Respiratory Disorders in Employees of a Complex of Petrochemical Wastewater Treatment Plants

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Abstract

Background: Wastewater treatment workers may be exposed to a wide range of chemical pollutants and biological contaminants such as bacteria and fungi. The aim of this study was to investigate the potential work-related respiratory disorders in workers of 10 wastewater treatment of petrochemical industries in Iran.

Methods: This cross-sectional study was carried out on 198 employees of wastewater treatment plants and 99 non-exposed (referents) employees. American thoracic society (ATS) standard questionnaire was used for investigation of respiratory symptoms. Pulmonary function parameters were measured using a calibrated Vitalograph. The data were analyzed by SPSS version 16.

Results: The result of this study showed that odds ratio of cough, phlegm, productive cough, wheezing, and breathlessness in exposed group were 2.94, 1.10, 1.95, 0.82 and 1.97 times higher than reference subjects. Additionally mean values of most parameters of pulmonary function tests (PFT) were significantly lower in exposed individuals than in referent subjects ($P<0.05$).

Conclusions: Significant increase in prevalence of respiratory symptoms and decrement in PFTs in wastewater treatment workers may be attributed to their exposure to bioaerosols.

Key words: Wastewater treatment, Respiratory symptoms, pulmonary function parameters, Bioaerosols

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