عنوان مقاله:

The Association Between Exposure to Ambient Particulate Matter and Childhood Obesity: A Systematic Review and Meta-analysis

محل انتشار:

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خلاصه مقاله:

Context: Physical environment contamination and in particular, air pollution might cause long-term adverse effects in child growth and a higher risk of catching non-communicable diseases later in life. Objective: This study aimed to overview the human studies on the association of exposure to ambient Particulate Matter (PM) with childhood obesity. Data Sources: We systematically searched human studies published until March ۲۰۱۸ in PubMed, Scopus, Ovid, ISI Web of Science, Cochrane library, and Google Scholar databases. Study Selection: All studies that explored the association between PM exposure and childhood obesity were assessed in the present study, and finally, ۵ studies were used in the meta-analysis. Data Extraction: Two independent researchers performed the data extraction procedure and quality assessment of the studies. The papers were qualitatively assessed by STROBE (Strengthening the Reporting of Observational studies in Epidemiology) statement checklist. Results: The pooled analysis of PM exposure was significantly associated with increased Body Mass Index (BMI) (Fisher's z-distribution=۰.۰۲۸; ۹۵% CI=۰.۰۱۷, ۰.۰۳۸) using the fixed effects model. We also used a random-effect model because we found a significant high heterogeneity of the included studies concerning the PM (I۲=۹۴.۴%; P<۰.۰۰۱). PM exposure was associated with increased BMI (Fisher's z-distribution=۰.۰۲۲; ۹۵% CI=-۰.۰۵۷, ۰.۱۰۲). However, the overall effect size was not significant, and heterogeneity of the included studies was similar to the fixed effect model. Discussion: Our findings on the

significant association between PM۱۰ exposure and the increased BMI (r=۰.۰۳۴; ۹۵%CI=۰.۰۰۷, ۰.۰۶۱) without heterogeneity (I۲=۱۶.۶%, P=۰.۲۷۴) (in the studies with PM۱۰) suggest that the PM type might account for the heterogeneity among the studies. Conclusion: The findings indicate that exposure to ambient PM۱۰ might have significant effects on childhood obesity.

کلمات کلیدی:
Air pollution, Particulate matter, Childhood obesity, Meta-analysis

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