

ASBESTOS-ASSOCIATED DISEASES IN SWEDEN - A GENERAL VIEW

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Until recently asbestos has been extensively used in Sweden. Today its use is almost prohibited and it has been replaced by man-made mineral fibres. Pleural plaques are common among the elderly in Sweden mainly because of occupational exposure to asbestos. Fatal asbestosis is rare and only a few cases are diagnosed every year. In men there is an increasing incidence of pleural mesotheliomas. Cases among women are much fewer. Health examinations for persons exposed to asbestos are mandatory.

The use of asbestos is now heavily regulated in Sweden and almost prohibited except in brake linings of heavy vehicles. However, the use was previously extensive. In the 1960s the yearly import of raw asbestos was about 20 000 tons for use in insulation, asbestos cement products and for the production of brake linings. There has been very limited fabrication of asbestos textile in Sweden. The major »asbestos industry« today are firms that have specialized in the removal of asbestos from buildings and other industries. This industry employs 1 000-2 000 persons today. The current limit value (LV) for asbestos is 0.5 fibres/ml (time averaged) and is going to be made still lower. The LV has, on the other hand, rather limited importance today as all those who are exposed to asbestos mostly use respirators and other protective equipment.

Traditionally, the health effects of asbestos exposure have mainly been considered for persons occupationally exposed to asbestos. Now the interest is more focussed on the very low asbestos concentrations in schools, offices etc and the possible risk arising from it. As the latency periods of asbestos diseases are long, often taking several decades, asbestos-related diseases are going to be diagnosed in Sweden, for several years to come. Today, the exposure, however, is generally very low.

MORBIDITY

The most common disease is pleural plaques. There has been a certain interest in diagnosing pleural plaques in Sweden because of the workmen's compensation (1).

Chest x-ray is the only feasible method of diagnosis, but unfortunately of low sensitivity (1). Some data indicate that the prevalence of pleural plaques in the general population may be as high as 10–30% in 65-year-old men (1–3). The occurrence of asbestos in the soil has been discussed as a cause of the high prevalence of pleural plaques in Finland, but the far majority of pleural plaques among the Swedes are considered to be caused by the industrial use of asbestos.

Earlier regulations concerning the use of asbestos mainly aimed at decreasing the risk of asbestosis. The first regulation dates from the early 1960s. Asbestosis is a rather uncommon disease today. New cases are mild and sometimes subclinical. The death statistics in Sweden shows a total of nine deaths from asbestosis between 1981 and 1983. A slight reduction of the respiratory function can often be detected in groups of persons who have worked with asbestos (1). However, it is often so low (a few per cent) that it does not cause symptoms and does not meet the criteria for a clinical diagnosis of asbestosis.

Mesotheliomas of the pleura or peritoneum are highly attributable to asbestos. According to some data 50–70% of all persons with mesothelioma have been occupationally exposed to asbestos. The diagnosis of mesothelioma is difficult and varies in different parts of Sweden. There is no panel of pathologists reviewing the cases. However, the cases reported to the Cancer Registry are subject to review before they are accepted in the statistics of the Registry. The cancer incidence from that registry can therefore be considered as a minimum estimate of the true rates. There has been a steady increase in the morbidity rate among men, the rate among women having a more stable trend. Peritoneal mesotheliomas are much rarer and there is no obvious time trend or difference between males and females. In some occupational groups the risk of mesothelioma seems to be similar to that found in other countries. Insulation workers are at high risk and one study indicated that peritoneal mesothelioma was more frequent than pleural mesothelioma (4). This is in agreement with experiences from the U.S. and Canada. Shipyard workers, some asbestos cement workers, workers in rail-road workshops and some other occupational groups are also at increased risk of pleural mesothelioma (5–8).

While the etiological contribution of asbestos to pleural plaque, asbestosis and mesothelioma is high, it is much more difficult to estimate the etiological fraction of asbestos for lung cancer in the general population. The risk is known for some occupational groups like insulators, asbestos cement workers, locomotive repairs, shipyard workers but there is little information on the size of the population at risk. The estimation is further complicated by the interaction between smoking and asbestos and the strong dose-response relationship of smoking and lung cancer. For highly asbestos exposed groups with ordinary smoking habits asbestos exposure seems to cause more cases of lung cancer than of mesothelioma; however, for persons with low exposure to asbestos the number of cases of lung cancer and mesothelioma seems to be of similar size.

HEALTH EXAMINATIONS

Health screening of workers currently exposed to asbestos is mandatory in Sweden. Pre-employment examination consists of chest x-ray, spirometry and a clinical examination. Regular check-ups include only chest x-ray at 10, 15, 20 etc years after the onset of asbestos exposure. Spirometry is recommended but not mandatory. There is no regular screening of persons formerly exposed to asbestos. However, the government has offered a free health examination to anyone considering oneself exposed to asbestos. The first offer was between 1977 and 1981 and there is a current offer between 1986 and 1988. Between 1977 and 1981 about 60 000 persons were examined but the outcome has not been systematically registered. In Gothenburg 4 265 persons were examined at onc hospital from 1977 to 1981. They belonged to different occupations: car mechanics, repairmen, a few construction workers, mariners etc, but there were few shipyard workers. They were all given a chest x-ray, spirometry and a questionnaire. Those who were suspected of being ill were further examined by means of other physiological tests, biopsies etc. Pleural plaque was the most common disease detected in this health control (242). This was a cross-sectional screening and four cases of lung cancer was a high number in such circumstances. Still, it is considered to be just a random phenomenon. Altogether five cases of asbestosis were diagnosed and no mesothelioma. We do not know whether the examined group was at any detectable increased risk of lung cancer. These free health control programmes are not meant to decrease the asbestos-associated morbidity (secondary prevention), but to inform the patient about the risk of asbestos as well as about that of smoking. There is obviously a great need for information; some patients tend to think that pleural plaques and mesothelioma are similar diseases.

SUBSTITUTES

In Sweden asbestos has generally been substituted by man-made mineral fibres (MMMF). The risk from the use of those fibres is considered to be far less than the risk of asbestos. Measurements show that working with MMMF causes far less dust than using asbestos for the same purpose. The current LV for man-made mineral fibres in Sweden is 2 fibres/ml. There is almost no use of other natural crystalline fibres.

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Sažetak

BOLESTI VEZANE UZ AZBEST U ŠVEDSKOJ — OPĆI PREGLED

Donedavno je azbest u Švedskoj bio u širokoj upotrebi. Njegova je upotreba gotovo zabranjena 1986. godine, te je uglavnom potpuno zamijenjen umjetnim mineralnim vlaknima. Fatalna azbestoza je rijetka, a ranih osamdesetih godina u prosjeku je troje ljudi godišnje umiralo od azbestoze. Pleuralni mezoteliom je u porastu te se godišnje otkrije 80 slučajeva u muškaraca i 15 u žena. Među starijim muškarcima vrlo je čest nalaz pleuralnih zadebljanja (plakova). Ne zna se koliki je broj karcinoma pluća u Švedskoj do sada uzrokovan izloženošću azbestu. Osobe trajno izložene azbestu trebaju biti pod liječničkom kontrolom te je stoga uvedena besplatna kontrola za svakoga tko smatra da je u prošlosti bio izložen azbestu.

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