

Ben J Stenson, *Edition Editor*

### SURFACTANT NEBULISATION IN THE DELIVERY ROOM

In search of what would be truly non-invasive surfactant administration, Vincent Gaertner and colleagues investigated whether surfactant nebulisation in the delivery room immediately after birth would improve initial lung aeration in preterm infants born at 26–31 weeks' gestation. In a masked randomised controlled trial, treated infants received 200 mg/kg of surfactant delivered by a vibrating membrane nebuliser, commencing with the first application of a face mask after birth. Control infants received positive pressure alone using the same mask set-up without the nebuliser. Nebulisation took around a quarter of an hour. Thirty-five infants were studied. Prophylactic surfactant nebulisation did not improve lung aeration and ventilation homogeneity or clinical measures of early lung disease. It is disappointing that this approach was not effective. We still need to establish the least invasive approach to getting surfactant into the airway for the infants who need it. *See page F217*

### NASAL HIGH FLOW THERAPY TO OPTIMISE STABILITY DURING INTUBATION

The use of nasal high flow therapy (HFT) to reduce hypoxia during neonatal intubation is an area of emerging practice. In this double-blind pilot randomised controlled trial, Jason Foran and colleagues applied the nasal cannulae to all infants and delivered HFT with FiO<sub>2</sub> 1.0 to half of them during intubation in the neonatal unit. They aimed to demonstrate the feasibility of their masked study protocol for evaluation in a larger RCT and they were not powered to show significant differences in outcome. Their primary outcome was the duration of hypoxaemia

(SpO<sub>2</sub> < 75%) through all intubation attempts to successful intubation. 50 intubations episodes were studied. Intubation was successful at the first attempt around half the time, showing the importance of considering the whole episode beyond the first attempt. Intubation at the first attempt without physiological instability was seen a minority of infants. The median duration of SpO<sub>2</sub> < 75% was not significantly different between groups (29 s with nasal HFT and 43 s without it). Larger multicentre studies are needed to evaluate this approach. *See page 244*

### UMBILICAL CORD MANAGEMENT

Sara Handley and colleagues report the outcomes of preterm infants born < 27 weeks' gestation in the Eunice Kennedy Shriver NICHD registry from 2016 to 2018 according to their umbilical cord management at birth. There were 1900 infants and 64.1% were exposed to immediate cord clamping, 27.8% to delayed cord clamping and 8.1% to umbilical cord milking. Adjusted analyses demonstrate reduced odds of death or severe neurodevelopmental impairment with delayed cord clamping compared with immediate clamping. This difference was not mediated by severe IVH. There was not a statistically significant difference in outcome between delayed cord clamping (36.4%) and umbilical cord milking (46.3%), although numbers for this comparison were smaller. Quite a high proportion of infants (64%) received immediate cord clamping showing that delayed cord clamping was not strongly established at the time of study. In the Australian Placental Transfusion Trial 74% of infants randomised to delayed cord clamping received the intervention. *See page F224*

### MORTALITY AND NEURODEVELOPMENTAL OUTCOMES OF INFANTS WITH SPONTANEOUS INTESTINAL PERFORATION

The association between necrotising enterocolitis and risk of mortality and neurodevelopmental impairment is established. The situation with spontaneous intestinal perforation (SIP) is less clear, with a perception that this is a less worrying entity. Aside from the difficulty of differentiating reliably between the two conditions, data in this area rely on observational studies and statistical adjustment. Ju Li Ang and colleagues report a systematic review and meta-analysis of studies reporting mortality and neurodevelopmental abnormality in infants with SIP and they found that this condition was associated with adjusted odds of death or severe neurodevelopmental impairment of 2.18 (95% CI 1.55 to 3.06) and for death of 2.27 (2.07 to 2.49). The number of infants reported was small meaning that there is room for further large, well characterised cohorts. *See page F256*

### CHANGES IN THE GROWTH OF VERY PRETERM INFANTS IN ENGLAND 2006–2018

Analysis of weight gain data for around 29 000 infants born before 32 weeks of gestation in England during 2014–2018 in comparison with a smaller cohort of 3288 infants born 2006–11 shows that for all gestations below 30 weeks the infants born more recently showed greater weight gain velocity. This was associated with birth in a level three unit and with earlier initiation of parenteral nutrition. Postnatal weight gain in the more recent era was still less than may have occurred in equivalent fetuses in-utero. *See page F267*