

Principal findings of systematic reviews of acute asthma treatment in childhood

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Cita

Castro-Rodríguez, J.A.; Rodrigo, G.J; Rodríguez-Martínez, C.E. (2015). Principal findings of systematic reviews of acute asthma treatment in childhood. In *Journal of Asthma*, 52(10), 1038-1045. <https://doi.org/10.3109/02770903.2015.1033725>

Abstract

Objective: The objective of this study is to summarize the principal findings in the literature about acute asthma management in children.

Methods: Systematic reviews of randomized clinical trials (SRCTs) with or without meta-analysis in children (1–18 years) admitted to the emergency department (ED) were retrieved using five data bases. Methodological quality was determined using the AMSTAR tool.

Results: One hundred and three studies were retrieved. Among those, 28 SRCTs were included: seven SRCTs related to short-acting beta2-agonists (SABA), three to ipratropium bromide (IB), eight to corticosteroids, one to racemic adrenaline, one to leukotriene receptor antagonists (LTRA), four to magnesium sulfate, one to intravenous (IV) SABA, one to IV aminophylline, one to IV ketamine, and one to antibiotics. It was determined that administering SABA by MDI-VHC is superior to using a nebulizer, because it decreases the hospital admission rate, improves the clinical score, results in a shorter time in the ED, and causes fewer adverse effects. Levalbuterol and albuterol were similar. In patients with moderate to severe exacerbations, IB+SABA was superior to SABA, decreasing hospital admission and improving the clinical score. SABA heliox administered by nebulizer decreased exacerbation severity compared to oxygen. Inhaled corticosteroids (ICS), especially administered by nebulizer, showed results similar to oral corticosteroids (OCS) with respect to reducing hospital admission, unscheduled visits, and the requirement of additional systemic corticosteroids. ICS or OCS following ED discharge was similar with regard to relapse. Compared with a placebo, IV magnesium reduced hospital admission and improved lung function.

Conclusions: SRCTs are useful for guiding decisions in acute asthma treatment.