Breath-actuated inhalers: A new option for the management of acute asthma exacerbations in children (Respicon 2023)

Sowmya Arudi Nagarajan*, Vaishali Naik, Meena Lopez, Jaideep Gogtay
Department of Paediatric Allergy & Immunology*, Sanjeevani Specialist Clinic, Bengaluru; and Medical Affairs, Cipla Ltd

Background: Metered dose inhalers (MDIs) with spacers or nebulizers have been the standard-of-care for paediatric asthma exacerbations. Breath-actuated inhalers (BAIs) are easy to use and overcome co-ordination issues and are increasingly being used in clinical practice. However, data on their role in the management of acute exacerbations in children is limited.

Aims and Objectives: To evaluate the efficacy and usability of levosalbutamol delivered through BAI in management of acute exacerbations of asthma in children.

Methods and Material: This open-label study recruited children 7-15 years of age presenting to the outpatient department with mild-to-moderate asthma exacerbations (GINA 2022 classification). Patients were given 4 puffs of levo-salbutamol 50 mcg delivered through BAI, every 20 minutes, for 1hour. Response was measured using pulmonary score (PS) based on respiratory rate, wheezing & accessory muscle usage. Device usability questionnaire was administered at end of study.

Results: A total of 57 children with mild (86%) or moderate (12.3%) asthma exacerbations were enrolled. Mean age was 10.2±2.5 yrs; 60% were males. 52 (91.2%) children responded & improved clinically at 60 mins, and only 5 (8.8%) patients required other interventions (viz. O2, nebulization, MDI+spacer). Significant decrease ($p<0.001$) in average PS was observed, from 5.12 units at baseline to 4.32, 2.54 and 1.67 units at 20, 40 & 60 mins, respectively. All participants reported BAI as child-friendly, 91.2% were able to trigger it during an exacerbation and 84% found it easy to breathe through the device.

Conclusion: Breath Actuated Inhaler was found to be useful for delivering reliever medication during acute exacerbations in children resulting in significant improvement in pulmonary score and was also reported to be child-friendly and easy to use.