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Assessing lifetime occupational chrysotile inhalation exposure, respiratory symptoms, and lung cancer risk among brake maintenance workers in Malaysia
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Abstract

This study aimed to estimate workers' occupational lifetime exposure to chrysotile and examine the respiratory symptoms and lung cancer risk. A total of 112 workers were interviewed about their occupational histories. Exposure modeling using information on the determinants of exposure was used to estimate chrysotile emissions. The cumulative lifetime exposure was then assessed for each worker. Respiratory symptoms were obtained using a validated questionnaire. Lung cancer mortality rate was also predicted using a model. Almost all the workers were male and young (mean age = 30 years, SD = 7). The estimated lifetime occupational chrysotile inhalation exposure ranged from 0.0001 to 0.0486 f/mL.years (median = 0.0018 f/mL.years, IQR = 0.486). A high prevalence of cough symptom (11.7%), and low estimated cancer risk (<1%) were reported. In conclusion, the lung cancer risk among our cohort of workers was at a low level because of lower cumulative lifetime occupational chrysotile exposure. © The Author(s) 2024.

Author Keywords

Chrysotile; cumulative exposure; inhalation; lung cancer; respiratory symptoms

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