

MULTIPLE FACTORS: CIGARETTE SMOKE ASBESTOS INTERACTION OTHER DISEASES

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Data from many countries show that lung cancer rates are greatly increased for asbestos workers who smoke cigarettes, well above the rates for cigarette smokers who are not exposed to asbestos. As dust control during the late 1930's and 1940's reduced the early deaths of workers in their forties and early fifties from asbestosis, cor pulmonale and other complications, more have apparently survived to die later of lung cancer (1). Doll in 1955 (2) found the incidence of pulmonary cancer to be ten times greater than expected. Between 1924 and 1947, 14.7% of male workers in Britain died of pulmonary neoplasms; by 1954 the figure was 20% and in 1963 had increased to more than 50% (3). A higher prevalence of carcinomas is found in workers with more advanced asbestosis on chest X-ray examinations and there may be a higher proportion of adenocarcinomas, originating more peripherally in the airways (4).

The relative importance of the two risk factors can be summarized as: non-smoker, no asbestos exposure is lowest; then non-smoker with asbestos exposure; then smoker with no asbestos exposure; and smoker with asbestos exposure is highest.

There is also a measurable increase in incidence of gastro-intestinal cancer in asbestos workers of which colon cancer, at 1.61 to 3.17 times expected rates, makes up the large proportion and appears to be independent of cigarette smoking. However, esophageal cancer is increased and is influenced by cigarette smoking. Laryngeal cancer has also been reported as increased. Although two reports of hematological tumors and lymphomas have been published, no increase has been found in these tumors in larger series. Asbestosis appears also related to cigarette smoking, that is smoking increases the roentgenographic signs of pulmonary fibrosis (5), and appears to influence asbestosis deaths 3:1 (6).

A relationship with rheumatoid arthritis has been seen although it is not as strong as occurs with silicosis or with coal workers' pneumoconiosis. Among 80 asbestos workers, 28% show antinuclear factor and 27% rheumatoid factor (7).

Tuberculosis was thought to be influenced by asbestos exposure because of high rates in the 1930's. Of 82 workers with asbestosis, 36% had tuberculosis compared to 56% of 702 with silicosis (8). This apparent relationship has been erased in the past two decades with the general decrease in tuberculosis. Other infections seem to bear no relationship to asbestos exposure.

There is no apparent increase of risk for coronary heart disease or for hypertension among asbestos workers which is not accounted for by cigarette smoking.

References

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