

Relationship among the Air Pollution and Atopic Dermatitis Using Meta-Analysis

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Abstract : Background: Air pollution from global warming has a considerable influence on respiratory disease and atopic dermatitis (AD). Present studies base on a hypothesis about correlation between air pollutant and AD, and the results are analyzed from various points of view. Objectives: This study aimed to integrate the relevant researches for air pollutant and AD, and to perform the systematic literature review and meta-analysis to provide the basis of air pollutant control. Methods: Research materials were collected from original articles published in English academic journals including medicine, nursing and health science from August 1 to 31, 2016. We collected the materials from Pubmed, Medline, Embase, Cochrane Central database with Prisma (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) based on the Cochrane Systematic Review Manual, and performed the evaluation and analysis for selected materials. We got the research results for risk of bias using Rev-Man ver. 5.2, and meta analyses using STATA. Results: The prevalence of infantile atopic dermatitis were 1.05 times higher than other groups who were exposed to air pollution, and exposure to NO₂ (1.08, 95% CI: 1.02 - 1.14), O₃ (1.09, 95% CI: 1.04 - 1.15), SO₂ (1.07, 95% CI: 1.02 - 1.12) in subgroup air pollutant was considerably associated with infantile atopic dermatitis. The prevalence of infantile atopic dermatitis was 1.03 times higher than other groups who were exposed to PM_{2.5}, but the results were not statistically similar. Conclusion: Health effect from environmental pollution risen people's interest in environmental diseases. Air pollutant was associated with AD in this study, but selected literature was based on non-RCT (Randomized Controlled Trial) study. Therefore, there was a limit in study method including control, matching, and correction of confounding variables. For clear conclusion, it is necessary to develop the appropriate tool for object of study and clear standard to measure of air pollutant.

Keywords : air pollution, atopic dermatitis, children, meta-analysis

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