

Mesothelioma in Blood Related Subjects: Report of 11 Clusters Among 1954 Italy Cases and Review of the Literature

Valeria Ascoli,^{1*} Domenica Cavone,² Enzo Merler,³
Pietro Gino Barbieri,⁴ Luciano Romeo,⁵ Francesco Nardi,¹
and Marina Musti²

Background Malignant mesothelioma is a sporadic tumor related to asbestos. Its occurrence in blood relatives raises the question of potential contribution of predisposing factors.

Methods The study analyses the features of mesothelioma in blood relatives that might explain the disease clustering. Data sources of familial clusters were three population-based Mesothelioma Registries in Italy (Veneto and Apulia Regions, Brescia province; 1978–2005) and Medline, Toxline, and Oshline/Hseline databases for a review of the literature (1968–2006).

Results Eleven clusters (22 cases) were identified among 1954 Italy mesothelioma cases, and 51 clusters (120 cases) were extracted from 33 studies. The proportion of Italy familial cases was 1.4 per 100 mesothelioma cases; the ratio between the number of familial clusters and the number of non-familial mesothelioma cases was 1:148. The mesothelioma profile in consanguineous is the same as in non-consanguineous subjects (male prevalence; pleural site; age at diagnosis >50 years; asbestos exposure). Most clusters occurred in asbestos workers (shipyard, asbestos-cement production/processing, and insulation) and household-exposed blood relatives. Others were related to asbestos-cement factory pollution, asbestos-in-place, and handling asbestos-contaminated textiles. Two clusters were without any known exposure. Cancer family history revealed lung cancer cases in eight clusters.

Conclusions Available data support asbestos exposure as the main risk factor in mesothelioma cases among blood relatives. Our finding of a low proportion of familial cases would not suggest the influence of a large genetic component for mesothelioma in blood relatives. Am. J. Ind. Med. 50:357–369, 2007. © 2007 Wiley-Liss, Inc.

KEY WORDS: familial cancer; asbestos; mesothelioma registries; Italy

¹Department of Experimental Medicine, University La Sapienza, Rome, Italy
²Department of Internal Medicine and Public Medicine, Section of Occupational Medicine Ramazzini, University of Bari, National Registry of Mesothelioma, Regional Operative Centre (C.O.R.), Apulia, Bari, Italy

³Venetian Mesothelioma Registry, Occupational Health Unit, Department of Prevention, National Health Service, Padua, Italy

⁴Occupational Health Unit, National Health Service, Mesothelioma Registry, Brescia, Italy

⁵Occupational Medicine, Department of Medicine and Public Health, University of Verona, Italy

Contract grant sponsor: Ministero dell'Istruzione, dell'Università e della Ricerca; Fondazione "Eleanora Lonillard Spencer Cenci".

*Correspondence to: Valeria Ascoli, Dipartimento di Medicina Sperimentale e Patologia, Viale Regina Elena, 324, 00161-Roma, Italy E-mail: valeria.ascoli@uniroma1.it

Accepted 24 January 2007

DOI 10.1002/ajim.20451; Published online in Wiley InterScience (www.interscience.wiley.com)