

Management of post-extubation stridor

Endotracheal ventilation can result in upper airway inflammation and oedema leading to obstruction and stridor which may be a contributing factor in failure of extubation. This is more likely where mechanical ventilation has been traumatic, prolonged or has occurred on multiple occasions (1). Due to the relatively small diameter of the neonatal airway, a small amount of oedema may result in significant airway obstruction.

Three Cochrane articles have reviewed the management of post-extubation stridor in neonates, one assessing the evidence for the use of nebulised adrenaline (1) (lack of RCTs to support use) and two for the use of steroids (2,3). These reviews suggest that there may be a benefit of multi-dose dexamethasone in high risk groups (i.e. babies who have had prolonged or repeated intubations) but that there was no evidence to support the use of steroids in low-risk patients in view of the known short term (hyperglycaemia and hypertension) and long term (neurological abnormalities) side-effects associated with steroids.

If there is concern that the baby may develop stridor, particularly if a previous extubation has been unsuccessful because of stridor, the use of dexamethasone prior to extubation may be considered in some infants. Because of concerns about neurological impairment associated with dexamethasone in preterm infants, its use should be exceptional and carefully balanced against risks of continuing intubation or other therapies such as CPAP/adrenaline. Such a decision would only be made by a consultant.

In an extubated baby, if stridor becomes a significant problem to the extent where re-intubation is a consideration then the following measures may be of benefit:

1. the baby should be nursed prone and in a calm environment
2. humidification of air/oxygen
3. give oxygen to maintain saturations within the normal range for gestation
4. consider CPAP (this may improve airway patency)
5. consider a trial of nebulised adrenaline
6. dexamethasone - see comment above

References

1. Davis MW, Davis PG, Cochrane Database of Systematic Reviews 2009
2. Kemani RG, Randolph A, Markovitz B. Cochrane Database of Systematic Reviews 2009
3. Davis PG, Henderson-Smart DJ, Cochrane Database of Systematic Reviews 2009