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Abstract Title

Associations between aeroallergen sensitization and allergic outcomes among Canadian children in the CHILd Cohort

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Background

Aeroallergen sensitization is associated with childhood asthma and rhinitis; however, timing of the development of sensitization and allergic conditions is not the same for all children. This study evaluates the timing of aeroallergen sensitization versus asthma and rhinitis development.

Objective

This study evaluates the timing of aeroallergen sensitization versus asthma and rhinitis development.

Methods

The CHILd Cohort has followed children from before birth to age 8 years and collected questionnaire data regarding asthma and rhinitis symptoms, clinician visits for diagnoses of asthma including persistent or ongoing symptoms, and rhinitis, and aeroallergen sensitization. Aeroallergen sensitization was defined as a skin prick testing (SPT) wheal diameter ≥ 2 mm larger than the glycerin control and classified into any (≥ 1 aeroallergen), perennial (≥ 1 of cat, dog, house dust mites, or cockroach), and seasonal (≥ 1 of trees, grasses, weeds, or molds). Cross-sectional associations between sensitization and clinical asthma or rhinitis were examined using logistic regression.

Results

Among the 2642 children (47% female, 53% male), clinical diagnoses and SPT at ages 5 years and 8 years, respectively, were: asthma (15%, 12%), rhinitis (16%, 22%), and sensitization to any (16%, 38%), perennial (11%, 27%), and seasonal (9%, 24%) aeroallergens.

At 5 years, asthma was associated with any (odds ratio (OR) 1.88, 95% confidence interval (CI) 1.46-2.42), and more strongly with perennial (OR 2.28, 95% CI 1.73-3.01) sensitization. At 8 years, the associations persisted with any (OR at 2.43, 95% CI 1.75-3.37) and perennial (OR at 2.69, 95% CI 1.93-3.74) sensitization. Rhinitis was most strongly associated with seasonal sensitization at 5 (OR 3.83, 95% CI 2.86-5.12) and 8 (OR 4.56, 95% CI 3.57-5.82) years. Asthma and rhinitis associations at 8 years were stronger with current sensitization at 8 years than preceding sensitization at 5 years.

Conclusion

Rhinitis and aeroallergen sensitization increased between ages 5 and 8 years. Asthma showed stronger association with perennial sensitization and rhinitis with seasonal sensitization.