STUDY POPULATION. The study included children, 2 to 18 years old, who presented to a tertiary-care children’s hospital ED for an acute asthma exacerbation.

METHODS. This was a single-blinded, randomized study during which subjects were randomly assigned to receive either PEP or observation after first-line treatment with nebulized ipratropium bromide, albuterol, and systemic steroids. Within 15 minutes of first-line treatment completion, the intervention group received PEP therapy. A pulmonary asthma score was assessed for all subjects at randomization and 15 minutes after intervention or observation.

RESULTS. Fifty-two subjects were enrolled, with 26 subjects in each group. There were no significant differences in regard to age, sex, race, asthma severity, or ED course characteristics. No significant difference was found between groups in regard to change in pulmonary asthma score or need for additional second-line therapies, ED length of stay, admission rates, or ED return within 72 hours.

CONCLUSIONS. PEP therapy was safe and feasible to perform, but there was no significant difference compared with children in the control group in all outcomes measured, suggesting that PEP does not confer benefit in moderate-to-severe asthma exacerbations.

REVIEWER COMMENTS. Both PEP and noninvasive positive-pressure ventilation have been investigated as alternative second-line therapies for asthma exacerbations. Neither treatment has been shown to confer significant clinical benefit in controlled studies. Additional work is needed to identify effective therapies for asthma exacerbations that do not respond to initial management.

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Does Nebulized Hypertonic Saline Shorten Hospitalization in Young Children With Acute Viral Wheezing?

PURPOSE OF THE STUDY. To determine the efficacy of nebulized hypertonic saline (HS) in children hospitalized for acute viral wheezing.

STUDY POPULATION. This study included Thai children aged 6 months to 5 years who were admitted to a pediatric inpatient ward for an episode of acute viral wheezing during a 6-month period. Children could have a history of previous wheeze but were excluded if there was a history of congenital cardiac disease, chronic lung disease, physician-diagnosed asthma, or current steroid use.

METHODS. In this double-blinded, randomized controlled trial, children received 2.5 mg of nebulized salbutamol in 3% HS (n = 22) or in normal saline (NS) (n = 25) every 4 to 6 hours as needed until discharge. Clinical history, laboratory data including a viral antigen nasopharyngeal swab, chest radiograph, and asthma clinical severity scores were assessed. Discharge was defined as an asthma clinical severity score <6 twice consecutively.

RESULTS. Samples for viral antigen were taken from 40 children (85.1%) with 30% positive for a respiratory virus. Patients treated with HS had a shorter median length of stay than patients treated with NS (48 hours versus 72 hours, respectively, P = .021), particularly in the 6- to 15-month-old group. The median number of hours of oxygen therapy was also significantly shorter in the HS group (36 hours) than the NS group (72 hours) (P = .025). Patients in the HS group had statistically significant improved asthma clinical severity scores, decreased respiratory rate, and improved oxygen saturation at 12 hours. Although the HS group received fewer doses than the NS group, the difference was not significant. There were no increased adverse events to HS in comparison with NS.

CONCLUSIONS. HS is an effective treatment of patients <5 years of age who are hospitalized with acute viral wheeze.

REVIEWER COMMENTS. Nebulized HS has been shown to improve airway clearance and thus have a clinical benefit in conditions like asthma and cystic fibrosis, but clinical trial results of HS for bronchiolitis are conflicting. In this study, the authors suggest that HS may benefit hospitalized children, particularly younger children, with viral-induced wheeze. However, 1 of the study limitations is that children with bronchiolitis and asthma were also likely included in the analyses given the age range. It remains to be seen whether HS actually provides clinically significant benefits for viral-induced wheezing, bronchiolitis, and/or asthma because further studies in more homogeneous subgroups with larger sample sizes are needed.

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Does Asthma Affect School Performance in Adolescents? Results From the Swedish Population–Based Birth Cohort BAMSE

PURPOSE OF THE STUDY. To examine whether asthma affects school performance in adolescents.
Does Nebulized Hypertonic Saline Shorten Hospitalization in Young Children With Acute Viral Wheezing?
Rebecca Koransky and Joyce E. Yu
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