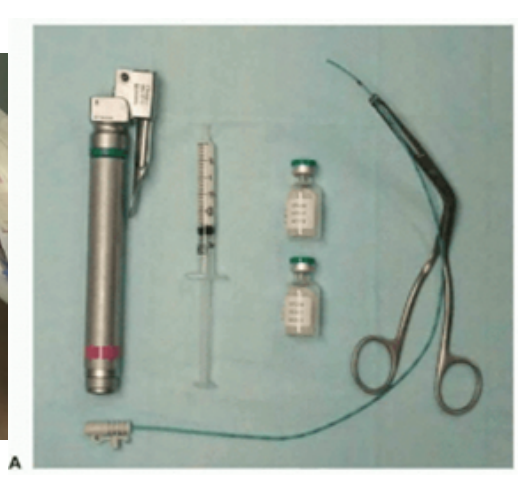
Systematic review found that using thin catheters to deliver surfactant to preterm neonates was associated with reduced bronchopulmonary dysplasia and mechanical ventilation.
Panza R et al, Acta Paediatr. 2020 Nov;109(11):2219-2225.

Objective: To compare surfactant administration via thin catheters with surfactant administration by intubation followed by immediate extubation (InSurE) in preterm RDS.
Design: A systematic literature review using the PubMed, Embase, Cochrane Library and Web of Science databases identified papers published up to November 5, 2019.
Patient: Preterm neonates with respiratory distress syndrome
Intervention: Less invasive surfactant administration(LISA) via thin catheter
Comparison: Intubation-Surfactant-Extubation (InSurE)
Primary Outcomes: Mechanical ventilation (MV) and Bronchopulmonary dysplasia (BPD)

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet

LISA in Preterm RDS Reduces Bronchopulmonary Dysplasia



A

B

Results:

- Studies included: 15 studies covering 4926 preterm infants. Six RCTs, Seven Observational studies and Two feasibility studies. Predominantly 23-28 weeks gestation age group.
- Compared with InSurE, administration of surfactant via thin catheter have significant lower -
- Bronchopulmonary dysplasia in RCTs (RR, 0.47; 95% CI 0.33-0.66; P < .01) and in the observational studies (OR 0.47; 95% CI 0.43-0.52; P < .01)
- Early intubation rates in RCTs (RR, 0.63; 95% CI 0.55-0.72; p<0.01) and in the observational studies (OR, 0.40; 95% CI 0.35-0.45; p<0.0001).
- No difference between the groups with respect to rates of serious adverse events (Adj OR 1.14; 95% CI, 0.78 to 1.67)

- **Key messages:**
- LISA techniques are associated with a decreased need for mechanical ventilation and reductions in the incidence of BPD.
- These findings strengthen the 2019 European guidelines statement on the management of RDS that LISA should be the preferred mode of surfactan delivery.
- Procedures require specific training and should only be performed by neonatologists or neonatal fellows that are specifically trained and familiar with the technique.

EXPERT COMMENT

"Less invasive methods of surfactant delivery are evolving as effective modality to decrease mechanical ventilation and bronchopulmonary dysplasia in micro preemies"

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Reference :
Panza R, Laforgia N, Bellos I, Pandita A. Systematic review found that using thin catheters to deliver surfactant to preterm neonates was associated with reduced bronchopulmonary dysplasia and mechanical ventilation. Acta Paediatr. 2020 Nov;109(11):2219-2225. doi: 10.1111/apa.15374.