Association between benzene exposure and childhood leukemia: A systematic review and meta-analysis updated to July 2016

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Abstract
Benzene is one of the aromatic hydrocarbons which are classified in class 1 of carcinogenesis. Unlike adults, the risk of leukemia cancer in children caused by being exposed to benzene has not been proven. Hence in this study we tried to review systematically and meta-analyze the studies until July 2016 and update the results. For finding studies conducted in Iran and the world, the databases Pubmed, Scopus, Irandoc SID and ISI were used. In this study, 13 articles in all of which a similar methodology was used and they were done in period 1988 to 1997, were investigated. Because the heterogeneity of the studies was higher than 50%, the Random model was used ($I^2 = 53.5\%, P \text{ value} < 0.05$). The mean of risk amount of studies was $RR = 1.76 \ (1.28, 2.31), P \text{ value} < 0.001$. The results of systematic review and meta-analysis of 13 studies showed that being exposed to benzene increases significantly the leukemia cancer risk by 72% ($P \text{ value} < 0.001$). © 2016, International Journal of Pharmacy and Technology. All rights reserved.