Abstract

Objectives Quantifying personal exposure to particles less than 10 micrometres in diameter (PM 10 ) and determining the prevalence of respiratory symptoms in traffic-police officers working in Bogotá’s metropolitan area. Methods This was a cross-sectional study of 574 traffic-police officers divided into two groups (477 traffic-police and 97 police working in an office). They were given a questionnaire inquiring about respiratory symptoms, toxicological medical evaluation, lung function tests and personal PM 10 monitoring. The differences between groups were found using stratified analysis (i.e. comparing odds ratios). Multivariate analysis of factors related to symptoms and diagnosis of respiratory alteration was also performed. Results Respiratory symptoms concerned a higher prevalence of cough, expectoration and rhinosinusitis in the traffic-police group. Medical examination revealed that the traffic-police group had higher nasal irritation prevalence; lung function tests showed no difference. Mean PM 10 levels were higher for the traffic-police group (139.4 g/m 3 ), compared to the office work group (86.03 g/m 3 ). Discussion PM 10 values in both groups did not exceed allowable limits for respirable particles in the workplace according to ACGIH standards. Traffic-police exposed to air pollution had an increased risk of developing respiratory symptoms and signs, thereby agreeing with the results of this and other studies. Personal monitoring is a valuable tool when quantifying the concentration of PM 10 to which an individual has been exposed during a normal workday. This study contributes towards further research in to the effects of PM 10 in populations at risk.

Keywords
Air pollution, signs and symptoms, respiratory tract disease, particulate matter, traffic-police officer, occupational exposure.