Air Pollution and Its Relationship with Cough, Dyspnea and Sinusitis Outcomes in İstanbul

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Abstract:

İstanbul has air pollution problem primarily as a result of emissions from mobile sources, industrial processes, and urbanization and mining activities. Air pollution is a potential risk factor for cough, dyspnea (shortness of breath) and sinusitis in the city. In order to investigate the health effects of air pollutants (PM10, PM2.5, and NO2) for these diseases in İstanbul, a time-series analysis of number of daily hospital admissions and outdoor air pollutants was performed using single-pollutant Poisson generalized linear model (GLM) over a 5-year period (2013–2017) at different time lags (0–9 days). Significant associations between air pollution and hospital admissions for cough, dyspnea, and sinusitis were found. Particulate matter (PM10 and PM2.5) is the most significantly associated pollutant with the respiratory hospital admissions in the city. While PM10 has the highest risk effects for cough and dyspnea, PM2.5 was found to have the highest risk effects for sinusitis. This study demonstrates that air pollution is associated with increased respiratory hospital admissions for some of the most common respiratory system diseases in İstanbul.

Keywords:

Air pollution, Health effects, Cough, Dyspnea, Sinusitis, İstanbul.