



Atopic Sensitization to House Dust Mites in Preschool Children with Recurrent Wheeze – Is it the Main Culprit?

Kalyanprabhakaran B.¹ · Prawin Kumar¹

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Wheezing in preschool children (1–5 y) is a common disorder. In Tucson Children’s Respiratory Study (USA), about 50% of children developed at least one wheezing episode by the age of 6 y. In a recent meta-analysis, wheezing and recurrent wheezing (RW) were observed in 29.6% and 16.8% of preschool children, respectively. Preschool wheeze is a heterogeneous disorder; several environmental and genetic factors are important in its pathogenesis [1]. There is a lack of studies on risk factors for RW, including House dust mite (HDM) sensitization in preschool children from India.

In this issue of the journal, Mohan et al. reported HDM sensitization by skin prick test (SPT) in preschool children and compared it between RW and non-wheezers (NRW) [2]. They noted a statistically significant difference in SPT positivity in RW than NRW children [76% vs. 20.6%; $p < 0.001$, aOR = 12.27]. It was positive in all children with allergic rhinitis. The authors concluded that early and high HDM sensitization increases the odds of RW. It is indeed an impressive study. The major strengths of this study were adequate sample size, the use of standardized allergens extracts, and the inclusion of children with NRW as a comparator. However, there are a few limitations to this study.

Early HDM sensitization has been strongly associated with developing atopic diseases in children. The process of sensitization may start in utero [3]. The Prediction of Allergies in Taiwanese Children (PATCH) birth cohort study showed that HDM sensitization in asymptomatic toddlers was associated with a higher risk of atopic diseases and abnormal lung function at 7 y [4]. Moreover, despite its ubiquitous distribution, the sensitization rate varies in different geographical regions. In India, the reported prevalence of HDM sensitization in children ranges from 7.8% to 87.8%. Since preschool wheeze is multifactorial, HDM sensitization

alone cannot be attributed to RW. The index study was cross-sectional, and the mean age of children was 34.52 ± 20.50 mo. Hence, it would be difficult to say that children in this study have early sensitization. Furthermore, it would be informative if the correlation between HDM sensitization and symptom control were done in the index study, as it is associated with poor symptom control in atopic diseases.

The authors used SPT to document HDM sensitization. Though SPT is currently the gold standard, it may cross-react with other species and result in high false positive rates. The recent development of component-resolved diagnosis (CRD) appears promising, based on the recombinant allergen that identifies only individual molecules on the allergens [5].

Studies evaluating the role of intervention in preventing HDM sensitization showed inconsistent results [5]. In the Prevention and Incidence of Asthma and Mite Allergy (PIAMA) birth cohort study, early intervention with a mite-impermeable mattress did not reduce the risk of HDM sensitization and atopic disease by 8 y of age [3].

In conclusion, this study will aid in understanding the role of allergic sensitization in RW in preschool children from India. However, there is a need for prospective birth cohort studies from India to identify all the possible risk factors correctly and to explore the effect of early intervention on clinical outcomes.

Declarations

Conflict of Interest None.

References

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✉ Prawin Kumar
drprawin484@gmail.com

¹ Department of Pediatrics, All India Institute of Medical Sciences, Jodhpur, Rajasthan 342005, India

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