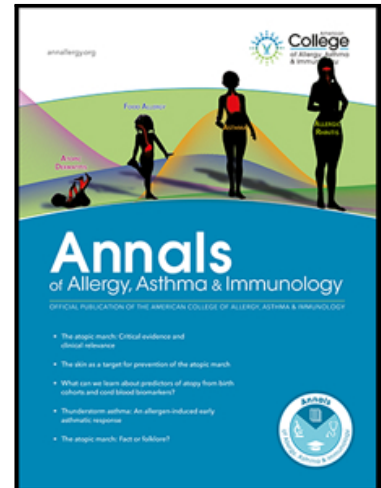


Accepted Manuscript

Small airway function in children with mild-to-moderate asthmatic symptoms and healthy controls

Hanna Knihtilä MD , Anne Kotaniemi-Syrjänen MD ,
Anna S. Pelkonen MD , Mika J. Mäkelä MD ,
L Pekka Malmberg MD

PII: S1081-1206(18)30612-4
DOI: [10.1016/j.anai.2018.07.026](https://doi.org/10.1016/j.anai.2018.07.026)
Reference: ANAI 2639



To appear in: *Annals of Allergy, Asthma Immunology*

Received date: 26 May 2018
Revised date: 16 July 2018
Accepted date: 22 July 2018

Please cite this article as: Hanna Knihtilä MD , Anne Kotaniemi-Syrjänen MD , Anna S. Pelkonen MD , Mika J. Mäkelä MD , L Pekka Malmberg MD , Small airway function in children with mild-to-moderate asthmatic symptoms and healthy controls, *Annals of Allergy, Asthma Immunology* (2018), doi: [10.1016/j.anai.2018.07.026](https://doi.org/10.1016/j.anai.2018.07.026)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Small airway function in children with mild-to-moderate asthmatic symptoms and healthy controls

Hanna Knihtilä, MD;^a Anne Kotaniemi-Syrjänen, MD;^a Anna S Pelkonen, MD;^a Mika J Mäkelä, MD;^a L Pekka Malmberg, MD^a

^aPediatric Unit of the Department of Allergy, Skin and Allergy Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

Correspondence: Hanna Knihtilä, HUH Skin and Allergy Hospital, P.O. Box 160, 00029 HUS, Finland, e-mail: hanna.knihtila@helsinki.fi

Conflicts of Interest: None.

Funding: The study was funded by Emil Aaltonen Foundation, Foundation for Pediatric Research, Ida Montin's Foundation, The Finnish Allergy Research Foundation, The Finnish Medical Foundation, The Research Foundation of the Pulmonary Diseases, and Väinö and Laina Kivi's Foundation.

Abstract

Background: Clinical significance of small airway obstruction in mild pediatric asthma is unclear. Objective: To evaluate small airway properties in children with mild-to-moderate asthmatic symptoms, and the association of small airway function with asthma control and exercise-induced bronchoconstriction (EIB). Methods: Children (5-10 years) with either recurrent wheezing (n=42) or persistent troublesome cough (n=16), and healthy controls (n=19) performed impulse oscillometry (IOS), spirometry, and multiple-breath nitrogen washout (MBNW) test. Exhaled nitric oxide (NO) was measured at multiple flow rates to determine alveolar NO concentration (CALV). Asthma control was evaluated with the Childhood Asthma Control Test (C-ACT), short-acting beta2-agonist (SABA) use within the past month, and asthma exacerbations within the past year. Results: IOS, spirometry, and exhaled NO indices which are related to small airway function differed between children with recurrent wheezing and healthy controls, whereas only forced expiratory flow at 25-75% of the forced vital capacity (FEF₂₅₋₇₅) was associated with persistent cough. MBNW indices showed no difference between the groups. Among symptomatic children, conducting airway ventilation inhomogeneity (Scond) and CALV were associated with asthma exacerbations (p=0.028 and p=0.002, respectively), and lung clearance index (LCI) and CALV

Download English Version:

<https://daneshyari.com/en/article/11014688>

Download Persian Version:

<https://daneshyari.com/article/11014688>

[Daneshyari.com](https://daneshyari.com)