

Chapter

1. Asbestos Exposure Assessment, Risk Identification, and Substitutes

Section

C. Epidemiology of ARDs

No./Title

25. Cancer risk after cessation of asbestos exposure: a cohort study of Italian asbestos cement workers

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Introduction

Asian context

Lung cancer and pleural mesothelioma mortality risks are reduced after cessation of asbestos exposure, which sends a clear message to Asian countries which continue to use asbestos.

Critical appraisal

After a long-term follow up of a cohort of asbestos exposed workers, a reduction in lung cancer mortality was observed after the end of exposure. It also suggested a reduction in risk for pleural mesothelioma with over 40 years of latency, while risk for peritoneal mesothelioma showed a continuing increase.

Unique keywords

Asbestos cement worker, lung cancer, mesothelioma

Abstract

Objectives: We aimed to study mortality for asbestos related diseases and the incidence of mesothelioma in a cohort of Italian asbestos cement workers after cessation of asbestos exposure.

Methods: The Eternit factory operated from 1907 to 1986. The cohort included 3,434 subjects active in 1950 or hired in 1950-86, ascertained from company records, without selections. Local reference rates were used for both mortality and mesothelioma incidence.

Results: Mortality was increased in both sexes for all causes (overall 1,809 observed (obs) vs 1,312.3 expected (exp); $p < 0.01$), pleural (135 obs vs 3.6 exp; $p < 0.01$) and peritoneal (52 vs 1.9; $p < 0.01$) malignancies and lung cancer (249 vs 103.1; $p < 0.01$). In women, ovarian (9 vs 4.0; $p < 0.05$) and uterine (15 vs 5.8; $p < 0.01$) malignancies were also in excess. No statistically significant increase was found for laryngeal cancer (16 obs vs 12.2 exp). In Poisson regression analyses, the RR of death from pleural neoplasm linearly increased with duration of exposure, while it showed a curvilinear increase with latency and time since cessation of exposure. RR for peritoneal neoplasm continued to increase by latency, duration and time since cessation of exposure. RR for lung cancer showed a reduction after 15 years since cessation of exposure and leveled off after 40 years of latency.

Conclusions: This study of a cohort of asbestos exposed workers with very long follow-up confirmed the reduction in risk of death from lung cancer after the end of exposure. It also suggested a reduction in risk for pleural mesothelioma with over 40 years of latency, while risk for peritoneal mesothelioma showed a continuing increase.



Annotation

Fact 1

- In a cohort of Italian asbestos cement workers, male workers showed significantly increased mortality for all causes (SMR 135.1; 128.2-142.3), pleural (SMR 3,203.9; 2,595.2-3,912.2) and peritoneal (SMR 2,786.6; 1,951.7-3,857.8) malignancies and lung cancer (SMR 242.5; 212.6-275.5).

Fact 2

- In a cohort of Italian asbestos cement workers, female workers showed significantly increased mortality for all causes (SMR 149.5; 134.7-165.5), pleural (SMR 6,208.6; 4,415.0-8,487.4) and peritoneal (SMR 2,567.3; 1,467.4-4,169.1) malignancies and lung cancer (SMR 220.5; 114.0-385.2).

Fact 3

- In a cohort of Italian asbestos cement workers, ovarian and uterine cancers were more frequent than expected [SMRs 227.3 (103.9-431.5) and 256.9 (143.8-423.8), respectively].

Fact 4

- This long follow-up study indicated a reduction in risk for lung cancer after the cessation of asbestos exposure and suggested a reduction in risk for pleural mesothelioma with over 40 years of latency.

Fact 5

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References