

on dry pulmonary tissue. In correlating pathology of pneumoconiosis with silica content, it is important to differentiate between free crystalline silica and total silica. "Microscopic studies which utilize polarized light for identifying a birefringent crystalline substance are unreliable unless accompanied by proper techniques to identify at least the shape of the crystal, its precise angles of extinction, and index of refraction." The quantity of a mineral substance in the lung does not always parallel the severity of tissue changes in the lungs of individual cases. Caution is suggested when using analytical means in establishing a diagnosis of pneumoconiosis. As in any differential diagnosis, analytical chemical data should be supported with confirming occupational and medical history, clinical laboratory findings, roentgenographic studies, and gross and microscopic pathology.

-- Public Health Eng. Absts.

- 258 Byssinosis. L. Muller. J. B. M. Vismans and E. J. Van Blommestein. Ned. Tijdschr. Geneesk. 106, 421-427 (Mar. 3, 1962).

At Enschede, Holland, a survey of byssinosis was carried out among 770 workers employed in 9 cotton mills. Seventy-one (9.2%) of the workers had grade 1, 9 grade 2, and none grade 3 of the disease. Four of 163 (2.5%) persons working in the cotton room, 57 of 409 (13.9%) working in the carding rooms and 19 of 198 (9.6%) working in the separating rooms had byssinosis. Symptoms usually appeared after 16 years of exposure although in 10% of the cases only 5 had elapsed. Individual sensitivity was a feature as some workers had been exposed to the cotton particles for 40 years without any untoward effects. To assess the incidence of byssinosis in other divisions of the mills 4 groups of 100 workers in each from the prespinning, spinning, weaving and textile refining divisions had determinations of vital capacity and one-second values made on a Monday. The one-second values were expressed as a ratio of normal vital capacity and plotted against years of exposure. In all divisions a diminishing Tiffeneau value in proportion to the years of exposure was obtained. Of the 100 persons in the prespinning mills, 15% gave a positive history of byssinosis but among the weavers, spinners and refiners this was not obtained. The atmosphere of the carding rooms contained 7 mg. of particles per cubic meter and of these 73.9% were less than 5 microns in size. Fine particles in this division were 7.6 times as high as in the ringspinning mills where the total quantity of particles was 2.3 mg. per cubic meter.

-- Cond. from Bull. Hyg.

- 259 Pulmonary Function Measurements in an Industry. A Follow-Up Study of 38 Diatomite Workers on the Job. H. L. Motley. Arch. Environmental Health 6, 166-177 (Jan. 1963).

Follow-up pulmonary function studies have been obtained in 38 diatomite workers on the job after 3 to 5 years. The original group of 98 workers was selected as a representative cross-section of the diatomite industry on the basis of age, chest x-ray appearance, exposure time, and type of work. Significant progression in pulmonary function changes were present in 14 of 38 cases restudied and was of a severe degree in 4 of the group. A slight improvement was noted in one case. The decrease in the arterial blood oxygen saturation was the consistent change noted in all 14 cases. The decrease in the exercise oxygen uptake was the second best measurement, and changes on the ventilatory side (timed vital capacity and maximal breathing capacity (MBC)) were of value in 2 cases. The changes observed in the residual air were not a significant factor in the evaluation of progression in this study. The follow-up study revealed no progression in the x-ray appearance in the workers, suggesting that the dust control program in the plant is effective. Routine annual chest x-rays are essential. All cases developing x-ray changes should have complete pulmonary function studies and evaluation. Spirographic recordings appear inadequate to detect significant early changes. The arterial blood oxygen saturation both at rest and with exercise appears much more valuable. The exercise oxygen uptake was helpful.

-- Author's summary

- 260 Pneumoconiosis in the Ball-Clay Industry. C. T. Brown and O. D. Beresford. Lancet 2, 712-714 (Oct. 6, 1962).

Six cases of pneumoconiosis in the ball-clay industry are reported. The condition is apparently innocuous, but its true nature is not clear. It does not seem to be a true silicosis, but it may be a kaolinosis, a mixed dust fibrosis, or simply a nodular collection of inert dust in the lungs.

-- Public Health Eng. Absts.

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