Acute effects of air pollution on asthma hospitalization in Shanghai, China

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Abstract:
Air pollution has been accepted as an important contributor to asthma development and exacerbation. However, the evidence is limited in China. In this study, we investigated the acute effect of air pollution on asthma hospitalization in Shanghai, China. We applied over-dispersed generalized additive model adjusted for weather conditions, day of the week, long-term and seasonal trends. An interquartile range increase in the moving average concentrations of PM10, SO2, NO2 and BC on the concurrent day and previous day corresponded to 1.82%, 6.41%, 8.26% and 6.62% increase of asthmatic hospitalization, respectively. The effects of SO2 and NO2 were robust after adjustment for PM10. The associations appeared to be more evident in the cool season than in the warm season. Our results contribute to the limited data in the scientific literature on acute effects of air pollution on asthma in high exposure settings, which are typical in developing countries.

Resource Description

Exposure: Air Pollution, Meteorological Factor, Temperature
   Air Pollution: Particulate Matter, Other Air Pollution, Specify
      Air Pollution (other): NO2; SO2; black carbon
   Temperature: Variability

Geographic Feature: Urban
Geographic Location: Non-United States
   Non-United States: Asia

Health Impact: Respiratory Impact
   Respiratory Impact: Asthma

Resource Type: Research Article
Special Topics: Vulnerable Population
   Vulnerable Population: Elderly