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Title: Respiratory symptoms, ventilatory function and bronchial responsiveness in workers exposed to cement dust

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Body: Objective: To determine the prevalence of respiratory symptoms, lung function test abnormalities and non specific bronchial hyperresponsiveness (BHR) among workers employed in cement industry. Methods: A cross sectional study was performed including 55 males (mean age= 42.2±8.7) employed in a cement plant (duration of exposure 16.1±7.2) and 50 male office workers as a control group (mean age=41.8±8.1) matched for age, smoking habits and socioeconomic status. Evaluation of examined subjects included completion of a questionnaire on respiratory symptoms in the last 12 months (cough, phlegm, dyspnea, wheezing, and chest tightness), spirometry and histamine challenge (PC20≤8 mg/mL). Results: Cement workers had a significantly higher prevalence of cough with phlegm (32.4 %), dry-cough (20.1%), wheezing (12.8%), dyspnea (4.7%), and nasal symptoms (9.2 %) than the control group (p<0.05). All spirometric parameters (FVC, FEV1, FEV1/FVC%, MEF75-25, MEF50, and MEF25) were lower among cement workers compared with the control group, but statistical significance was found for MEF25, MEF50, and MEF75 (p=0.02, p=0.02, and p=0.005; respectively), adjusted for age, duration of exposure, height, and pack-years. The prevalence of non specific BHR, defined by histamine PC20 less than 8 mg/mL, was higher in cement workers, but still without statistical significance (22.1% vs. 15.1%). Conclusion: Our study suggest that occupational exposure to cement dust is associated with a higher prevalence of respiratory and nasal symptoms, lung function impairment as well as higher prevalence of non specific airway responsiveness.