

Higher environmental composite quality index score and risk of asthma and allergy in Northeast China

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Abstract

BACKGROUND Although evidence suggests a weak association of single environmental risk factors with asthma and allergy risk in children, the influence of a combination of multiple environmental pollutants and household air pollution in the relationship of asthma and allergy remains unclear. We aimed to assess the association of environmental composite quality index scores with asthma and allergy. **METHOD** Environmental composite quality indices were collected using the questionnaire that contains asthma and allergy, Chinese residential living habits, and outdoor environment items. Multivariable odds ratios (ORs) and 95% confidence intervals (CIs) were estimated using the binary logistic regression model after adjusting the most known asthma or allergy risk factors. **RESULTS** In this cross-sectional study, a total of 1636 girls and 1446 boys were included in the final analyses. Higher environmental quality index score was correlated with higher risk of asthma, eczema, and rhinitis. Comparing the top ([?]5) to bottom group (0-2), the multivariable ORs were 2.47 (95% CI, 1.41-4.33, P trend = 0.004) for asthma, 1.51 for eczema (95% CI, 1.18-1.93; P trend = 0.002) and 1.83 for rhinitis (95% CI, 1.12-3.00; P trend = 0.017). Similar findings were observed in the stratified analyses. **CONCLUSION** The study showed that there is a harmful association between environmental quality and asthma with allergic diseases in children living in northeast China, and further research was needed to confirm the findings in other areas and clarify the specific mechanism.

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