

Stima dell'esposizione ad asbesto mediante analisi mineralogica del liquido di lavaggio broncoalveolare

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KEY WORDS

Asbestos; mineralogical analysis; bronchoalveolar lavage; transmission electron microscopy (TEM)

SUMMARY

«Assessment of asbestos exposure via mineralogical analysis of bronchoalveolar lavage fluid». Background: Mineralogical analysis of bronchoalveolar lavage fluid (BALF) by electron microscopy could be the most suitable method for assessing asbestos exposure. However, it has been claimed that there is not a standardized or systematic approach to the subject of mineralogical analysis. Objectives: The aim of the study was to evaluate mineralogical analysis of BALF by transmission electron microscopy (TEM) as biomarker of asbestos fibre load. Methods: BALF was examined in 193 exposed workers (189 men and 4 women) and in 84 patients (65 men and 19 women) who underwent diagnostic fiberoptic bronchoscopy for various clinical purposes. Asbestos bodies (AB) in BALF were counted with a phase contrast microscope, while fibres were counted and analysed by TEM. Results: Fibre counting by TEM showed a significant difference in the two populations (two tailed Mann-Whitney U test, $p=0.0044$), since it was positive in all exposed subjects. Only 75.1% of the exposed population was positive for asbestos bodies (AB). Subjects who had been exposed over a long time period had higher concentrations of fibres than subjects who had been exposed more recently probably because of higher exposure in the past. Conclusions: The study confirms the results of a previous study on a limited number of subjects. Fibre concentrations in BALF can be considered as a reliable biomarker of past asbestos exposure even after many years after cessation of exposure.

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