

Occupational xylene exposure and respiratory impairment of paint manufacturing workers

ABSTRACT

A cross-sectional study was conducted among paint workers to determine the association between xylene exposures with respiratory health. Sixty-four exposed workers working with xylene and 47 unexposed administrative workers were selected. Air xylene (AX) were analyzed using the Gas Chromatography while urinary methyl hippuric acid (MHA) were analyzed using High Performance Liquid Chromatography. Lung functions were measured using Chestgraph HI-701 spirometer. The AX for the exposed was significantly higher than the unexposed workers ($p < 0.001$). The urinary MHA of the exposed was higher than the unexposed workers ($p < 0.001$). Among the exposed, more respiratory symptoms, higher lung functions abnormality and significantly lower FEV1% predicted and FVC% predicted were found. Findings showed significant correlations between AX and urinary MHA. AX significantly influenced the lung functions. Smoking years and education influenced the respiratory symptoms. Those exposed have early signs of lung impairment and respiratory symptoms. Smokers faced the risk of developing chronic irreversible respiratory diseases.

Keyword: Solvent; Xylene; Methyl hippuric acid; Lung functions; Paint manufacturing industries