quantitative exhaled carbon dioxide measurements. Infants who received sustained inflations at birth had shorter durations of mechanical ventilation. Other outcomes did not differ significantly. The study enrolled 162 babies and there were potential effects that were not statistically significant that may become important if they were replicated in a larger trial. This trial shows the deliverability of the approach, including the use of measurements of carbon dioxide elimination to guide practice. *See page F525*

NEW SYNTHETIC SURFACTANT

I have to confess a conflict of interest as a co-author in pointing you towards the first in human study of a new fully synthetic surfactant preparation with synthetic versions of the surfactant proteins SP-B and SP-C. Newborn infants with RDS responded rapidly to treatment with this new agent in a manner that would be expected had they received existing animal derived surfactant preparations, giving justification to a larger scale comparative evaluation. *See page F497*