



Highlights from this issue

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RISKS AND BENEFITS OF INVESTIGATION AND TREATMENT FOR EARLY ONSET SEPSIS

The dilemma facing clinicians over how to approach the investigation of possible early onset neonatal sepsis is perfectly illustrated by the study by Nitin Goel and colleagues and the excellent accompanying editorial by Karen Puopolo. There is no controversy that newborn infants with clinical signs consistent with possible sepsis should be investigated and treated promptly with antibiotics. The question is what should be done for clinically well infants with risk factors? They are at higher risk of becoming ill than the background population but the absolute risk is still low. Large numbers of such infants are screened and treated for every case of proven sepsis. There is likely to be advantage to the infants with infection being treated early while still free of clinical signs, but what about the disadvantages to the large number of infants treated unnecessarily. Goel and colleagues followed the National Institute for Health and Care Excellence (NICE) guideline in a population of 3593 infants born at ≥ 34 weeks gestation in eight hospitals in Wales and also assessed what would have been recommended had the infants instead been managed using the Kaiser Permanente Sepsis Risk Calculator (SRC). There were 576 (16%) infants treated with antibiotics according to the NICE guideline. The SRC would have recommended antibiotics for 156 (4.3%) and additional observations for a further 112. Overall, 54.5% of the infants flagged for intervention by the NICE guideline would have received standard newborn care if the SRC was used instead. There were six infants with culture proven EOS during the study and the two approaches individually each identified 3 of them. The others presented later with clinical signs. Both risk-based approaches have uncertain overall risks and benefits and will not identify all cases. A prospective comparative evaluation of the two approaches is being undertaken. *See pages F118 and F116*

PREMEDICATION FOR INTUBATION

Although most clinicians now use pre-medication for planned intubation in newborn infants, the regimen of choice varies and remains uncertain. Linda Truong and colleagues measured blood pressure, cardiac output and cerebral regional oxygen saturation during 37 intubation episodes where the infants received atropine, fentanyl or morphine, and cisatracurium. Ten of the infants had a greater than 20% decline blood pressure prior to first blade insertion which persisted for an average of 15 min. There were not significant associated changes in cerebral oxygenation or cardiac output. We still need better data to guide pre-medication for neonatal intubation, at least in infants at risk of intraventricular haemorrhage. *See page F123*

ACHIEVED OXYGEN SATURATIONS AND RETINOPATHY OF PREMATURITY IN EXTREME PRETERMS

In a post-hoc analysis Marie Gantz and colleague studied the achieved pulse oximeter saturation (SpO_2) readings of infants in the Surfactant Positive Airway Pressure and Pulse Oximetry Trial (SUPPORT) randomised controlled trial. The trial targeted SpO_2 to a lower (85%–89%) or higher (91%–95%) range from birth to 36 weeks' postmenstrual age or until the infants were off respiratory support. The analysis was restricted to time when the infants were breathing supplemental oxygen. Infants randomised to the higher SpO_2 target had a higher risk of developing severe retinopathy of prematurity (ROP) but a lower risk of mortality. For infants who spent at least 2 weeks on supplemental oxygen in postnatal weeks 1–5, a higher percentage of time spent with achieved SpO_2 91%–96% was associated with increased odds of severe ROP. This association of risk with time spent within the alarm limits of the intended target range suggests that when SpO_2 is targeted higher to reduce mortality, some increase in risk of ROP may be unavoidable. There was also an association with achieved SpO_2 97%–100% in weeks 6–9, which should be modifiable. *See page F138*

SURVIVAL OUTCOMES OF ACTIVE CARE IN EXTREMELY PRETERM INFANTS

Alexander Humberg and colleagues report survival outcomes of extremely preterm infants (22–28 weeks gestation) who received active care in the German Neonatal Network between 2011 and 2016. There were increases in survival rates over time, particularly in centres with lower survival rates earlier in the period of study. With increasing international focus on the outcomes of active care in infants born at 22 weeks gestation it is interesting to note that they accounted for 105/8222 (1.3%) of the infants of 22–28 weeks gestation. Survival after active care at 22 weeks gestation over the whole time period was 57%. *See page F190*

THERAPEUTIC HYPOTHERMIA FOR MILD HYPOXIC ISCHAEMIC ENCEPHALOPATHY

Survey data indicate a degree of therapeutic creep for hypothermia in the UK, with many centres offering treatment to infants with mild hypoxic ischaemic encephalopathy. Although these infants may be at significant risk of adverse outcome, trials have not evaluated the efficacy and safety of treatment. Ujwal Kariholou and colleagues performed a meta-analysis of data from randomised and quasi-randomised trials of therapeutic hypothermia, focusing solely on infants with mild encephalopathy who were inadvertently recruited. They identified 117 infants, of whom 56 were cooled. One or other of death or moderate or severe disability at ≥ 18 months occurred in 19.6% of the cooled babies and 19.7% of the babies who received usual care. The authors could not report separate detail on the motor and cognitive outcomes. With an event rate for adverse outcome considerably lower than that of untreated infants with moderate or severe encephalopathy, and no signal to encourage optimism about a large treatment effect, the invasiveness of the treatment becomes more important in discussions when the encephalopathy is mild. *See page F225*