

Mesothelioma associated with environmental exposures

R. PASETTO, P. COMBA, A. MARCONI

Department of Environment and Primary Prevention, Istituto Superiore di Sanità, Rome

KEY WORDS

Environmental exposures; asbestos; asbestiform fibres; mesothelioma

SUMMARY

Background: *The main sources of environmental, non-occupational exposure to asbestos or asbestiform fibres are: a) industrial plants in which asbestos was used in the production process; b) asbestos "in place" (mainly in buildings); c) contaminated soils. The association of these exposures with increasing risk of mesothelioma has been documented since 1960 in many places. Objectives and Methods:* *The present paper is aimed at describing the main results of studies performed in the locations with soils naturally contaminated with asbestos or asbestiform fibres. Environmental exposure data and asbestos-related health outcomes, mainly mesothelioma, are analyzed through a review of the literature. Results:* *The sites with asbestos or other mesotheliomatogenous fibres in soils are characterized by low concentration levels of airborne fibres. Furthermore, exposure levels may increase when specific activities are carried out (mainly related to building construction), involving mechanical disturbance of fibre-containing materials. The type of fibres found are mainly amphiboles (tremolite). The population at risk of exposure is the general population, which can be exposed from birth. In these sites, the sex ratio of mesothelioma cases is close to 1.0 and the average age of cases ranges from 50 to 60 years. Conclusions:* *Both "natural" and industrial environmental asbestos or asbestiform fibre exposures increase potential risk for mesothelioma. Strategies of environmental reclamation and risk communication should be implemented in these areas.*