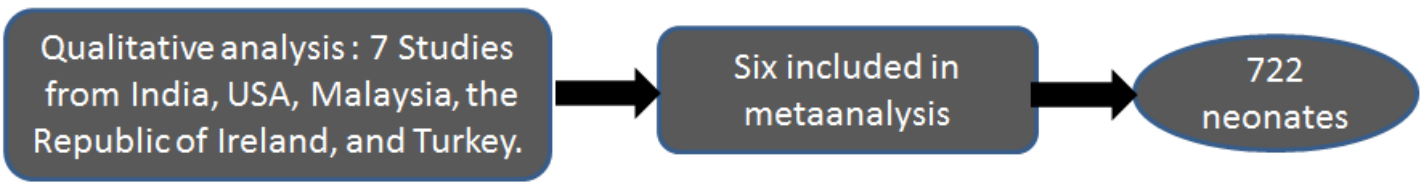
Objective:
To determine the safety and efficacy of NCPAP delivery via nasal masks, compared to binasal prongs, among preterm infants receiving NCPAP.

Patient:
Neonates in 26-34 week Gestation and/or <1500 gram birthweight requiring NCPAP for Respiratory distress in Delivery room after routine resuscitation and Post Extubation Respiratory Support

Design:
Proportion of infants requiring intubation and mechanical ventilation within 72h of initiation of NCPAP and the proportion of infants with skin injury resulting from the NCPAP interface.



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

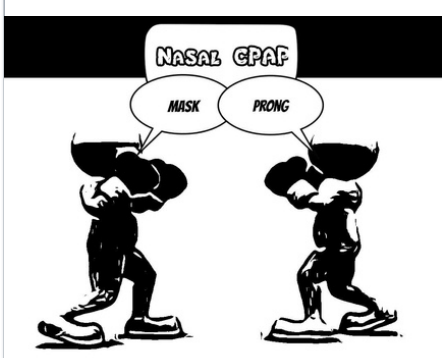
Pediatric Evidence And Research Learning Snippet

Choice Of Interface In CPAP DELIVERY: Mask Or Prongs in Preterm Infants

Mask versus Prongs for Nasal Continuous Positive Airway Pressure in Preterm Infants: A Systematic Review and Meta-Analysis King BC et al, Neonatology, 2019;116(2):100-114 DOI:10.1159/000496462

Outcomes:
Compared to nasal prongs, Use of nasal mask has:
- 28% less chance of CPAP failure within 72 hours (NNTB-12.8)
- 73% less chance of moderate to severe nasal injury (NNTB 4.8)
- 22% less chance of surfactant need (NNTB 8.33)
- 53% less incidence of moderate-to-severe bronchopulmonary dysplasia when used for RDS in delivery room (NNTB 16.7)

No difference in incidence of pneumothorax, death, CPAP duration, Intraventricular Haemorrhage, Retinopathy of prematurity



Challenges with Nasal Prongs
- ❑ Risk of injury to the nares and nasal septum
- ❑ Need to fit snugly
- ❑ Significant variability and difficulty in finding appropriately sized prongs

Advantages with Nasal Mask
- ❑ More anatomically appropriate fit
- ❑ Fewer sizes to fit all
- ❑ Better seal and minimize airway obstruction
- ❑ Less pressure on nasal septum

Key Message:
- Nasal mask as preferred interface for CPAP delivery offers clinical advantage in reducing CPAP failure, surfactant need and moderate to severe bronchopulmonary dysplasia.
- Safety profile is also better than prongs with decrease incidence of nasal septum injury in mask usage.

EXPERT COMMENT

"Nasal masks should be considered as the preferred interface for CPAP delivery in preterm infants"

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Reference

King BC, Gandhi BB, Jackson A, Katakam L, Pammi M, Suresh G. Mask versus Prongs for Nasal Continuous Positive Airway Pressure in Preterm Infants: A Systematic Review and Meta-Analysis. Neonatology. 2019;116(2):100-114. doi: 10.1159/000496462. Epub 2019 Jun 4. PMID: 31163418.