



POSTER PRESENTATION

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# Wheeze in the absence of asthma at age 8-10 is not associated with atopy in Manitoba children

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## Background

Atopy in children with recurrent wheeze is the best predictor for persistent asthma. A high prevalence of atopy was found in children with recurrent wheeze who were at high risk of developing persistent asthma based on the Asthma Predictive Index (API)[1]. A newly modified API now includes allergic sensitization to aeroallergens and to foods as criteria for the risk assessment of persistent asthma in children with recurrent wheeze. However, associations between wheeze and atopy in the absence of asthma have not been extensively examined. Since atopy is considered a risk marker for asthma in children with recurrent wheeze, we predicted that it would not be associated with wheeze when asthma was absent.

## Materials and methods

Children in the 1995 Manitoba Birth Cohort (SAGE) nested case-control study were assessed at age 8-10 years by a pediatric allergist both clinically and by questionnaire. Skin-prick tests to common allergens were performed to determine the presence of atopy. Children underwent methacholine challenge for airway hyperresponsiveness. Parent-reported history of wheeze ever was ascertained using the question "Has your child ever had wheezing or whistling in the chest at any time in the past?" The association between atopy and recurrent wheeze was determined using the odds ratio (OR) and 95% confidence interval (CI).

## Results

723 (404 [55.9%] boys) children were involved in this study (mean age 9.08 ± 0.53). 246 (34.1% [149 (36.9%) boys]) had pediatric allergist-diagnosed asthma. 236/714

(33.1%) children assessed had current wheeze based on allergist notes and 420 (58.4%) had parent-reported wheeze ever; these were not mutually exclusive. There was a significant association between atopy and parent-reported wheeze ever (OR 2.16; 95% CI 1.59-2.94), physician-noted wheeze with a cold (OR 2.23; 95% CI 1.65-3.00) and without a cold (OR 1.82; 95% CI 1.33-2.50). Physician-noted wheeze without a cold was more strongly associated with atopy in girls (OR 2.41; 95% CI 1.48-3.93) compared to boys (OR 1.46; 95% CI 0.96-2.22). In the absence of asthma, the association between atopy and parent-reported wheeze ever, physician-noted wheeze with a cold and without a cold was lost. Further stratification by PC<sub>20</sub> category did not yield significant associations.

## Conclusions

Atopy is an important diagnostic marker in the pediatric clinical assessment of wheeze. As predicted, wheeze not used in the diagnosis of asthma was not associated with atopy. These results support the use of a modified API that includes allergic sensitization to aeroallergens and foods for its positive predictive value.

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