Wei Feng, J Earth Sci Clim Change 2019, Volume 10
DOI: 10.4172/2157-7617-C2-059



# Short-term PM10 and emergency department admissions for selective cardiovascular and respiratory diseases in Beijing, China

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This study aimed to examine the overall effects of PM10 on EDAs for cardiovascular and respiratory diseases, including specifically, Cerebrovascular Events (CVE), Ischemic Heart Disease (IHD), arrhythmia, Heart Failure (HF), Upper Respiratory Tract Infection (URTI), Lower Respiratory Tract Infection (LRTI), Chronic Obstructive Pulmonary Disease (COPD) and asthma. We collected daily data for EDAs from the 10 largest hospitals in Beijing, between January 2013 and December 2013 as well as daily measurements of PM10 from 17 stations in Beijing. The generalized-additive model was utilized to evaluate the associations between daily PM10 and cardio-pulmonary disease admissions. In all, there were approximately 56,212 cardiovascular and 92,464 respiratory emergency admissions presented in this study. The largest estimate effects in EDAs of total cardiovascular disease, CVE, IHD, total respiratory diseases, URTI, LRTI and COPD were found for PM10 at day 4 (accumulative) moving average, were 0.29% (95% CI: 0.12%, 0.46%), 0.36% (95% CI: 0.11%, 0.61%), 0.68% (95% CI: 0.25%, 1.10%), 0.34% (95% CI: 0.22%, 0.47%), 0.35% (95% CI: 0.18%, 0.51%), 0.34% (95% CI: 0.14%, 0.55%), 2.75% (95% CI: 1.38%, 4.12%) respectively. In two-pollutant models and full-pollutant model modified confounding factors, the positive correlation remained unchanged. The elderly (age ≥65 years) and male subjects were more susceptible to specific respiratory diseases. PM10's impact on EDAs for HF was found higher during the hot season however, EDAs for COPD peaked during the cold season. The study markedly informed that PM10 pollution was strongly associated with EDAs for cardio-pulmonary diseases.

## Biography

Wei Feng is currently pursuing his MS studies in Epidemiology and Health Statistics at School of Public Health, Capital Medical University, China. His main research direction is the effect of air pollution on cardiovascular and cerebrovascular diseases and the longitudinal study analysis of early risk factors of Alzheimer's disease.

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