

Metered-dose inhalers versus nebulization for the delivery of albuterol for acute exacerbations of wheezing or asthma in children: A systematic review with meta-analysis.
Payares-Salamanca L, Contreras-Arrieta S, Florez-García V et al. Pediatr Pulmonol. 2020 Dec;55(12):3268-3278. doi: 10.1002/ppul.25077.

Objectives: The benefits of metered-dose inhalers with a spacer (MDI+S) have increasingly been recognized as an alternative method of albuterol administration for treating pediatric asthma exacerbations. The aim of this systematic review was to compare the response to albuterol delivered through nebulization (NEB) with albuterol delivered through MDI+S in pediatric patients with asthma exacerbations.

Methods: We conducted an electronic search in MEDLINE/PubMed, EMBASE, Ovid, and ClinicalTrials. To be included in the review, a study had to be a randomized clinical trial comparing albuterol delivered via NEB versus MDI+S; and had to report the rate of hospital admission (primary outcome), or any of the following secondary outcomes: oxygen arterial saturation, heart rate (HR), respiratory rate (RR), the pulmonary index score (PIS), adverse effects, and need for additional treatment

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet



MDI VS NEBULISER – IN ACUTE WHEEZE

Results: Fifteen studies (n = 2057) met inclusion criteria. No significant differences were found between the two albuterol delivery methods in terms of hospital admission (relative risk, 0.89; 95% confidence interval [CI], 0.55-1.46; I² = 32%; p = .65). There was a significant reduction in the PIS score (mean difference [MD], -0.63; 95% CI, -0.91 to -0.35; I² = 0%; p < .00001), and a significantly smaller increase in HR (better; MD -6.47; 95% CI, -11.69 to -1.25; I² = 0%; p = .02) when albuterol was delivered through MDI+S than when it was delivered through NEB

Conclusion: This review, an update of a previously-published meta analysis, showed a significant reduction in the PIS and a significantly smaller increase in HR when albuterol was delivered through MDI+S than when it was delivered through NEB.

Key messages: MDI with Spacer is safe for acute exacerbations of asthma

EXPERT COMMENT



“Safety and Efficacy of MDI with spacer (for ALBUTEROL) must be re-emphasised in acute asthma management. Holds more true in the current pandemic & otherwise also”

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Reference

Payares-Salamanca L, Contreras-Arrieta S, Florez-García V, Barrios-Sanjuanelo A et al. Metered-dose inhalers versus nebulization for the delivery of albuterol for acute exacerbations of wheezing or asthma in children: A systematic review with meta analysis. Pediatr Pulmonol. 2020 Dec;55(12):3268-3278. doi: 10.1002/ppul.25077. Epub 2020 Sep 25.