Review: corticosteroids do not reduce hospital length of stay or respiratory distress in infantile acute viral bronchiolitis

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Patel H, Platt R, Lozano JM, *et al*. Glucocorticoids for acute viral bronchiolitis in infants and young children. *Cochrane Database Syst Rev* 2004;(3):CD004878.

Clinical impact ratings GP/FP/Emergency Medicine ★★★★★★☆ GP/FP/Primary Care ★★★★★☆☆ Emergency Medicine (specialist) ★★★★★☆☆ Paediatrics (Specialist) ★★★★★★☆ Respirology ★★★★★☆☆

Q In infants and young children with acute viral bronchiolitis, do systemic corticosteroids shorten hospital length of stay (LOS) or improve respiratory distress more than placebo or no corticosteroid treatment?

METHODS

Data sources: Cochrane Central Register of Controlled Trials (issue 3, 2003), Medline (1966 to September 2003), EMBASE/Excerpta Medica (January 1990 to September 2003), Current Contents (1998–2000), and SCISEARCH; reference lists of general paediatric, infectious diseases, and respirology textbooks; reference lists of retrieved studies and recent review articles; meeting abstracts; authors of published abstracts; and experts in the field.

Study selection and assessment: randomised controlled trials (RCTs) in any language that evaluated systemic corticosteroids in infants and young children ⩽24 months of age with acute viral bronchiolitis. Study quality was assessed using the Jadad scale.

Outcomes: hospital LOS and clinical severity scores (degree of respiratory distress over time). Hospital admissions were assessed in patients recruited from the emergency department (ED).

MAIN RESULTS

13 RCTs met the selection criteria (n = 1198, age range 0–30 mo). 10 trials were set in inpatient paediatric hospital wards; 3 trials recruited patients from the ED and outcomes were measured in hospital or at home. Hospital LOS data were pooled in 7 RCTs of inpatients; groups did not differ for LOS (table). In 3 RCTs where recruitment and the start of intervention occurred in the ED, groups did not differ for hospital admission rates (table). Clinical score data pooled in 8 RCTs showed no difference between groups in day 3 clinical score (table).

CONCLUSION

In infants and young children with acute viral bronchiolitis, systemic corticosteroids do not shorten hospital length of stay or improve respiratory distress more than placebo or no corticosteroid treatment.

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Commentary

Viral bronchiolitis is a common lower respiratory tract infection in infants and a frequent cause of hospital admission. The systematic review by Patel *et al* adds to a list of previous Cochrane reviews that all failed to show a significant effect on clinically relevant outcomes (eg, LOS or requirement for mechanical ventilation) for any of the treatments that are currently widely used (ie, inhaled bronchodilators, adrenaline or corticosteroids, immunoglobulins, and ribavirin).[1 2]

Given these data, only supportive treatment, if any, remains to be considered in infants with bronchiolitis. Such treatments include maintenance of adequate hydration and oxygenation. Thus, most infants are only admitted to hospital because no reliable tool exists to predict who will have apnoea or respiratory failure. Clinical experience suggests a trial of continuous positive airway pressure in infants with respiratory failure, but again insufficient evidence exists from RCTs for this treatment.[3] There remains an urgent need for large, well designed RCTs in this field.

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1 Hartling L, Wiebe N, Russell K, *et al*. Epinephrine for bronchiolitis. *Cochrane Database Syst Rev* 2004;(1):CD003123.
2 Fitzgerald DA, Kilham HA. Bronchiolitis: assessment and evidence-based management. *Med J Aust* 2004;**180**:399–404.
3 Shah PS, Ohlsson A, Shah JP. Continuous negative extrathoracic pressure or continuous positive airway pressure for acute hypoxemic respiratory failure in children. *Cochrane Database Syst Rev* 2003;(3):CD003699.

Systemic corticosteroids *v* placebo or no corticosteroid treatment in infants or young children with acute viral bronchiolitis*

Outcomes	Number of trials (n)	Weighted mean difference (95% CI)
Hospital length of stay (d)†	7 (472)	−0.38 (−0.81 to 0.05)
		Odds ratio (CI)
Hospital admission rate‡	3 (156)	1.05 (0.23 to 4.87)
		Standardised mean difference (CI)
Day 3 clinical score	8 (309)	−0.20 (−0.73 to 0.32)

*CI defined in glossary; a random effects model was used. All differences are not significant.
†Patients were inpatients on paediatric hospital wards.
‡Patients were recruited from the emergency department.

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