

RESPIRATORY PROBLEMS AND MANAGEMENT

Section 2: Respiratory problems and management
Surfactant administration
Date created: June 2006
Date revised: Jan 2014
Review date: Jan 2017

Neonatology Clinical Care Unit Guidelines
King Edward Memorial/Princess Margaret Hospitals
Perth Western Australia
Authorisation & review by
Neonatal Coordinating Group

SURFACTANT ADMINISTRATION [QRG- SURFACTANT ADMINISTRATION.PDF](#)

Surfactant therapy is given to minimise the severity of Respiratory Distress Syndrome (RDS) by reducing alveolar surface tension and stabilising the alveoli against collapse in:

- Clinical signs of respiratory distress, or at high risk of respiratory distress syndrome.
- Conditions related to surfactant deficiency e.g. meconium aspiration, congenital pneumonia and diaphragmatic hernia

Prophylactic treatment is considered to be treatment in the delivery room before or shortly after the first breath. A single dose should be administered preferably within 15 minutes of birth. Surfactant should NOT be instilled into a main stem bronchus.

Non-prophylactic treatment should commence as soon as possible after diagnosing RDS. Confirmation of endotracheal tube position by radiological assessment is beneficial prior to administration. However, administration should not be delayed waiting for an X-ray to be taken.

SURFACTANTS

Survanta or Curosurf. Curosurf used only at discretion of SR or Consultant. See *NCCU Medication protocol for Surfactant for information on dose and storage.* [Survanta](#) / [Curosurf](#)

KEY POINTS

1. Medical Staff should be present for at least the first 5 minutes after administration to alter ventilation settings as required (ventilator rate, FiO₂ and inspiratory time settings). Any increase in ventilator settings should be based on the infant's tolerance of the procedure. Unnecessary increases may increase lung damage. Reassess ventilator settings every 15 minutes for an hour, then hourly thereafter. Note changes in Sao₂, TV, MV.
2. Curosurf can improve oxygenation and lung compliance more rapidly than Survanta. Increase in lung volume is an indication of improved lung compliance. Reduction in FiO₂ may be required within 5 minutes of administration.
3. Adverse reactions to surfactant administration include transient hypoxia and bradycardia, oxygen desaturations, endotracheal tube blockage and air leaks. If there is significant desaturation or bradycardia, stop the administration temporarily
4. Endotracheal suctioning should be avoided for as long as possible (at least 1 hour after administration). The infant may be suctioned prior to the second dose if clinically indicated but this is not routine practice
5. Surfactant administration is a two-person procedure. The infant must have monitoring throughout.

ADMINISTRATION EQUIPMENT AND PROCEDURE (TRACHMAC DEVICE)

EQUIPMENT

- Trachmac Device; size FG 5 for size 2, 2.5, 3, 3.5 endotracheal tubes
- Surfactant (Survanta or Curosurf)
- 10ml syringe, drawing up needle & alcohol wipe.