

Estimating the incidence of malignant mesothelioma in Vietnam: a pilot descriptive population-based cancer registry study

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Background

Global patterns of asbestos consumption volumes have substantially changed since the 1980s when a large number of high-income countries implemented asbestos bans. This has led to the majority of asbestos consumption now occurring in low- and middle-income countries in the Asian region where asbestos bans are not yet in place and where occupational health and safety efforts need to be strengthened.

Vietnam is one of a number of countries in the Asian region where chrysotile asbestos is being used for the manufacturing of asbestos-containing building materials, primarily roof tiles. Due to the long latency period of asbestos-related diseases, asbestos use in Vietnam has the potential to lead to substantial human health, social, and economic impacts in coming decades.

Understanding the current burden of malignant mesothelioma in the Vietnam population is an important yet challenging task. Here, we pilot the use of the Vietnam regional population-based Vietnam cancer registry data to estimate the number of incident cases of malignant mesothelioma.

Materials and methods

First, using aggregate global cancer incidence data published by the International Agency for Research on Cancer (the Cancer Incidence in Five Continents series), we calculated median values in the Asian region for the percentage of malignant mesothelioma as a proportion of the total number of incident cancer cases. This analysis was performed for three calendar periods (1993-1997, 1998-2002, and 2003-2007).

Second, we gathered data about each of the nine population-based cancer registries in Vietnam, including the year that they were established, the total number of incident cases, and the total population in each region.

Third, we extracted individual unit records for people diagnosed with malignant mesothelioma (ICD O-3 morphology code M9050.3 (malignant mesothelioma, not otherwise specified)) from each of the nine cancer registries up to the end of 2013. These data were reviewed by colleagues familiar with cancer registry practices in Vietnam. Improbable or incompatible cases by combination of age group and gender were excluded from further analyses.

Results

Across all three calendar periods, malignant mesothelioma cases made up approximately 0.1% of all incident cancer cases in the Asian region (Figure 1). At each point in time, the median percentage value for men was higher than for females likely reflecting gender differences in occupational exposure to asbestos.

The Ha Noi Cancer Registry was established in 1987, with all other registries established much more recently (Table 1). The two cancer registries with the largest cancer population were the Ha Noi and the Ho Chi Minh cancer registries, 390,000 and 130,000 cases respectively, reflecting the larger size of populations in these regions.

We identified a total of 148 incident cases of malignant mesothelioma in Vietnam between 1987 and 2013 (Table 1). The majority of these cases (n=93) were recorded in the Ha Noi region where 26 years of cancer registry data were available. Men made up 53% of cases (n=78), with some variation in gender composition across regions. The majority of cases (65%) were aged 55 years or older (Table 2).

Conclusions

In this pilot study, we used aggregate and individual unit record population-based cancer registry data to investigate the incidence of malignant mesothelioma in the Vietnam population. We identified 148 incident cases, a substantially larger number than previously identified.

This is the first study in Vietnam to bring together data from the nine population-based cancer registries demonstrating the feasibility of such an approach for future descriptive cancer epidemiological studies.

These data represent the number of malignant mesothelioma cases recorded in each cancer registry as reported through hospital or pathology reports. Accurate diagnosis of malignant mesothelioma and asbestos-related lung cancers remains a challenge in low- and middle-income countries in the Asian region. As a result, the data presented here are likely to underestimate the true number of incident cases of malignant mesothelioma. Further, these data represent information about only the parts of Vietnam where cancer registry systems are in place.

Figure 1. Malignant mesothelioma as a percentage of all incident cancer cases in the Asian region, 1993-1997, 1998-2002 and 2003-2007

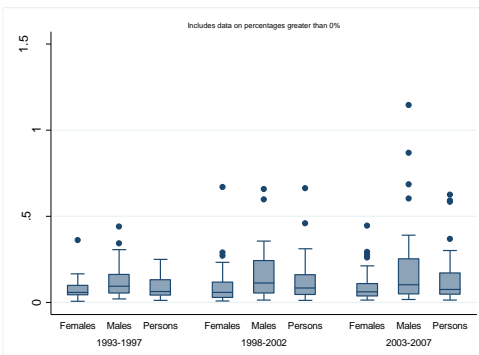


Table 1. Number of incident malignant mesothelioma cases identified in each population-based cancer registry, Vietnam, 1987-2013

Name	Period of incident cases	Total number of incident cancer cases in each regional population-based cancer registry	Incident malignant mesothelioma cases		
			Males	Females	Total
Cần Thơ /Hậu Giang Cancer Registry	2002-2013	77,000	4	2	6
Đà Nẵng Cancer Registry	2012-2013	2,000	0	0	0
Hà Nội Cancer Registry	1987-2013	390,000	49	44	93
Hải Phòng Cancer Registry	2010-2013	36,000	0	0	0
Hồ Chí Minh Cancer Registry	2000-2013	130,000	18	22	40
Kien Giang Cancer Registry	2009-2013	12,000	0	0	0
Thái Nguyên Cancer Registry	2001-2013	84,000	3	2	5
Thanh Hoá Cancer Registry	2009-2013	37,800	1	0	1
Thừa Thiên Huế Cancer Registry	2001-2013	84,000	3	0	3

Table 2. Number of incident malignant mesothelioma cases identified in Vietnam by age group, 1987-2013

Age group	Gender	
	Males	Females
0-44 years	20	11
45-54 years	14	5
55-64 years	16	33
65-74 years	15	12
75+ years	12	8
Unknown	1	1

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