

Chapter

1. Asbestos Exposure Assessment, Risk Identification, and Substitutes

Section

C. Epidemiology of ARDs

No./Title

21. Increased risk of malignant mesothelioma of the pleura after residential or domestic exposure to asbestos: a case-control study in Casale Monferato, Italy

Author/Contributor

Magnani C, Dalmaso P, Biggeri A

Bibliographic ID

Environ Health Perspect 2001 Sep;109(9):915-9

Introduction

Asian context

Asian countries should be aware of the role of residential and/or domestic exposure to asbestos.

Critical appraisal

The study investigated the role of environmental and domestic asbestos exposure among cases (male and female) of pleural malignant mesothelioma in an Italian city with asbestos cement (AC) factory where the largest Italian asbestos cement (AC) factory was located. After controlling for other sources of asbestos exposure, the risk of environmental asbestos exposure was confirmed which was greater than that of domestic exposure.

Unique keywords

Residential exposure, domestic exposure

Abstract



The association of malignant mesothelioma (MM) and nonoccupational asbestos exposure is currently debated. Our study investigates environmental and domestic asbestos exposure in the city where the largest Italian asbestos cement (AC) factory was located. This population-based case-control study included pleural MM (histologically diagnosed) incidents in the area in 1987-1993, matched by age and sex to two controls (four if younger than 60). Diagnoses were confirmed by a panel of five pathologists. We interviewed 102 cases and 273 controls in 1993-1995, out of 116 and 330 eligible subjects. Information was checked and completed on the basis of factory and Town Office files. We adjusted analyses for occupational exposure in the AC industry. In the town there were no other relevant industrial sources of asbestos exposure. Twenty-three cases and 20 controls lived with an AC worker [odds ratio (OR) = 4.5; 95% confidence interval (CI), 1.8-11.1]. The risk was higher for the offspring of AC workers (OR = 7.4; 95% CI, 1.9-28.1). Subjects attending grammar school in Casale also showed an increased risk (OR = 3.3; 95% CI, 1.4-7.7). Living in Casale was associated with a very high risk (after selecting out AC workers: OR = 20.6; 95% CI, 6.2-68.6), with spatial trend with increasing distance from the AC factory. The present work confirms the association of environmental asbestos exposure and pleural MM, controlling for other sources of asbestos exposure, and suggests that environmental exposure caused a greater risk than domestic exposure.

Annotation

Fact 1

- Twenty-three cases and 20 controls lived with an asbestos cement worker [odds ratio (OR) = 4.5; 95% confidence interval (CI), 1.8-11.1].

Fact 2

- The risk of pleural mesothelioma was higher for the offspring of asbestos cement workers (OR = 7.4; 95% CI, 1.9-28.1).

Fact 3

- The odds ratio of mesothelioma development for residence in Casale (at any distance from the factory) was 20.6 (95% CI, 6.2-68.6).

Fact 4

- Domestic exposure from asbestos-containing items caused OR 1.5 (95% CI, 0.7-3.0) considering any indoor and/or outdoor domestic exposure.

Fact 5

-

References