

Editorial Comment on: „Short-acting β 2 -agonist use and asthma exacerbations in Swedish children: A SABINA Junior study.”

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Asthma is one of the most common chronic lung diseases with major public health consequences for both children and adults, including high morbidity and even mortality (1). For years, standard asthma treatment for mild asthma has been as needed short acting beta agonist (SABA). Global Initiative for Asthma (GINA) guidelines have questioned this approach suggesting that the use of SABAs should always be accompanied by inhaled corticosteroids (ICSs) (2). Recently, Papi et al. have shown that in adolescents and adults with uncontrolled moderate-to-severe asthma receiving inhaled glucocorticoid-containing maintenance therapies, the risk of severe asthma exacerbation was significantly lower with as-needed use of a fixed-dose combination of albuterol and budesonide than with as-needed use of albuterol alone (3). In children, on the other hand, even though many years ago Martinez et al. have shown that inhaled corticosteroids as rescue medication with albuterol might be an effective step-down strategy for children aged 5-18 years with well controlled mild asthma, SABA has remained to be the only reliever option recommended for those under 6 years of age (4).

The SABA use IN Asthma (SABINA) program in adults and adolescents with asthma reported that SABA overuse ([?]3 canisters/year) is prevalent in Sweden and is associated with poor asthma-related outcomes (5). Melen et al and the SABINA Junior investigators have attempted to investigate the same question in the paediatric population (6). This retrospective cohort study conducted in Sweden, has included patients with physician-diagnosed asthma (aged 0-17 years) in secondary care. Patients have been categorized by the number of SABA canisters collected (dichotomized as 0-2 vs [?]3, based on evidence from studies in adults and adolescents) from pharmacies at baseline and followed up over 12 months (5,7). During the baseline year, SABA overuse ([?]3 canisters) has been registered for the majority of the study population, particularly for those aged 0-5 years. A strong correlation between SABA overuse and increased risk of exacerbation episodes has been observed. This result confirms what has been already seen among adult patients, that is strongly

connected to the inflammatory nature of asthma disease. SABAs can resolve the immediate bronchospasm but have no anti-inflammatory actions and no effect on the late phase of inflammation. Furthermore, chronic and long-term use of SABAs seems also to contribute to a decreased response to SABA therapy as a reliever (8,9). SABINA investigators have also conducted a post-hoc analysis, stratifying study population based on the presence of atopic comorbidity. Interestingly, increased SABA use has been associated with a higher exacerbation risk also in nonatopic patients with asthma. This may be due to the lack of response to ICSs that is a distinctive aspect of non-atopic population who may in turn resort to the use SABA reliever treatment.

There are still several questions that remain unanswered in children mainly due to the difficulties in obtaining data in this specific population. First, recruitment of paediatric patients especially those <6 years old into randomized controlled trials (RCTs) can be a challenge due to ethical issues. In addition, diagnosis of asthma in this age group is often problematic. Despite all the limits of a retrospective study, SABINA study provides extremely useful data in a population where there are hardly any solid data. These results emphasize the need for a better understanding of childhood asthma endotypes and the response to different drugs and disease behaviour over time. Avoiding asthma exacerbations and consequent disease progression should be the principal aim of clinical management in children. This may only be possible by linking the underlying pathophysiology with the clinical response to anti-asthma treatment.

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