WS-E-14 Carolina Mensi

The Lombardy Mesothelioma Registry (Northern Italy): Results of Three Years of Surveillance

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Abstract

Introduction
The Lombardy Registry of Mesothelioma (LMR) started its activity in 2000 as a Regional Operating Centre (ROC) of the National Mesothelioma Registry, in application of a national law. The Registry collects all new cases of malignant mesothelioma (MM) of the pleura, peritoneum, pericardium and vaginal tunic of testis occurring in residents in Lombardy Region (Northern Italy) since 01/01/2000.

Objectives
To estimate the regional incidence of MM, to define the asbestos exposure, to identify the unknown contamination sources.

Methods
Every year about 300 suspected cases are actively reported by the selected departments (pathology, pneumology, surgery, oncology) of every hospital. For each case diagnosis is ascertained through examination of clinical records according to the National Registry Guidelines. For confirmed cases a standardized questionnaire is administered to the patient or his/her next-of-kin in order to verify possible asbestos exposure.

Results:
For the period 2000-2003, 697 cases were evaluated to date: the diagnosis was defined certain for 416 subjects (60%), probable for 78 (11%), possible for 40 (6%). For 160 subjects (23%) the diagnosis was not confirmed. For the 494 cases (338 M, 156F) of MM with high degree of clinical ascertainment (MM certain + probable), the median age was 68 years (range 35-96), and the most representative site (94% of cases) was the pleura. Occupational exposure to asbestos has been found for about 60% of the cases. The most important exposures were in the building trades, metal manufacture, machine production and maintenance. An unexpectedly high proportion of cases had been employed in non-asbestos-textile factories. The age-standardized incidence rates of pleural MM were 3.8/100.000 [CI 95%: 3.1-4.4] and 1.4/100.000 [CI 95%: 1.1-1.7], respectively for males and females.

Conclusion
Incidence rates of MM are among the highest in Italy. An unexpected elevated risk was found for non-asbestos-textile workers.

Introduction

Malignant Mesothelioma (MM) is a well-known disease closely related to asbestos exposure. In 1991 Italy banned asbestos with a law that also promised the institution of the National MM Registry, but only in 2002 was a new law for the registration of MM cases put into effect for all the Italian Regions. The Lombardy Mesothelioma Registry (LMR) started its activity in 2000 as a Regional Operating Centre (ROC) of the National Mesothelioma Registry. The Registry collects all incident cases of MM of the pleura, peritoneum, pericardium and vaginal tunic of testis occurring in residents in the Lombardy Region (Northern Italy) since 01/01/2000. The aims of the Registry are: to estimate the regional incidence of MM, define asbestos exposure of each case, identify unknown contamination sources, and promote research projects.

Methods

Every year about 300 “possible” cases are actively reported to the Registry by the main departments (pathology, pneumology, surgery, oncology) of each regional hospital. For each case, all available clinical records are collected and reviewed, including radiological exams, histology reports and disease history, so that a panel composed of pneumologists, oncologists, and pathologists may revise the diagnoses. According to standardized criteria set up by the National Registry [1] diagnoses are categorized as certain, probable or possible. Evaluation of asbestos exposure is based on information collected through a standardized questionnaire administered by trained interviewers to the patient or his/her next-of-kin. The collected information is then discussed with an industrial hygienist, occupational health physicians, and epidemiologists to evaluate asbestos exposure in the workplace and environmental settings. Case ascertainment completeness was verified by record linkage with other sources, like hospital discharge records and death certificates coded as 163 according to the ICD IX, along with the list of the cases compensated by the National Insurance Institute.

Results

In the period 2000-2003, 697 cases were evaluated: diagnosis was defined certain for 417 subjects (59.8%), probable for 78 (11.2%), possible for 40 (5.7%). The diagnosis was not confirmed in 160 subjects (23.3%). For 495 certain and probable MM cases (339 M, 156F), the median age was 68 years (range 35-96). Fifteen cases occurred in relatively young subjects (less than 45 years old) and were mainly characterized by environmental and/or domestic or unknown exposure to asbestos. Only 2 of these subjects had occupational exposure to asbestos.

The most representative site (93.5% of cases) of the malignancy was the pleura followed by peritoneum (5.6%). Histological diagnosis was available for 93.5% of the cases and the most frequent histological type was epithelial (310 cases), followed by biphasic (83 cases), and fibrous mesothelioma (34 cases); only a small proportion of cases was defined as mesothelioma.

69.1% of cases were directly interviewed, whereas the interview was administered to next of kin in 27.7% of cases; no interview was available for 16 subjects (3.2%).

The sources of asbestos exposure were classified as follows: occupational for 289 subjects (58.4%), environmental in 24 subjects (4.8%), hobby for 2 subjects (1.2%), unknown (based on the available information and currently knowledge of asbestos exposure cannot be excluded) for 80 subjects (16.2%). 46 subjects (9.3%) were not exposed and in 32 subjects (6.5%) exposure was not classifiable. Figure 1 shows the type of asbestos exposures in males and females: among males, occupational

activities were the major source of asbestos exposure (72.2%), in females the proportion of occupationally exposed cases was similar to the cases with “unknown” exposure (28%).

As regards specific occupational exposures, the picture was quite different between genders (Figure 2): building and construction industries, metal-working, and steel industries were the most frequent sectors among males; whereas almost half the female cases had worked in non-asbestos textiles factories (52%).

Lastly, the regional incidence rate of pleural MM for the year 2000 (the first year in which data collection and evaluation were completed) was 2.4/100,000 [CI 95%: 2.0-2.7]; the age-standardized incidence rates were 3.7/100,000 [CI 95%: 3.1-4.3] and 1.4/100,000 [CI 95%: 1.1-1.7], respectively, for males and females.

Discussion

Since January 2000 the LMR has received more than 1600 reports of possible cases, and all related documentation has been regularly reviewed. The good quality of collected data is documented by the high proportion of histological diagnoses and direct interviews. The Regional incidence rates of MM are higher than the National rates [3]. The Lombardy Region is a highly industrialised area: the most frequent occupational asbestos exposures were in metal-working and steel industries, building trades and construction. Exposure was unknown for about 16% of the cases. A national research programme has been recently implemented to improve exposure ascertainment, exploring tools and sources other than interviews. Due to the high frequency of cases observed in the non-asbestos-textile industry, the Registry started a search to verify asbestos dispersion sources in this occupational sector. Specific information was collected by technicians, maintenance personnel, and other experts and direct inspections were carried out in numerous workplaces that had not yet undergone significant changes with respect to the past. The industrial machinery utilized in the previous 40-50 years was also examined. Preliminary results were published previously [4], but research is still in progress. Briefly: a large amount of asbestos had been regularly applied to the ceiling and walls of the visited factories to avoid condensation of steam and dampen the noise level. In addition, asbestos had also been widely used to insulate water and steam pipes. The braking systems of most of the machines also had asbestos gaskets, and on several looms some brakes operated continuously in order to keep the warp in constant tension. It was evident that asbestos was widely employed, so occupational risk would be recognized for cases who worked in the non-asbestos textile factories. Currently the information about asbestos exposure of these cases of LMR is under re-examination and partially re-classified as occupational.

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Figure 1. Asbestos exposure in males and females

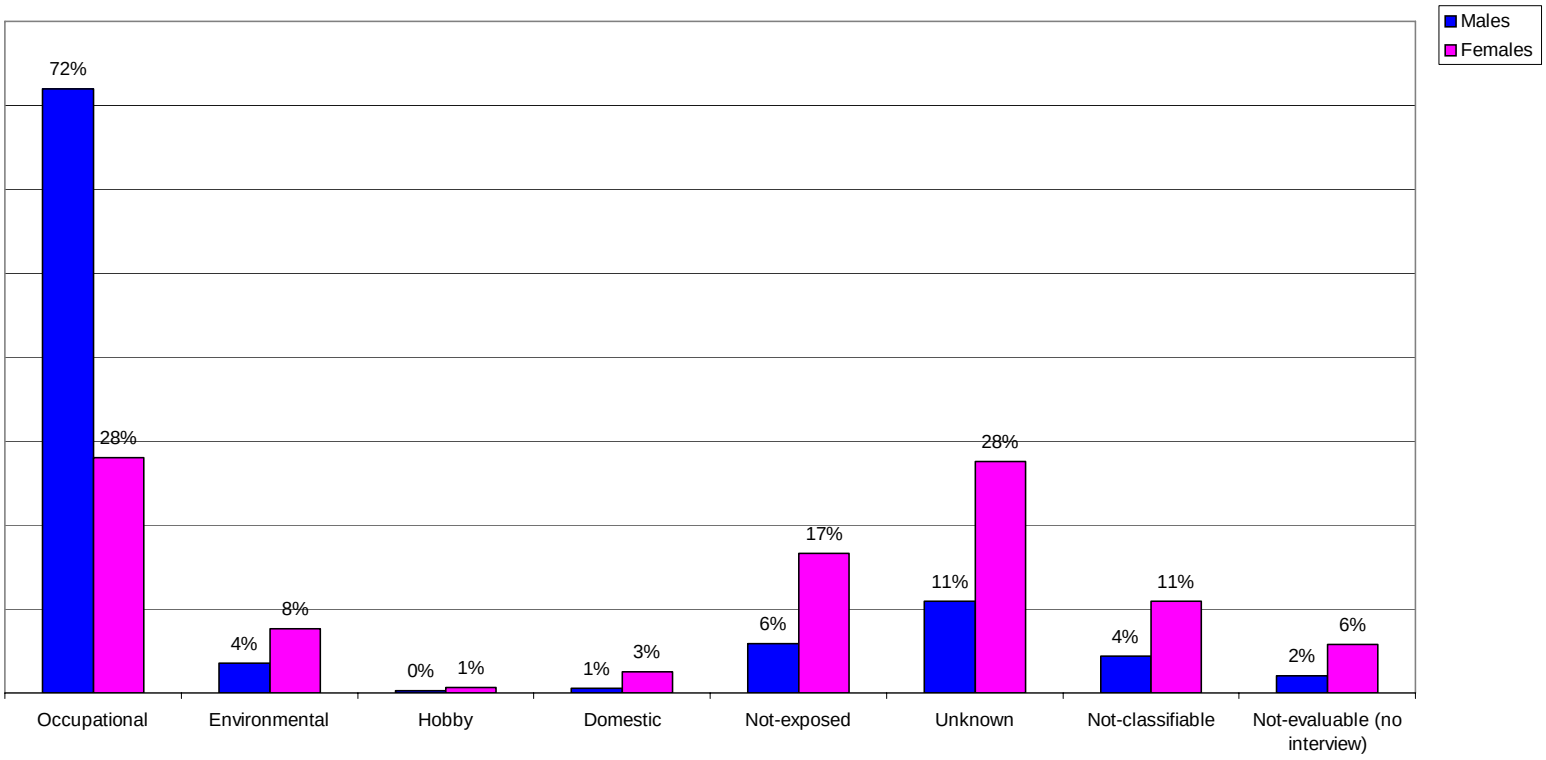
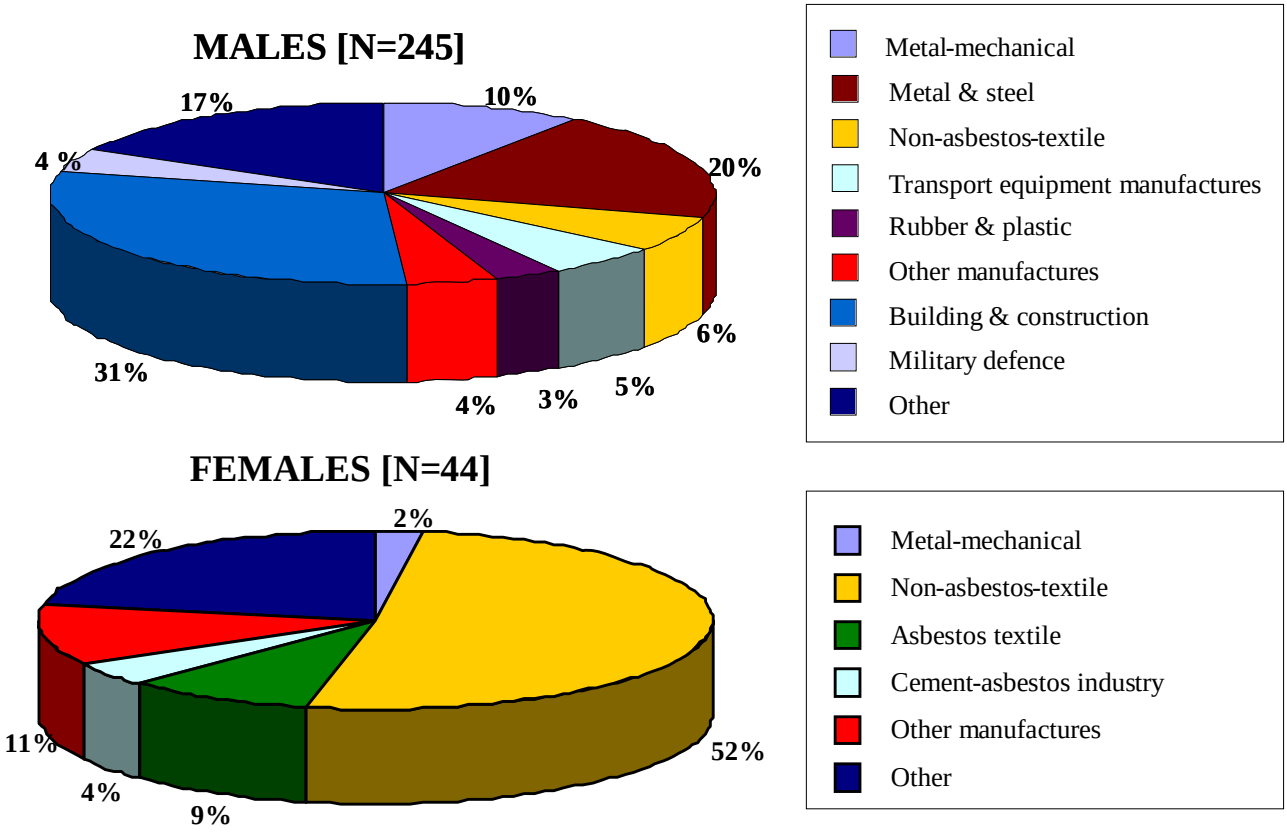


Figure 2. Occupational exposure to asbestos: case distribution by professional sector



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