Chapter	1. Asbestos Exposure Assessment, Risk Identification, and Substitutes
Section	C. Epidemiology of ARDs
No./Title	**5. Asbestosis mortality in the USA: facts and predictions**
Author/Contributor	Antao VC, Pinheiro GA, Wassell JT, et al
Bibliographic ID	Occup Environ Med 2009 May;66(5):335-8

Introduction

Asian context	A strong association between asbestosis mortality and previous asbestos consumption at the national level is demonstrated. This provides a clear message to many Asian countries where asbestos is still used.
Critical appraisal	This paper applies a statistical model previously used in the field of air pollution and health (Am J Epidemiol, 2002). The method is fairly straightforward and clear implications.
Unique keywords	Prediction, asbestosis

Abstract

Background: Mortality trends in the USA show that deaths from asbestosis are increasing, while deaths related to other pneumoconiosis are declining.
Objectives: To analyze the association between asbestos consumption and asbestosis mortality trends.
Methods: In an epidemiological time series study, we used a modern computer-intensive local regression method to evaluate the relationship between asbestos consumption per capita (1900-2006) as the predictor variable and number of deaths from asbestosis (1968-2004). The predictor variable was progressively lagged by annual increments from 30 to 60 years and the goodness of fit assessed for each lag period. The model having the smallest Akaike`s Information Criteria was used to derive extrapolated estimates of future mortality based on more recent asbestos consumption data.
Results: Asbestos consumption per capita reached a peak in 1951 and gradually declined until 1973, when it started to drop rapidly. In 2006, it was 0.0075 kg/person/year. There were 25,564 deaths from asbestosis over the period 1968 -2004. The best-fitting model (adjusted coefficient of determination (R2) = 99.7%) for 1968-2004 deaths from asbestosis used asbestos consumption per capita 48 years prior (1920-1956) and the log value of asbestos consumption per capita 43 years prior (1925-1961). This model predicts a total of 29,667 deaths (95% CI; 19,629 to 39,705) to occur during 2005-2027 (an average of 1,290 deaths per year).
Conclusions: This study demonstrates a clear association between asbestos consumption and deaths from asbestosis and indicates that asbestosis deaths are not expected to decreases sharply in the next 10-15 years.

Annotation

Fact 1	There were 25,564 asbestosis deaths recorded over the period 1968-2004 in the USA.
Fact 2	The model predicted a total of 29,667 asbestosis deaths (95% CI; 19,629 to 39,705) during 2005-2027 in the USA.
Fact 3	There is a clear association between asbestos consumption and deaths from asbestosis as reported on death certificates.
Fact 4	Asbestosis deaths are not expected to decrease sharply in the next 10-15 years (note that the paper was published in 2008).
Fact 5	

References