

Background:

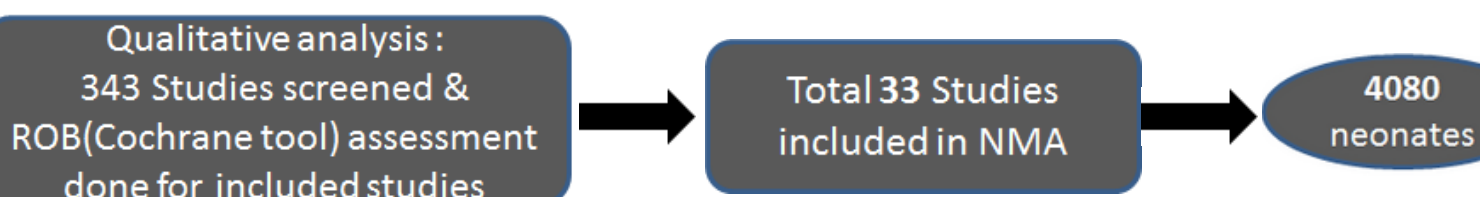
Multiple NRS modalities are used for post-extubation support in preterm neonates.

Objective:

Seven NRS modalities were compared – constant flow continuous positive airway pressure (CPAP) (CF-CPAP) (bubble CPAP; ventilator CPAP), variable flow CPAP (VF-CPAP), high flow nasal cannula (HFNC), synchronized non-invasive positive pressure ventilation (S-NIPPV), nonsynchronized NIPPV (NS-NIPPV), bilevel CPAP (BiPAP), non-invasive high-frequency oscillation ventilation (nHFOV).

Design:

Systematic review and network meta-analysis (NMA) using the Bayesian random-effects approach. MEDLINE, EMBASE, CENTRAL, WHO-ICTRP were searched. Main Outcome Measure: Requirement of invasive mechanical ventilation within 7 days of extubation.



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

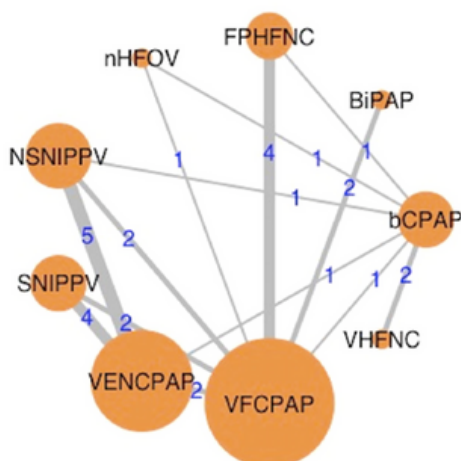
Pediatric Evidence And Research Learning Snippet



Choice of Mode of Non-invasive RESPIRATORY SUPPORT (NRS) FOR Post Extubation in preterm neonates

Efficacy of noninvasive respiratory support modes as postextubation respiratory support in preterm neonates: A Systematic Review & network Meta-Analysis Viraraghavan V Ramaswamy, Kiran More, Amit Gupta et al, Pediatric Pulmonology. 2020

Geometry of the network for the outcomes

**Results:**

- ❑ S-NIPPV, NS-NIPPV, nHFOV, & VF-CPAP were more efficacious in preventing reintubation than CF-CPAP. (RR [95% CrI] - 0.22 [0.12, 0.35]; 0.44[0.27, 0.67]; 0.42 [0.18, 0.81]; 0.73 [0.52, 0.99])
- ❑ Surface under the cumulative ranking curve (SUCRA) value ranked S-NIPPV to be the best postextubation intervention (SUCRA: 0.98)
- ❑ S-NIPPV was more effective than NS-NIPPV, BiPAP, VF-CPAP, and HFNC (RR [95% CrI]: 0.52 [0.24, 0.97]; 0.32 [0.14, 0.64]; 0.30 [0.16, 0.50]; 0.24 [0.12, 0.41])
- ❑ NS-NIPPV resulted in lesser reintubation compared to VF-CPAP and HFNC (RR [95% CrI]: 0.61 [0.36, 0.97]; 0.49 [0.27, 0.80]).
- ❑ BiPAP, VF-CPAP, and HFNC had comparable efficacies.

Key Message: S-NIPPV might be the most effective modality for preventing extubation failure.

EXPERT COMMENT



“Synchronised-Noninvasive positive pressure ventilation (S-NIPPV) can be considered as preferred mode of respiratory support in preterm neonates after extubation from invasive ventilation”

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Reference

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<https://doi.org/10.1002/ppul.25007>