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Oral Salbutamol is Not Effective in Infants with Bronchiolitis

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Acute viral bronchiolitis remains one of the greatest clinical challenges in pediatric care. Clinicians across the globe are annually inundated, in epidemic proportions, with young infants in varying degrees of respiratory distress. In many countries, bronchiolitis is the leading cause of hospitalization in children under one year of age. No wonder then, that the search for effective interventions has been intensively pursued.

And because these infants usually present with tachypnea, cough and wheeze, they resemble older children with asthma. Thus the use of traditional asthma therapies, such as salbutamol and other beta-agonists, are commonly used in infants with bronchiolitis(1). Nonetheless, meta-analyses demonstrate no consistent benefits from pure beta-agonists(2,3). Mixed alpha and beta-agonists, such as nebulized epinephrine show no benefit in hospitalized patients(4,5) and only short-term benefit in ambulatory patients(6).

In a well-designed, double-blind randomized controlled study being published in this issue of

Indian Pediatrics(7), Gupta and colleagues examine the effectiveness of oral salbutamol in infants with mild to moderate respiratory disease secondary to acute viral bronchiolitis. Such infants comprise the vast majority of those affected; while most other studies focus on the minority of infants with moderate to severe respiratory distress, hospitalized infants represent only 2-5% of the affected population. With adequate power to show a two day difference in resolution of illness, Gupta and colleagues demonstrated no clinically relevant difference between infants treated with 0.1 mg/kg of salbutamol three times daily compared to oral placebo.

These findings are consistent with the only other trial of oral salbutamol, conducted by our research team, with similar clinical outcomes(8). Gupta and colleagues appropriately recommend discontinuation of oral salbutamol in this patient population.

Supportive care, including hydration, supplemental oxygen and nasal suctioning remains the

most effective intervention for most infants with bronchiolitis. Given the predictable resolution of illness in most infants, perhaps our efforts are best focused on parental reassurance and education on the signs of dehydration and increased respiratory distress in their infants.

For those infants with moderate to severe respiratory distress, the search for effective therapy continues. Inhaled helium, furosemide and nebulized hypertonic saline have all been studied. Recently the debate on oral corticosteroids has been re-ignited with the completion of two large randomized controlled trials. The PECARN research network recently published their trial examining the effectiveness of 1 mg/kg of dexamethasone (single dose) compared to placebo in infants with first time wheezing, and showed no difference in hospital admission rate or in respiratory distress scores at 4 hours(9). In Canada, a definitive multi-centre factorial trial examining the use of nebulized epinephrine (two doses) and oral dexamethasone (first dose 1 mg/kg and then 0.6 mg/kg for 5 days) has just been completed, with published results expected shortly (personal communication: Dr. Amy Plint, Children's Hospital of Eastern Ontario, University of Ottawa).

As with all things in medicine, we must balance the harms of intervention with intended benefits. Although oral salbutamol was generally well tolerated in the infants studied by our research team(8) and that of Gupta, *et al.*(7), no benefits were demonstrated. This practice should be discontinued, starting with modification of recommended therapies in our standard pediatric textbooks and drug use guidelines.

And for infants with more severe disease, the search for effective therapies continues....

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