Abstract: P884

Short-term exposure to asian dust is associated with myocardial infarction with nonobstructive coronary arteries

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Background-Asian dust (AD) is considered as one of air pollution that increases risk of acute myocardial infarction (AMI). However, it has not been elucidated whether AD might increase the risk of myocardial infarction with nonobstructive coronary arteries (MINOCA).

Methods-A time-stratified case-crossover design and conditional logistic regression models was used to investigate the association between short-term exposure to AD and admission of AMI during the spring months in a nationwide administrative Diagnostic Procedure Combination (DPC) database, the Japanese Of All cardiac and vascular Diseases (JROAD)-DPC, between April 2012 through March 2016. MINOCA was defined as AMI having angiography without revascularization and coronary atherosclerosis, whereas myocardial infarction with obstructive coronary artery disease (MI-CAD) was AMI with revascularization and/or coronary atherosclerosis. Data for AD events, air pollutants (PM2.5, Ox, NO2, SO2), and meteorological variables were obtained from the nearest monitoring station of the hospital.

Results-During the study period, 3,233 MINOCA and 27,202 MI-CAD patients were identified from 30,435 AMI patients. Although the occurrence of AD events 2 days before the admission was not associated with the admission of AMI and MI-CAD, the AD events was significantly associated with the admission of MINOCA with adjustment for meteorological variables and each air pollutant. In subgroup analysis of MINOCA, patients without low ADL was associated with higher risk of the admission due to AD exposure than those with low ADL, with significant interaction.

Conclusions-AD events might be more likely to trigger onset of MINOCA than MI-CAD.