

LAG STRUCTURE AND HARVESTING EFFECTS OF AIR POLLUTION ON DAILY OUTPATIENT VISITS

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Background and Aims: To explore whether there is harvesting effect between air pollutants and daily outpatient visits in Zhengzhou.

Methods: We collected air quality data, weather data and daily outpatient visits for the department of respiratory medicine, cardiovascular internal medicine and neurology from December 1, 2008 to November 30, 2009 in Zhengzhou, and then used generalized linear distributed lag models to explore the relationship between air pollutants and daily outpatient visits, after adjusting confounding effects of long-term and seasonal trend, daily temperature and relative humidity.

Results: PM₁₀ and NO₂ were significantly associated with daily outpatient visits for the department of cardiovascular internal medicine. An increase of 10 µg/m³ in PM₁₀ was associated with an ER of 3.55% (95% CI: 0.28%~6.93%) outpatient visits for the department of cardiovascular internal medicine. And an increase of 10 µg/m³ in NO₂ was associated with an ER of 17.72% (95% CI: 2.84%~13.48%) outpatient visits for the department of cardiovascular internal medicine. We didn't observe harvesting effects between PM₁₀ and NO₂, and daily outpatient visits for the department of cardiovascular internal medicine. PM₁₀, SO₂ and NO₂ were not significantly associated with daily outpatient visits for the respiratory internal medicine and neurological internal medicine. Also, SO₂ was not significantly associated with daily outpatient visits for the department of cardiovascular internal medicine.

Conclusion: Daily PM₁₀ and NO₂ concentration were positively associated with daily outpatient visits for the department of cardiovascular internal medicine in Zhengzhou, and there is no harvesting effect.