CUROSURF® (poractant alfa)

Indication	• In premature infants, prophylaxis and treatment of respiratory distress syndrome (hyaline membrane disease)[1] • In infants with meconium aspiration syndrome, may reduce the severity of respiratory illness and decrease the number with progressive respiratory failure requiring support with ECMO[2]

INTRA-TRACHEAL

Presentation	• Vial: 120mg in 1.5mL | 240mg in 3mL for intra-tracheal use
Dosage (initial)	• 2.5 mL/kg (200 mg/kg)[3,4]
Dosage (repeat)	• 1.25 mL/kg (100 mg/kg)[1] o Second dose: 6–12 hours after first dose[4] o Third dose: 12 hours after second dose[4] • More than three doses not recommended[1]
Preparation	• Warm vial slowly to room temperature (in hand or stood at room temperature)[1] • Gently turn vial upside down to obtain uniform suspension. Do not shake[1] • Inspect for discolouration—colour is white to creamy white[1] • Draw up prescribed dose (undiluted), leaving 1–2 cm of air in the syringe to follow dose through (to ensure entire dose administered)
Administration (Neopuff™ or inpatient vent circuit)	• There are multiple methods of safe administration • Administer as per local unit protocol at rate tolerated by infant o If no local protocol, refer to *Procedure for administration* below

Special considerations	• Administration under guidance of neonatologist/paediatrician, NNP or clinician experienced in neonatal resuscitation, intubation, ventilation and monitoring[5] • Limited evidence for prophylactic use o Administration at consultant discretion • If curosurf is indicated, administer as soon as possible after intubation • Disconnection of the circuit from ETT not recommended as results in loss of lung volume/recruitment • If catheters are used for administration (e.g. 5 FG feeding catheter), do not insert below the end of the ETT • As required, consider religious/cultural issues related to porcine origin
Monitoring	• Chest x-ray if ETT depth is uncertain from clinical assessment • Continuous cardiorespiratory and oxygen saturation monitoring[1] • Clinical surveillance and monitoring of ventilatory support requirements as oxygen saturations and pulmonary compliance (increased chest wall movement) can improve rapidly following administration[1] • Blood gas within 15 to 30 minutes of administration or as per local protocol o Subsequently as clinically indicated
Compatibility	• Nil known
Incompatibility	• Nil known
Interactions	• Nil known[6] • May be given after an initial dose of survanta and vice versa
Stability	• Store in refrigerator. Protect from light[5] • Can be warmed to room temperature for up to 24 hours prior to use[5] o Unopened vials that have been warmed to room temperature can be returned to refrigerator once[5]—label with time and date of initial warming • Discard remaining product after use[5]
Side effects	• Most frequently reported during administration: transient bradycardia, hypotension, oxygen desaturation and ETT blockage[3]
Actions	• Exogenous (porcine origin) pulmonary surfactant that reduces alveolar surface tension and increases lung compliance[5]

Abbreviations	ECMO: extracorporeal membrane oxygenation, ETT: endotracheal tube, FG: french gauge, NNP: neonatal nurse practitioner, SIMV: spontaneous intermittent mandatory ventilation
Keywords	Curosurf, poractant alfa, surfactant, prematurity, respiratory distress syndrome, RDS, hyaline membrane disease, HMD, bronchopulmonary dysplasia, meconium aspiration, MAS

Procedure for administration (if no local protocol)

Timing	Procedure
Prior to administration	• Ventilator preparation o If inpatient ventilation circuit, remove flow sensor from circuit o If volume targeted ventilation, switch to pressure limited (conventional) ventilation (e.g. SIMV). Set inspiratory pressure at the approximate level previously required for volume targeted ventilation • Infant preparation o Position baby in neutral supine position[1] o Assess patency and security of ETT[1] o Ensure correct ETT position (T1 to T2) to avoid instillation into right mainstem bronchus o Suction ETT if required[1]
Method of administration	• Using syringe and blunt 18 G drawing-up needle o Clean manifold port with alcohol wipe o Inject prescribed dose directly into ETT circuit manifold port using syringe and blunt needle o Deliver at rate as tolerated by infant and so that dose does not back up into manifold o Follow dose with 1–2 mL of air to ensure entire dose is delivered into airway
During administration	• Continue ventilation throughout administration • If adverse events (bradycardia, ETT blockage, hypotension, oxygen desaturation) slow or stop administration until chest wall movement adequate[1] • Manual breaths may be required if chest wall movement is diminished and/or infant desaturates
Post administration	• Once effective chest wall movement o Reinsert flow sensor (attach to ETT first and then to circuit) o Resume desired ventilation method o Assess (and wean as indicated) oxygen/pressure requirements o Observe for signs of pneumothorax o Avoid airway suction for as long as possible, unless airway obstruction occurs

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

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