

MEETING ABSTRACT

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# Hospital management of severe bronchopulmonary dysplasia

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Despite early surfactant therapy, better ventilator strategies and greater use of noninvasive positive pressure ventilation, bronchopulmonary dysplasia (BPD) continues to be a complication of premature births.

The mainstay of supportive care for infants with severe BPD is mechanical ventilation with an endotracheal tube, however treatment can last for a long time and have many complications. When safe extubation is not possible because of multiple failed attempts, tracheostomy is sometimes recommended [1-5]. In all age groups outside the neonatal period, placement of a tracheostomy is considered after a few weeks of mechanical ventilation [6,7]. By contrast, the optimum time and safety procedures have not yet been determined for the placement of a tracheostomy in infants with BPD who need protracted ventilation. Reasons for not performing a tracheostomy in these patients include technical concerns associated with small patient size or the need for high ventilator settings. On the other hand the placement of a tracheostomy early in the course of severe BPD could have positive effects such as improved comfort, decreased need for sedation, lower systemic corticosteroid exposure, and enhanced nutrition and growth.

Recent data [8] suggest that a reasonable approach is that chronically ventilated infants should be assessed at 3 months of age, that is around or shortly after 40 weeks corrected gestational age. If the respiratory support remains high and has been so for 2 months with no evidence of improvement and after multiple attempts to wean the baby off positive pressure ventilation, then infants should be considered for a tracheostomy placement. Another important point highlighted by this report is that tracheostomies should be considered a safe

procedure even in infants on high pressures and high concentrations of supplemental oxygen.

Other results [9] suggest a potential association between earlier (<120 days) tracheostomy and better neurodevelopmental outcomes. Actually, while an infant awaits a tracheostomy, the medical focus is often on strategies to allow weaning and limit ventilator-associated lung injury. Following a tracheostomy, the focus may shift to maximizing parent-child interaction and developmental improvement. Furthermore, after tracheostomy, there is often an opportunity to wean the baby off sedating medications, which are frequently associated with increased risk of neurodevelopmental impairment.

In conclusion tracheostomy does not mitigate the significant risk for adverse neurodevelopment that is associated with the many complications of prematurity; however, if tracheostomy is to be performed, earlier surgery may allow opportunities for enhanced neurodevelopmental outcomes.

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