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Lung alert

Epinephrine and dexamethasone reduce hospital admission in children with bronchiolitis

Bronchiolitis is the most common acute infection of the lower respiratory tract in infants. This multicentre, randomised, double-blind, placebo controlled clinical trial was conducted in response to controversy surrounding the current treatment of bronchiolitis.

Patients were recruited at eight Canadian paediatric emergency departments from 2004 through 2007. Bronchiolitis was defined as the first episode of wheezing associated with signs of an upper respiratory tract infection during the peak respiratory syncytial virus season. A total of 3556 infants (aged 6 weeks to 12 months) were assessed for eligibility; 2756 were excluded and 800 were enrolled and randomised into four groups: nebulised epinephrine plus oral dexamethasone (group 1); nebulised epinephrine plus oral placebo (group 2); nebulised placebo plus oral dexamethasone (group 3); and nebulised placebo plus oral placebo (group 4).

Combining epinephrine and dexamethasone led to a reduction in the rate of hospital admissions within 7 days (primary outcome). There was a relative risk reduction of 35% compared with placebo. Infants in group 1 had lower respiratory rates and lower respiratory distress assessment index scores during the first hour of the study, were discharged earlier from medical care and appeared to return to quiet breathing and normal or almost normal feeding more quickly (secondary outcomes) than those in the placebo group. Dexamethasone and epinephrine alone did not affect these outcomes.

Controversy still exists in the management of bronchiolitis, but this study suggests that the combination of dexamethasone and epinephrine is beneficial and a starting point for further research.

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