

Exogenous Surfactant Therapy in Newborn Infants

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Abstract

Exogenous surfactant therapy has an established role in the management of neonatal respiratory distress syndrome (RDS). This article summarises the current evidence on surfactant therapy. The use of surfactant for the treatment or prophylaxis of neonatal RDS results in a 30% to 65% relative reduction in the risk of pneumothorax and up to a 40% relative reduction in the risk of mortality. Adverse effects, of which pulmonary haemorrhage is of most concern, are infrequent and long-term follow-up studies of treated patients are reassuring. Natural surfactants have advantages over synthetic surfactants, including a lower frequency of pneumothorax and a lower mortality. Prophylactic administration of surfactant is preferred over 'rescue' administration, especially in infants of <30 weeks' gestation, as it decreases the risk of pneumothorax, pulmonary interstitial emphysema and neonatal mortality. Prophylaxis can be administered after initial resuscitation and stabilisation. In preterm infants who do not receive prophylactic surfactant, the first dose of surfactant should be administered as early as possible – early selective treatment decreases the risk of pneumothorax, pulmonary interstitial emphysema, chronic lung disease and neonatal mortality. A regimen of using multiple doses of surfactant if required has advantages over a single dose regimen. Exogenous surfactant therapy has also been used in neonatal respiratory disorders other than RDS. In trials in severe meconium aspiration syndrome, surfactant therapy reduced the need for extracorporeal membrane oxygenation. Its role in other disorders requires testing. The development and testing of newer surfactants is in progress.

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