What is the definition of chronic lung disease (CLD)?

“The current definition...is broad and hazy, with several competing definitions in the literature” (Charafeddine, 1999). The original description of the condition (Northway, 1967) indicated that oxygen dependency at 28 days of age was diagnostic, and this definition is still widely accepted (Baraldi, 2007; Panickar, 2004). Other definitions include oxygen dependence at 28 days of age with at least 21 days of oxygen supplementation and consistent chest x-ray findings (Bancalari, 1979), and oxygen at 36 weeks corrected gestational age (Shennan, 1988).


Evidence Level: IV

How do different dexamethasone dosing regimes compare in terms of risks v benefits?

Three Cochrane systematic reviews (Halliday, 2009i; Halliday, 2009ii; Halliday, 2003) have concluded that the benefits of early (<96 hours), moderately early (7-14 days) and late (>3 weeks) treatment with corticosteroids may not outweigh the actual or potential adverse effects. In particular, no study to date has been sufficiently powered to detect important adverse long-term neurosensory outcomes (Halliday, 2004i). In view of this, the recommendation is to reserve treatment for those infants who cannot be weaned from mechanical ventilation, and to minimise the dose and duration of any course of treatment.

A further Cochrane review of 5 trials comparing inhaled versus systemic corticosteroids (Shah, 2004) found no advantage for inhaled steroids, either in effectiveness or in side-effect profiles. Significant adverse effects, in terms of spontaneous gastrointestinal perforation, cessation of weight gain, and smaller head circumference have been recorded at moderate dose levels (0.15-0.02mg/kg over 10 days) (Stark, 2001) as well as the more usual dose of 0.5-0.05mg/kg over 12 days (Anon, 2002).

A retrospective, two-centre study (van der Heide-Jalving, 2003) compared 25 hydrocortisone-treated patients (tapering dose of 5-1mg/kg for 22 days) and 25 controls with 23 dexamethasone-treated patients (tapering dose of 0.5-0.1 mg/kg for 21 days) and 23 controls. Effectiveness was found to be equal, but both short and long term adverse effects were significantly fewer in the hydrocortisone group. A more appropriately-powered study needs to be conducted in order to confirm these findings.


Halliday HL, Ehrenkranz RA, Doyle LW. Early (< 8 days) postnatal corticosteroids for preventing chronic lung disease in preterm infants. Cochrane Database of Systematic Reviews 2009, Issue 1. Art. No.: CD001146
Evidence Level: I

What is the role of diuretics?
Lung disease in preterm infants is often complicated with lung oedema. A group of 3 Cochrane reviews on diuretic treatment in these patients (Brion, 2002i, Brion, 2002ii; Brion 2001) found that, in infants >3 weeks of age, treatment with thiazide, spironolactone, or furosemide improved lung compliance and pulmonary mechanics, albeit for short periods of time. No effects were seen on mortality, need for ventilatory support, length of hospital stay, or long-term outcomes. More studies are needed to assess whether thiazide added to spironolactone or metolazone added to furosemide has any beneficial effect.


Brion LP, Primhak RA. Intravenous or enteral loop diuretics for preterm infants with (or developing) chronic lung disease. The Cochrane Database of Systematic Reviews 2002, Issue 1. Art. No. CD001453


Evidence Level: I