

# Carico polmonare di fibre di amianto in mesoteliomi di lavoratori tessili

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## KEY WORDS

Lung asbestos fibre burden; malignant mesothelioma; textile workers

## SUMMARY

**«Lung asbestos fibre burden in textile workers with malignant mesothelioma».** **Background:** Lung burden of amphibole fibres is a good biological index of occupational cumulative asbestos exposure. Malignant mesothelioma (MM) has been amply documented in textile industry workers, dealing either with mineral fibres or with vegetable and animal fibres. So far the concentration of asbestos fibres in lung tissue among textile workers has not been reported in Italy. We analysed asbestos burden in the lung tissue of eleven textile-workers with malignant mesothelioma, mainly employed in industries near Brescia, in the North of Italy. **Objectives:** To characterize lung asbestos concentration and fibre type retained in the lung of asbestos and non-asbestos textile workers. **Methods:** Sample of lung parenchyma from necropsies and extrapleural pneumonectomy were collected, stored and analysed by scanning electron microscope, according to the methods recommended in the current scientific literature. Nine patients were interviewed directly for occupational history. **Results:** Eleven cases of MM (10 primary pleural, 1 primary peritoneal) were collected, 9 women and 2 men, aged between 51 and 87 years, 4 asbestos-textile workers and 7 non-asbestos textile workers. The highest values of asbestos fibres were detected in all the workers of the former group and in 3 non-asbestos workers (jute recycling employees), with concentrations between 9.1 and 397 million/g of dried lung tissue. The total fibre concentration in the other 4 non-asbestos textile workers (silk and cotton production workers) ranged from 0.33 to 1.2 million/g of dried lung tissue. In only one of these subjects, did lung amphibole burden exceed 1,000,000 amphibole fibres longer than 1  $\mu\text{m}$  per g of dried tissue. Eight cases out of eleven, showed a higher concentration of amphiboles than chrysotile. We detected amphibole fibres in all the "non-asbestos" textile workers and for two of them a higher concentration of tremolite. **Conclusion:** i) Among textile workers using asbestos or jute recycling, the asbestos fibre burden is as high as that found in other high risk jobs (e.g. asbestos-cement workers); ii) among non-asbestos textile workers, employed in cotton and silk production, the fibre content in lung tissue was much lower and it was nonetheless above the occupational cut-off for one of them; iii) tremolite found in lung tissue of non-asbestos textile workers with MM could be a contaminant of chrysotile friction materials or originate, with other amphiboles, from some other source as yet to be investigated.