

ASSESSMENT OF INFLAMMATION IN THE UPPER AND LOWER RESPIRATORY TRACT OF WASTE COLLECTORS USING NON-INVASIVE METHODS

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Waste collectors are exposed to a heterogeneous mixture of bioaerosols able to induce health effects. The study aim was to evaluate inflammatory processes in the respiratory tract via exhaled nitric oxide (FeNO) and analysis of nasal lavage fluid (NALF) and induced sputum (IS). In a cross-sectional study among 69 male waste collectors (48% smokers), 39% had rhinitis, 29% conjunctivitis, 35% cough, 16% chronic bronchitis, and 10% COPD. 32% were classified as atopics. In workers with rhinitis the number of atopics was slightly higher and the FeNO values significantly higher than in the asymptomatic group. FeNO values of 26 workers were lower than 10 ppb, 92% of them were smokers and 85% had respiratory symptoms of the lower airways. Most of the IS biomarkers were significantly higher in smokers than in non-smokers. Non-smoking workers with respiratory symptoms of the lower airways had slightly elevated IS mediator concentration compared to asymptomatic non-smokers. Inflammatory changes in the lower respiratory tract could be detected by analysis of biomarkers in IS samples and FeNO demonstrated to be mostly influenced by smoking and respiratory symptoms. Implementation of FeNO especially in non-smoking workers is reasonable in occupational studies on respiratory health effects.