

Studio longitudinale della funzione ventilatoria in ex-esposti ad asbesto con e senza placche pleuriche

FRANCESCA RUI, RENATA DE ZOTTI, C. NEGRO, M. BOVENZI

Unità Clinica Operativa di Medicina del Lavoro, Università degli Studi di Trieste

KEY WORDS

Pleural plaques; lung function; asbestos exposure

SUMMARY

«A follow-up study of lung function among ex-asbestos workers with and without pleural plaques». Background: Pulmonary function testing is widely accepted as an integral part of medical surveillance of occupational lung diseases. There are several cross-sectional studies evaluating lung function among asbestos-exposed workers, but only few longitudinal surveys have been performed. Objectives: To evaluate, over a mean follow-up period of 3.7 (SD 1.8) years, the loss of lung function in a group of 103 workers with previous exposure to asbestos (mainly ship building/repairing), according to the presence or absence of pleural plaques at radiological examination. Methods: Chest radiographic examination was used to ascertain the presence/absence of pleural plaques. If chest X-ray films were positive for pleural plaques, HRCT (High Resolution Computed Tomography) was used to exclude any parenchymal disease. The assessment of lung function over time included repeated measurement of vital capacity (VC), forced expiratory volume in one second (FEV₁) and total lung capacity (TLC). Smoking was assessed in terms of pack-years. A Generalized Estimating Equations (GEE) approach to repeated spirometric measurement was used to investigate the relationship between the loss of pulmonary function and (i) presence/absence of pleural plaques, (ii) smoking status, and (iii) work seniority in workplaces with exposure to asbestos. Results: In the ex-asbestos workers, mean age at the first examination was 49 (SD 6) years and work seniority averaged 25 (SD 7) years; 36% were non-smokers, 27% smoked <15 pack-years, and 37% smoked ≥15 pack-years. Thirty-six workers showed pleural plaques at radiological examination. Overall, 236 measurements of VC and FEV₁, and 234 determinations of TLC were available. Multivariate GEE approach to age- and height-adjusted spirometric data showed that pleural plaques were not associated with a significant loss of pulmonary function during the follow-up. When compared with non-smokers, heavy smokers (≥15 pack-years) showed on average a significant loss of VC (-5.3%, IC 95%: -9.4÷-1.2%), FEV₁ (-8.4%, IC 95%: -13.2÷-3.5%), and TLC (-4.0%, IC 95%: -7.4÷-0.5%). An occupational history of previous exposure to asbestos was significantly associated with an 10-year decrease in VC (-3.1%, IC 95%: -5.9÷-0.3%) and FEV₁ (-4.9%, IC 95%: -8.3÷-1.5%). Conclusions: The results of this follow-up study showed that smoking and previous asbestos exposure were associated with a mild, but statistically significant, loss of lung function. Radiological findings of pleural plaques were not related to deterioration of lung function over the follow-up period.

Pervenuto il 17.7.2003 - Accettato il 24.11.2003

Corrispondenza: Unità Clinica Operativa di Medicina del Lavoro, Università degli Studi di Trieste, Via della Pietà, 19 - 34129 Trieste - Tel. 040/3992312 - Fax 040/368199