

Chapter

1. Asbestos Exposure Assessment, Risk Identification, and Substitutes

Section

C. Epidemiology of ARDs

No./Title

8. Asbestosis and mesothelioma among British asbestos workers (1971–2005)

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Introduction

Asian context

Because high incidence of asbestosis and mesothelioma is expected in Asian countries, a valid method for ascertainment needs to be established therein.

Critical appraisal

Ascertaining asbestosis and mesothelioma from underlying cause of death will underestimate the true incidence of disease. The authors estimated the true frequency of asbestosis and mesothelioma among asbestos workers in Great Britain (GB).

Unique keywords

Asbestosis, mesothelioma

Abstract



Background: Ascertainment of asbestosis and mesothelioma from underlying cause of death underestimates the burden of these diseases. The aims of this study were to estimate the true frequency of asbestosis and mesothelioma among asbestos workers in Great Britain (GB), and to identify factors associated with the risk of death with these diseases.

Methods: The GB Asbestos Survey was established in 1971 to monitor long-term health outcomes among workers covered by regulations to control asbestos at work. Asbestosis and mesothelioma cases were defined by multiple cause of death, and were ascertained by identifying asbestos workers on the GB Asbestosis and Mesothelioma Registers. Standardized mortality ratios (SMRs) were calculated; the risks of asbestosis and mesothelioma were modeled with Poisson regression analysis. Deaths to the end of 2005 were included.

Results: There were 15,557 deaths between 1971 and 2005 among the 98,912 workers. Altogether 477 asbestosis and 649 mesothelioma cases were identified. The SMR for all causes was 1.42, for asbestosis 51.3, and for mesothelioma 13.5. In multiply adjusted analysis, age, sex, job, and birth cohort were significantly associated with asbestosis and mesothelioma. For asbestosis year of first exposure, and for mesothelioma latency, were also statistically significant.

Conclusions: The asbestos workers experienced high mortality from all causes, asbestosis, and mesothelioma. There was some evidence that the risk of asbestosis and mesothelioma was lower in later birth cohorts and among those first occupationally exposed to asbestos more recently. Due to the long latency of both diseases, further follow-up is required to confirm these trends.

Annotation

Fact 1

- There were 477 asbestosis and 649 mesothelioma deaths among 98,912 British asbestos workers between 1971 and 2005.

Fact 2

- The standardized mortality ratios (SMRs) for asbestosis and mesothelioma, compared to the general population are 1.42 (95% CI; 1.39-1.44) and 13.5 (95% CI; 12.5-14.6), respectively. Women have higher SMRs (30.9, 95% CI; 18.3-48.8) than men (13.3, 95% CI; 12.3-14.4).

Fact 3

- Insulation workers had the highest relative risks (RR) compared to manufacturing workers (RR asbestosis 8.22, 95% CI; 6.56-10.3; RR mesothelioma 4.03, 95% CI; 3.26-4.99), followed by removal workers (RR asbestosis 1.72, 95% CI; 1.32-2.24; RR mesothelioma 1.92, 95% CI; 1.58-2.34).

Fact 4

- Mesothelioma death (649 deaths) among British asbestos workers selected in this study accounted for a small proportion of the 33,000 mesothelioma deaths that occurred during the period 1970-2005.

Fact 5

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References