



Highlights from this issue

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INCREASED TRANSPARENCY

Congratulations to Anna Paweletz and colleagues for submitting their breathtakingly simple innovation for improving the safety of neonatal procedures. The use of transparent drapes for procedures should be easy to implement more widely and could make an important contribution to patient safety. Some readers may say they have been doing this for years but most will have learnt something very helpful. *See page F 151*

CATHETER RELATED BLOOD STREAM INFECTION

Emily Keiran and colleagues performed a randomised controlled trial comparing the use of 2% chlorhexidine in 70% isopropyl alcohol with 10% povidone iodine for cleaning of insertion sites for placing central venous catheters in preterm infants. They recruited 304 infants <31 weeks gestation cared for in two hospitals and included 815 central venous catheters inserted for a cumulative total of 3078 days. The primary outcome of catheter related blood stream infection occurred in 7% of infants where the chlorhexidine in alcohol was used and 5% where the povidone iodine was used. Fewer than 1% of infants had skin reactions. Raised thyroid stimulating hormone levels were observed in 5% of infants who were exposed to the povidone iodine. Lisanne Janssen and colleagues report their observational experience of skin complications during two consecutive periods when first 0.5% chlorhexidine in 70% alcohol and then 0.2% chlorhexidine acetate were used for skin antisepsis in preterm babies <26 weeks gestation at birth. In these less mature babies, skin lesions were observed in 22% of the babies exposed to the chlorhexidine in alcohol and 5% of the infants exposed to chlorhexidine acetate. Duration of catheter placement was longer in this study and sepsis rates were higher. The two articles and the wider subject are placed in context by an excellent editorial by Paul Clarke and Mark Webber.

Although there is a risk of skin injury associated with the use of 2% chlorhexidine in 70% isopropyl alcohol and one way to reduce this is to use lower concentrations and omit the alcohol, with careful use it appears that this risk can be kept very low without a change of agent. The trial by Keiran and colleagues undermines further any justification for using povidone iodine antiseptic agents in immature infants. *See pages F94, F97 and F101*

C-REACTIVE PROTEIN LEVELS IN HEALTHY INFANTS

Serafina Perrone and colleagues measured CRP levels in 859 consecutively born healthy term newborns in Siena University Hospital. To be included, the babies had to have had an uncomplicated postnatal stay and were excluded if they received antibiotic therapy, had major congenital malformation or chromosomal anomaly, received hepatitis B vaccination, were born after signs of maternal chorioamnionitis or had complicated births. None of the infants developed sepsis in the first month of life. Antibiotic prophylaxis against Group B streptococcal infection had been administered to 48%. Mean CRP increased at 24 and 48 hours in comparison with the values at 12 hours. The 95th centile at 48 hours was 13.3 mg/dL. The box and whiskers plot in the paper suggests that the 5% of values above 13.3 mg/dL included values up to 20 mg/dL. The study is helpful in reminding us of the limitations of CRP values in isolation in guiding choices about antibiotic therapy or further investigation such as lumbar puncture in infants where there are not other ongoing concerns. *See page F163*

BREATHING DURING FETAL TO NEONATAL TRANSITION

Two studies of breathing patterns during transition after birth are jointly thought provoking. Vincent Gaertner and colleagues retrospectively reviewed 120 video recordings of newborn resuscitations. Four different types of stimulation

(drying, chest rub, back rub and foot flick) were defined and the frequency with which these were used and infant responses were documented. Infants who did not cry were commonly provided with ventilator support without prior stimulation. Infants born before 30 weeks gestation were stimulated less often (35%) than more mature infants (90%). Stimulation resulted in a cry less often in infants below 30 weeks gestation but rubbing the chest was followed crying in around a third of these infants. Jessica Crawshaw and colleagues used phased contrast x-ray imaging to view the upper airway continuously in newborn rabbit pups after birth. Some of the pups established spontaneous breathing. Others remained apnoeic and were given mask inflations. In the apnoeic pups it was commonly observed that the larynx remained closed, preventing lung aeration until the pup took a spontaneous breath, after which the larynx remained open and ongoing ventilation was unobstructed. Mask ventilation in immediately newborn preterm infants can be impeded by airway obstruction and if some of this is at the laryngeal level, then stimulating the infant to breathe as well as providing mask ventilation may be of more value than has been recognised in preterm infants. *See pages F132 and F112*

FETAL AND NEONATAL ANTIBIOTIC LEVELS AFTER INTRAPARTUM ANTIBIOTICS

Alberto Berardi and colleagues measured levels of ampicillin in the umbilical cord blood at birth and in blood samples taken from babies 4 hours after birth in a group of 120 newborns after variable exposure to intrapartum antibiotic prophylaxis. Ampicillin levels reached a peak in the umbilical cord blood within 30 min of administration and concentrations at 4 hours after birth remained well above the minimum inhibitory concentration for Group B Streptococci. *See page F152*