

EFFECTS OF AMBIENT AIR POLLUTION (PM_{2.5}) ON DAILY MORTALITY IN JAPANESE 20 CITIES

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Many epidemiological studies have shown an association between measurements of ambient air concentrations of fine particulate matter (PM_{2.5}) and non-accidental daily mortality count. However, criticisms of these results have focused on the inconsistency in effect size between cities and on the statistical techniques that are used to estimate the pollution-mortality relationship. The aim of this presentation is to evaluate the effect of PM_{2.5} on daily mortality using the time-series (2001-2004) Japanese 20 cities data. Available data are the records on 24-hours average in each day of PM_{2.5}, temperature, humidity and other pollutant (NO₂, O_x, SO₂), and daily mortality counts. Poisson time-series generalized additive models are used for adjusting long-term trend, temperature and humidity. The measurement errors inherent in estimates of exposure are adjusted by the method of Zeger et al (Environ Health Perspect, 2000). The personal exposure data are the indoor and outdoor levels of pollutants and were measured for one week in four times a year. We will compare our results with those of the 20 largest US cities, and examine the sensitivity of our results to the choice of the smoothing parameters and covariates for adjustments.