

Importanza del lavaggio broncoalveolare nella dimostrazione di progressa esposizione ad amianto

G. RIVOLTA, E. PRANDI*, M. SOGLIANI**, O. PICCHI

Centro Studi e Ricerca sugli Effetti Biologici delle Polveri Inalate, Università degli Studi di Milano

* ASL Città di Milano, Distretto 2, Milano

** Scuola di Specializzazione in Medicina del Lavoro, Università degli Studi di Milano

KEY WORDS

Bronchoalveolar lavage; previous exposure to asbestos

SUMMARY

«The value of broncho-alveolar lavage in demonstrating past exposure to asbestos». A study was made via a clinical approach in the absence of environmental data with the aim of demonstrating a possible past exposure to asbestos in a working population that had never been examined before nor had ever undergone any specific health checks. It was deemed useful to compare this working population with a control population not exposed to asbestos. The population under study consisted of 126 employees of a single (thermonuclear) department of a metal engineering industry who reported having used asbestos as insulation material in all heat processes up to the beginning of the 1980's. Pleural plaques were observed in 13 workers that were also confirmed by high resolution TC (HRTC) except in one case. The control group consisted of subjects seen at the Clinica del Lavoro of Milan for non-asbestos related diseases in whom a fibrobronchoscopy with broncho-alveolar lavage (BAL) was performed for diagnostic purposes. In each group asbestos bodies were counted in the BAL liquid using a method with a detection limit of 0.1 bodies/ml. The asbestos bodies detected in the alveolar liquid of subjects in the control group were between a maximum of 0.25 and a minimum of 0 bodies/ml of liquid ($\bar{x}=0.03$; $SD=0.64$) whereas in the sample of subjects from the population under study who underwent BAL the results gave a concentration of asbestos bodies in the BAL liquid between a maximum of 9.0 and a minimum of 0.15 bodies/ml of liquid ($\bar{x}=2.38$; $SD=2.72$). In order to obtain a statistically significant difference between the control population, which was certainly not exposed, and the sample of subjects undergoing BAL from the population for which an occupational exposure was assumed, we applied the non-parametric Wilcoxon-Mann-Whitney test for independent samples in view of the asymmetric distribution of the values of asbestos body concentration in the alveolar liquid: the result was a statistically significant difference ($p<0.001$) between the two populations. We also calculated the total asbestos bodies recovered in the BAL liquid of subjects from both populations. In the control group total asbestos bodies were between a maximum of 15 and a minimum of 0 ($\bar{x}=1.8$; $SD=3.9$) while in the group under study the concentration of total asbestos bodies recovered in BAL liquid was between a maximum of 990 and a minimum of 12.7 ($\bar{x}=206.5$; $SD=270$). The Wilcoxon-Mann-Whitney test was also applied to these data, the result of which was that the difference in exposure between the two populations was statistically significant ($p<0.001$). Concluding, the study demonstrates the importance of asbestos body count in BAL liquid as an objective indicator of past occupational exposure to asbestos, thus providing documented proof that overcomes any doubts arising from case history and any lack of environmental data that could prove exposure