**ACUTE EFFECTS OF AIR POLLUTION ON CARDIOVASCULAR DISEASE**

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*Objectives*: To evaluate the associations between air pollution and outpatient visits for cardiovascular disease (CAD) during dust storm events.

*Background*: Long-range transport air pollution models have suggested that air pollutants may be transported with China monsoon across oceans to influence neighbouring countries’s air quality. As air pollution increases morbidity and mortality of CAD, we conducted a study in Taipei City, where the population density is high and the air quality is affected by the basin topography and heavy traffic.

*Methods*: The Taiwan Environmental Protection Administration (EPA) defined a dust storm event as an episode with an average PM10 level above 100ug/m3. We obtained data on air pollutants from the five EPA monitoring stations in Taipei City. Data on daily outpatient visits for CAD (ICD-9 codes 460 to 510) from 2005 to 2010 were obtained from the National Health Insurance Research Database.

*Results*: We identified 229,248 CAD outpatient visits during the study period. Time series models showed that CAD outpatient visits were associated with CO (same day and with a 2-day lag), NO, NO2 (same day and with a 3-day lag) and a weekend effect. In addition, we identified 3,850 CAD cases during dust storm events. We compared 2-days average concentration changes in air pollutants before and during the events and found that O3 and PM10 were higher during the events, but CO, NO, and NO2 decreased during the events. We found that levels of O3 and SO2 were associated with CAD outpatient visits on the same day and with a 2-day lag. We also found that PM10 and PM2.5 levels were associated with CAD outpatient visits on the same day and with 1- and 2-day lags.

*Conclusions*: This study provides evidence supporting the effects of O3, SO2, PM10, and PM2.5 on CAD outpatient visits during dust storm events.