



Hypothalamic-Pituitary-Adrenal Axis Suppression with Inhaled Corticosteroids—Time to Close the Debate?

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Inhaled corticosteroids are one of the most used drugs in pediatric practice and the cornerstone of asthma management [1]. While the benefits of inhaled corticosteroids in managing pediatric asthma cannot be over-emphasized, concern regarding its adverse effects impedes its wider use [2]. Negative impacts on growth and bone health and suppression of the Hypothalamic-Pituitary-Adrenal (HPA) axis remain the leading causes of concern with prolonged inhaled corticosteroid treatment [3]. There is a lack of information about the impact of inhaled corticosteroids on adrenal functions in Indian children and adolescents with bronchial asthma.

In this issue of the journal, Hema et al. report their observations on the effect of long-term inhaled corticosteroids on the Hypothalamic-Pituitary-Adrenal axis [4]. The authors identified a low prevalence of adrenocortical suppression [4 (5.1%)] using the long-acting ACTH stimulation test. The cortisol levels were not affected by the duration or dose of inhaled steroids or the level of disease control. This, along with the lack of clinical features of adrenal insufficiency in any subject, suggests a low risk of adrenocortical suppression in children with asthma treated with the currently used inhaled corticosteroid regimen.

The findings of the study are in contradistinction to previous studies that have shown a high prevalence of adrenocortical suppression with inhaled corticosteroid use [5, 6]. This may be related to a more significant proportion of children in the study being on low-dose inhaled corticosteroids (only 2.6% on doses above 400 mcg/d). A dose-dependent effect of inhaled corticosteroids on adrenocortical function with suppressed adrenocortical function in children on moderate doses has been observed [7]. The exclusion of subjects with

recent intake of oral corticosteroids also explains the low prevalence of adrenocortical suppression. Short-term systemic corticosteroids induce reversible HPA suppression that improves despite continued use of inhaled corticosteroids [8]. Preserved growth parameters in children in study indicate the long-term safety of inhaled corticosteroids. Information about bone health would have further addressed safety concerns about using the agent.

The study suggests a low risk of HPA suppression with long-term inhaled corticosteroids. More extensive studies with a more significant proportion of children on high-dose steroids and emphasis on bone health are required further to address the endocrine adverse effects of inhaled corticosteroids.

Declarations

Conflict of Interest None.

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