Nasal high flow is an effective form of respiratory support for preterm infants

A recent review published in *Cochrane Database of Systematic Reviews*[1] asked whether the use of nasal high flow (nHF, also known as high flow nasal cannulae) is as effective as other non-invasive methods of respiratory support in preventing chronic lung injury and death in preterm infants.

The nHF technique delivers supplemental oxygen via small, thin tubes that sit just inside the nostrils. In recent years, it has become popular in some neonatal intensive care units (NICUs) due to its ease of use and perceived effectiveness and patient comfort. Fifteen randomised studies were identified that compared nHF with other non-invasive methods supporting infant breathing (eg continuous positive airways pressure – CPAP, or nasal intermittent positive pressure ventilation – NIPPV). The authors conclude that the use of nHF has similar rates of efficacy to other forms of non-invasive respiratory support in preterm infants for preventing treatment failure, death and chronic lung disease. However, they warn that randomised controlled trials are lacking and further evidence for evaluating the safety and efficacy of nHF in extremely preterm and mildly preterm subgroups is needed. Most of the evidence looks at the use of nHF as post-extubation support where it's associated with less nasal trauma and possibly reduced pneumothorax compared with nasal CPAP.

Meanwhile a pilot study, published in *Archives of Disease in Childhood Fetal and Neonatal Edition*,[2] looked at the feasibility of starting nHF therapy in the delivery room. The researchers from

St Peter's Hospital, Surrey, successfully stabilised 25 infants of <30 weeks' gestation in the delivery room and transferred them to the NICU on nHF (successful transfer and stability was defined by oxygen requirement, temperature, need for surfactant and inotrope use).

References

1. **Wilkinson D. et al.** High flow nasal cannula for respiratory support in preterm infants. *Cochrane Database Syst Rev* 2016:CD006405.
2. **Reynolds P. et al.** Stabilisation of premature infants in the delivery room with nasal high flow. *Arch Dis Child Fetal Neonatal Ed* 2016;101:F284-87.

Breastfeeding premature infants improves long-term heart development

A study published in *Pediatrics*[1] demonstrates a beneficial association between breastfeeding and cardiac morphology in adulthood in preterm-born individuals.

The hearts of adults who were born preterm have smaller chambers, thicker walls and reduced function; the preterm postnatal period is a key developmental window during which these cardiac changes emerge. A team of researchers from Oxford University investigated how different feeding regimes affected the development of the heart over time and found that breastfeeding and the amount of breast milk in the diet was associated with better heart volume and function when compared to formula feeding. One hundred and two premature-born adults took part in the study, alongside a further 102 people of similar age who were born at full term.

The findings support the promotion of human milk for preterm infant care to reduce long-term cardiovascular risk.

Reference

1. **Lewandowski A.J. et al.** Breast milk consumption in preterm neonates and cardiac shape in adulthood. *Pediatrics* 2016;138:e20160050.