Relationship of Rhinitis and Respiratory Allergy and Asthma Phenotypes in an Urban Birth Cohort

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Introduction

- Epidemiological studies have commonly demonstrated a link between rhinitis and asthma.
- Both allergic and non-allergic rhinitis are associated with the development of asthma.
- These findings support the concept that rhinitis and asthma may represent one disease in two different parts of the respiratory system (the unified airway).

Objective

- Our objective was to test for associations between chronic nasal symptoms and hay fever symptoms and respiratory phenotypes through age 10 years in urban children.

Methods

- Chronic nasal symptoms apart from colds (starting at age 1) and hay fever symptoms, representing seasonal rhinitis (starting at age 4 years) were assessed quarterly in The Urban Environment and Childhood Asthma study, a high-risk urban birth cohort (n = 442).
- Longitudinal patterns of wheeze, allergic sensitization and lung function through age ten were used to identify six respiratory phenotypes.

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Results

**Figure 1.** Proportion of chronic rhinitis symptoms in children grouped according to 10-year respiratory allergy and asthma phenotypes.

**Figure 2.** Proportion of hay fever symptoms in children grouped according to 10-year respiratory allergy and asthma phenotypes.

Conclusions

Among high risk, urban children:

- Chronic rhinitis is most prevalent in children among the three persistent wheezing respiratory phenotypes with or without atopy.
- Hay fever is more common among children with the two wheezing phenotypes with high atopy (but not in LW-HA or MW-LA).
- These findings suggest that chronic and seasonal rhinitis symptoms are more prominent in wheezing respiratory phenotypes and may represent similar disease entities, supporting the unified airway hypothesis.