
CLIN-IQ PROJECT

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Question: Do systemic corticosteroids improve acute outcomes (length of hospitalization, hospital readmission rate, clinical symptoms) in infants with RSV bronchiolitis?

Answer: No

Date the answer was determined: December 2005

Level of Evidence: Systematic Review = A, Meta-analysis=A

A summary of the issues

Acute viral bronchiolitis is a common, high-morbidity condition, the most frequent lower respiratory tract condition in infancy, affecting approximately 10% of infants in the first year of life. Clinically identical disease can occur with infections from respiratory syncytial virus, parainfluenza virus, adenovirus, rhinovirus, influenza, or mycoplasma pneumonia. Diagnosis of acute viral bronchiolitis is often based on clinical presentation. The pathological features in bronchiolitis are airway edema, necrosis, and mucous plugging.

Theoretically, anti-inflammatory drugs should help as, particularly in the early phase of bronchiolitis, inflammation of the bronchioles is the main pathological feature.

Systemic glucocorticoids have been widely prescribed but the actual benefit of this intervention requires clarification. In any intervention the benefits must outweigh the risks. Reported side effects from short-term administration of corticosteroids include: hypertension, hyperglycemia, hyponatremia, hypokalemic alkalosis, gastrointestinal irritation and/or ulceration, and avascular necrosis in bones.

A summary of the evidence

A Cochran Review of 13 clinical trials by Patel et al (a) found no evidence of improvement in length of stay, clinical score, or hospital readmission rates in infants and young children diagnosed with acute viral bronchiolitis treated with systemic glucocorticoids as compared to placebo plus usual care.¹ A total of 1,198 children aged 0 to 30 months were studied. The RCT trials chosen in

this review included trials in which participants were diagnosed clinically with acute viral bronchiolitis and treated with systemic (oral, intramuscular or intravenous) corticosteroids equivalent to .5-10mg/kg prednisone. Usual care including oxygen, supportive fluids, and inhaled bronchodilators were used similarly in all groups. The overall decrease in length of stay in treated children was 0.38 days (95% CI -0.81 to 0.32), indicating no significant difference between treatment groups. A standard mean difference in clinical score of -0.20 (95% CI -0.73-0.32) also indicated no significant difference between treatment groups.

A second systematic review published by King et al, analyzed the results of 7 studies, and found no conclusive evidence to support routine use of systemic corticosteroid use in infants with bronchiolitis.² They reported conflicting benefit on length of hospital stay and clinical score. Most studies were small, none of which included a power analysis. Comparisons among these studies were limited by the variety of drugs used, dosages, durations of treatment, co-interventions, and populations studied.

Search terms: corticosteroid, RSV bronchiolitis

Inclusion/Exclusion criteria: Only studies that tested systemic glucocorticoids vs. placebo in acute viral bronchiolitis were reviewed. Only English articles reviewed.

List of Articles reviewed:

1. Patel H, Platt R, et al. Glucocorticoids for acute viral bronchiolitis in infants and young children. *Cochrane Database of Systematic Reviews*. 4, 2005.
2. King VJ, Vishwanathan M, et al. Pharmacologic treatment of bronchiolitis in infants and children: a systematic review. *Arch Pediatr Adolesc Med*, 2004; 158(2); 127-37.

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