

Impact of minimally-invasive surfactant therapy in preterm infants at 29-32 weeks gestation

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ONLINE SUPPLEMENTAL TEXT

METHODS

The Hobart method of surfactant delivery was performed as described previously.¹ The procedure was performed by consultant neonatologists or senior trainees (n=13) skilled in standard neonatal intubation. Familiarity with the Hobart method was gained through video footage of the technique and practice using an intubation mannequin. Infants were swaddled and sucrose was used for premedication at the discretion of operator. Narcotic analgesia and atropine were not used. A thin, semi-rigid vascular catheter (16G Angiocath, BD, Sandy, Utah, USA) was passed through the vocal cords under direct laryngoscopic vision, and held in position while surfactant (poractant alfa, 80 mg/mL) was instilled in 2-3 boluses over 15-30 sec. Surfactant dose was 100 mg/kg in the early years as experience with the method was gained, and later increased to a maximum of 200 mg/kg, rounded down to a whole number of 120 mg vials. CPAP was maintained throughout the procedure.

Data were collected prospectively on the frequency of physiological destabilisation, defined as hypoxia with SpO₂ <80% and/or bradycardia <100 beats per minute lasting for more than 10 seconds. Need for positive pressure ventilation by mask was noted. Radiological severity of RDS was scored independently by two authors (SKMA and HDJ) on the most recent pre-procedure X-ray using the Kero radiological score,² with the average of the two scores

reported. Gas exchange (FiO_2 and capillary PCO_2) after surfactant instillation was compared with pre-treatment values, and oxygenation was logged to 48 h in all treated infants. Data on resource consumption and outcomes were collected for infants receiving surfactant via thin catheter, and also for the group of infants reaching the treatment threshold in the two RHH epochs. The data of 11 infants incorporated in a previous publication¹ are included in this report.

REFERENCES

1. Dargaville PA, Aiyappan A, De Paoli AG, *et al.* Minimally-invasive surfactant therapy in preterm infants on continuous positive airway pressure. *Arch Dis Child Fetal Neonatal Ed* 2013;**98**:F122-F126.
2. Kero PO, Makinen EO. Comparison between clinical and radiological classification of infants with the respiratory distress syndrome (RDS). *Eur J Pediatr* 1979;**130**:271-78.