



Highlights from this issue

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OPTIMAL CORD MANAGEMENT

Recognising the intact umbilical cord and placental circulation as an essential life-support system for newborn babies as they transition to extra-uterine life has required a lot of unlearning of well-intentioned but harmful habits that interrupt it. We are not there yet. We still need to learn more about the way to get the best out of extended physiological transition for more preterm infants. In the meantime, one of the barriers to wider implementation of delayed cord clamping strategies has been the number of infants where the process is not allowed or interrupted early because of perceptions that immediate resuscitation was required. This perceived urgency was probably one of the drivers for umbilical cord milking strategies, which allowed a measurable degree of placental transfusion to be demonstrated on a shorter timeline than was required with delayed cord clamping. Important physiological work by Douglas Blank and colleagues¹ published in this journal highlighted the markedly different haemodynamic patterns observed in cerebral blood flow and blood pressure with immediate cord clamping, umbilical cord milking and physiological transition. In particular, the surges in pressure and flow observed with milking were alarming. The systematic review and meta-analysis of umbilical cord milking by Haribalakrishna Balasubramanian and colleagues in this month's issue shows that, although placental transfusion is achieved by cord milking, its use in preterm infants significantly increased the risk of severe (grade III or more) intraventricular haemorrhage in comparison with delayed cord clamping. Milking has been used quite widely and may be a further example of the potential for interventions introduced ahead of adequate evaluation to prove unexpectedly harmful. Yet another reason that we need to get more newborn infants into trials.

With greater experience and comfort, teams implementing delayed cord clamping strategies find that progressively fewer infants are excluded from it. In their quality improvement study aimed at increasing the number of preterm infants who had their initial resuscitation and stabilisation with their umbilical cord intact, Emily Hoyle and colleagues achieved a dramatic increase in the proportion of infants who were managed with the intended strategy from 17% to 92% over a year of intervention. Among other things the number of infants whose cord was considered too short to enable

it diminished. Monochorionic twins were excluded from the intervention. This exclusion criterion is quite widespread and the babies are not few in number. It would be helpful to see data specifically on monochorionic twin outcomes with delayed cord clamping from groups who do not apply this exclusion. It was interesting to note that three infants were excluded from delayed cord clamping because of precipitate delivery before the neonatal team was present. Unless the placenta has delivered with the infant, this seems like a good opportunity to leave the infant on their placental life support pending team arrival.

In the UK, the British Association of Perinatal Medicine and National Neonatal Audit Programme will be publishing a toolkit to support teams in achieving optimal cord management and I look forward to seeing the details of this. *See page F572 and F652*

PREVENTION AND MANAGEMENT OF EARLY ONSET NEONATAL SEPSIS

Rachel Morris and colleagues provide further interesting observational data comparing the management recommendations of the Kaiser Permanente neonatal early-onset sepsis risk calculator (SRC) with those of NICE guideline CG149 in infants >34 weeks gestation. Culture positive early onset neonatal sepsis is an infrequent occurrence, but by combining data from five participating centres they analysed data from 70 confirmed sepsis cases in a birth population of 142333 infants. The SRC recommended antibiotics ahead of clinical concerns in the first 4 hours after birth in 27/70 infants and the NICE Guideline did so in 39/70. Four infants were treated early without clinical signs because of other perceived risks. All but three of the remaining infants had presented clinically by 24 hours. Both tools failed to identify a substantial proportion of the infants who would develop early onset sepsis before they developed clinical signs, demonstrating that ongoing clinical vigilance is vital whatever tool is used. The 12 infants who received their initial antibiotic treatment earlier with the approach recommended in the NICE guideline than would have been the case with the SRC may have gained some advantage, but the authors estimate that this may have required between 11386–16852 additional infants to receive intravenous antibiotics. The one infant that died had signs of sepsis and meningitis from birth. This study gives a measure of the scale of intervention required per case in the hunt for

earlier diagnosis and treatment of early onset neonatal sepsis and the potential for unintended consequences in pursuit of improved outcomes. *See page F609*

NEONATAL RESPIRATORY REFLEXES THAT MAY IMPACT ON TRANSITION

Kristel Kuypers and colleagues give a fascinating narrative review the array of competing reflexes that may influence the transition to breathing air at birth. Some of the reflexes may explain why routinely intervening to support infants who are transitioning spontaneously may be counterproductive by provoking laryngeal closure or precipitating apnoea. *See page F675*

UREAPLASMA AND AZITHROMYCIN

In a placebo controlled randomised phase II trial involving 121 preterm infants, Rose Marie Viscardi and colleagues demonstrated that a 3 day treatment course eradicated ureaplasma colonisation. The trial was not powered to show that eradication increased bronchopulmonary dysplasia free survival. The data support a future trial in colonised infants to examine this question. Rose Marie reviewed the compelling epidemiological and experimental evidence linking perinatal *Ureaplasma* species exposure to important morbidities of prematurity, such as bronchopulmonary dysplasia in a previous issue of the journal.² *See page F615*

REGIONAL BRAIN VOLUMES AND NEURODEVELOPMENT

Continuing a theme of analysing MRI scans beyond structural lesions in relation to later outcome that arose in the September issue of the journal, Claire Kelley and colleagues analysed MRI scans obtained at term equivalent age from 189 moderate-late preterm infants who had their development assessed at 2 years using the Bayley-III. Regional brain volumes in many regions were associated with better cognitive and language scores. *See page F593*

REFERENCES

- Blank DA, Polglase GR, Kluckow M, *et al.* Haemodynamic effects of umbilical cord milking in premature sheep during the neonatal transition. *Arch Dis Child Fetal Neonatal Ed* 2018;103:F539–46.
- Viscardi RM. Ureaplasma species: role in neonatal morbidities and outcomes. *Arch Dis Child Fetal Neonatal Ed* 2014;99:F87–92.