Pulmonary Effects of Asbestos and Asbestos Substitutes

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- Abstract-

In Korea, asbestos has started to be produced about 60 years ago and used in 55 years ago. But the production of asbestos interrupted in 1984, asbestos imports is continuously increasing about 90,000 tons in 1995. Small scale factories has been expanded so that asbestos textile were 15 companies with 214 workers, construction materials were 9 companies with 376 workers and brake lining were 33 companies 637 with workers. As for exposed concentration to asbestos dusts was continuously reduced. Though the exposed concentration to asbestos dust was improved considerably, there was many small scale factories of asbestos textile and brake lining over 2 fiber/cc of government permissible standard.

The effects of asbestos and glass fiber on the respiratory health has been investigated in 397 workers from 6 asbestos textile, 9 brake lining, 2 construction

materials and 5 glass fiber. The subjects were 103 textile workers, 85 brake lining workers, 40 construction materials workers and 159 glass fiber workers. The subjects were grouped according to exposed concentration and tenure, and smoking habits were considered also in the analysis. Standard respiratory questionnaire was by trained interviews. Chest radiography, pulmonary function tests were done. Environmental measurements at the breathing zone were carried out to determine levels of asbestos fiber and glass fiber. Textile and brake lining factories were over 2 fiber/cc. As textile and brake lining workers has higher prevalence of pulmonary function disorder, also pleural thickening, chronic bronchitis, pleural calcification, interstitial fibrosis and bronchiectasis on radiographic finding. There were 1 asbestosis and 7 suspected asbestosis in textile, 2 suspected asbestosis in brake lining. Exposure to asbestos dusts was significantly associated with lowered FEV_1 and obstructive pulmonary function changes according to increased exposure levels and tenure. Exposure level of construction materials and glass fiber manufacture factories were not exceeding than textile and brake lining, also there was no asbestosis and pneumoconiosis caused glass fiber.