Highlights from this issue

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LISA REVIEWED

Less Invasive Surfactant Administration (LISA) has always had intuitive appeal, and many clinicians have quietly adopted this technique while the evidence has been accumulating. Then again, intubation-surfactant-extubation (InSurE) is also appealing, and it too has become a popular practice. Both have clear advantages over leaving a baby intubated. So which approach is better, or is there no real difference? Aldana-Aguirre *et al* have now performed a systematic review and meta-analysis of 6 randomised trials to give a firm answer: LISA is definitely better. How much better? Significantly less ventilation and bronchopulmonary dysplasia, though unsurprisingly no impact on mortality. The number needed to treat to prevent a case of BPD from these pooled data is 20. But look at the forest plots: the secondary message here is that so many of the relevant studies were underpowered, and the answer only emerges when meta-analysis is done. ***See page F17***

OXYGEN RESUSCITATION FOR THE MOST PRETERM: HIGH OR LOW?

Another meta-analysis here, from Oei *et al*. This time the secondary message, which I will tell you first, is that the paper is a lesson in how important masking can be. The subjects were all babies under 28 weeks randomised to resuscitation in oxygen concentrations of 30% or less, versus 60% or more. In terms of mortality the pool of 3 masked studies favoured the low oxygen approach, while the pool of 5 unmasked ones favoured the high oxygen concentration. There was no discernible difference in relation to secondary outcomes. The primary message from the paper is that, unlike the LISA meta-analysis, there is no conclusive answer yet: more trials are needed. The authors draw attention to the problems with conducting such studies, as well as the lack of understanding of the physiology underlying preterm infants' responses to resuscitation. This paper probably won't change your local practice but it should help those planning further trials in this important area. ***See page F24***

PLANNING PALLIATION

Quite rightly, the way in which neonatal palliative care is planned, discussed, implemented and followed up has received increasing attention in recent years. Kukora *et al* report the utility of an antenatal palliative care plan for pregnancies with a very high chance of neonatal death. The paper is from Ann Arbor, Michigan, and it compares the outcomes of those babies where there was a plan with those where there was none. The data suggest that antenatal palliative care planning was a worthwhile objective. This was no RCT but the data are thought provoking and should help us to reflect on our local practices, especially in tertiary centres to which women with serious congenital anomalies in their fetuses tend to get referred. The accompanying editorial teases out these issues further and makes some useful additional points. ***See pages F12 and F4***

INFECTION: THE UPSTREAM APPROACH

ADC has been keen to promote quality improvement initiatives by publishing good papers on them. Here is a neat example from Australia where Bowen *et al* have been able to report a significant impact on infection reduction across 8 collaborating neonatal intensive care facilities in New South Wales and Australian Capital Territories. The initiative was implemented in stages and was multimodal; its overall effect was to halve infection rates over a period of 3 years. There are so many messages in this paper that I can't summarise them all here, but I do recommend that you read it closely. My own observation is that a great many babies were able to benefit from this approach because it was not confined to a single centre, and collaboration meant that good ideas and practices could cross over between facilities. ***See page F51***

PREDICTING ADVANCED RESUSCITATION

Apart from a study published 8 years ago (Aziz *et al*. Resuscitation 2008;79: 444–52) and one too recent to have been referenced by Berazategui *et al* in this edition (Tourneux *et al*. *The Journal of Maternal-Fetal & Neonatal Medicine*, doi: 10.1080/14767058.2016.1220527), very little has been published on predicting which deliveries would justify the attendance of personnel with advanced resuscitation skills. This paper, from Argentina, focused on babies of 34 weeks and more and included both antepartum and intrapartum factors. The authors distilled 10 principal factors from a multivariable model of risk, and validated them on a separate sample, yielding useful and generalisable predictors that are of practical value. The two least predictive factors were gestation (remembering that these babies were all 34+ weeks) and emergency caesarean section, while the most powerful predictors were fetal bradycardia, followed by intrauterine growth restriction. ***See page F44***

WHAT YOU LOOK FOR AND WHAT YOU FIND

I had hoped that the neonatal brain ultrasound scanning industry would fade away along with the incidence of intraventricular haemorrhage, and that ultrasound scanners would just get used for hearts. Far from it: the urge to image has only grown, so that in many places 'routine' head ultrasound scanning has been supplemented by routine MRI scanning, either at 40 weeks post-menstrual age or at discharge home. The trouble is, anything that becomes 'routine' carries unintended consequences, and it is no surprise that routine MRI images of babies' brains are plagued by exactly the same problems as are found in healthy adults subjected to high-tech imaging. Malova *et al* report incidental findings in 10% of ex-preterm babies 'routinely' given MRIs. I was intrigued that three-quarters of these 'required' an intervention: anyway, they received one. So here is your CPD question for this edition: 'Cerebral ultrasound scanning is the activity that causes the most angst and anxiety for parents of any neonatal intervention, yet has the least impact on management, and does nothing to mitigate the uncertainty about long term outcome; MRI achieves the same but with greater expense.' Discuss. ***See page F73***