

[12] Exposure to Ambient Fine Particles and Depressive Symptoms in Alzheimer Disease: CREDOS (Clinical Research Center for Dementia of South Korea) Study

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Background

There is a growing concern that air pollution, especially those particles less than 2.5µm (PM2.5), could increase the risk of mental disorders such as depression, suicide or dementia. However, the relationship between ambient PM2.5 and depressive symptoms in patients with Alzheimer disease (AD) is still undetermined.

Aims

The current study was designed to evaluate the association between ambient PM2.5 exposure and changes in depressive symptoms in participants who had AD.

Methods

This study is based on the Clinical Research for Dementia of South Korea (CREDOS) cohort. The CREDOS study is a hospital-based cohort, composed of patients who had visited 56 participating hospitals between September 2005 and June 2010. Among patients with cognitive disorder, we chose patients with Alzheimer Disease (AD) who had not changed their residence within Seoul (n=273) where we can assess exposure to PM2.5 on daily basis. The Korean version of Geriatric Depression Scale-short form (GDS) was used to measure depressive symptoms. Poisson regression analysis was selected to evaluate PM2.5 effect on depressive symptoms by using generalized estimating equations (GEE).

Results

The mean (±standard deviation) age was 74.35 (±7.59) years and the mean years of education was 8.31 (±5.83) years. 31.87% of participants were male. The mean (standard deviation) scores of CDR-SB, K-MMSE and GDS were 5.08 (±2.81), 19.77 (±4.90) and 5.57 (±4.35). Aggravated depressive symptoms were associated with exposure to high PM2.5 levels (adjusted percent change APC per 10 µg/m³ PM2.5 increase for 3-day average: 5.76% [95% CI, 0.31-11.51]).

Conclusions.

The present results indicate that PM_{2.5} exposure is associated with depressive symptoms in patients with AD. The findings in this study suggest that the role of air pollution deserves great consideration in elderly with cognitive impairment.

Conflict of Interest: None

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