

SP-02 **PREVALENCE OF SILICOSIS IN STONE CARVING AND SANDSTONE MINING INDUSTRY IN RAJASTHAN**

Prahlad K Sishodiya. *Consultant, Expert in Silicosis, Directorate of Specially Aabled Persons, Department of Social Justice and Empowerment, Government of Rajasthan, Jaipur – 302006, India*

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Introduction Silicosis is a debilitating but totally preventable occupational lung disease caused by inhalation of silica dust. In Rajasthan, the western most state of India, it is estimated that about 3.0 million workers are employed directly or indirectly in mining and mineral processing and another 3.2 million workers are employed in construction industry who are at the risk of developing silicosis.

Material and Methods The state government has formulated Rajasthan Policy on ‘Pneumoconiosis including Silicosis Detection, Prevention, Control and Rehabilitation – 2019’. The government has also started an online portal for registration, certification and disbursement of relief to silicosis affected persons. The certification is carried out at Community Health Centre or District Hospital based on medical examination and chest radiograph. On certification, the payment of relief to the victim is made from centralized ‘Pneumoconiosis Fund’ through an auto-approval process.

Results On portal, 192,143 persons have registered for silicosis screening examination and 23,436 cases of silicosis including 6876 cases of deaths have been certified. Analysis of data from 4977 cases of silicosis including 741 cases of deaths showed that detection of silicosis among districts with preponderance of stone carving industry was much higher and prevalence was highest among 36 to 40 age group with mean age of occurrence of silicosis being 40.1 ± 10.6 years and for death due to silicosis was 39.7 ± 7.1 years. There is also significant difference in trends in occurrence and death due to silicosis among stone carving and sandstone mining industry.

Conclusions The prevalence of silicosis in stone carving and sandstone mining is much higher than generally believed and it higher in stone carving than sandstone mining. There is urgent need to adopt dust control measures to prevent silicosis.

SP-03 **OVERVIEW: CURRENT SITUATION OCCUPATIONAL ASBESTOSIS RELATED DISEASES IN INDONESIA**

Ade Dwi Lestari, Nany Hairunisa. *Occupational Health, Faculty of Medicine, University of Trisakti, Indonesia*

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WHO statement on asbestos is very clear that asbestos is 1 of 10 substances of major global health concern. Approximately 125 million people worldwide are currently exposed to asbestos at work and at least 107,000 mortality per year caused by asbestos related lung cancer, mesothelioma, and asbestosis result of occupational exposure. Asbestos has been imported to Indonesia legally since the 1950. Indonesia is among top five of country in the world still used asbestos. Consumption of asbestos in Indonesia increased rapidly until 150,000 tons in the 2000s.

Case of asbestos related disease (ARD) is few recognized and diagnosed. Several studies estimated that Indonesia should found hundred to thousand cases per year. Currently only 6 case of non-malignant asbestos related diseases was diagnosed and approved as an occupational disease by the Indonesia government and being compensated by National Employees Social Security System. Indonesia indeed prohibits the use of crocidolite asbestos since 1985 but here is no regulation that prohibit the use of chrysotile asbestos. The threshold limit value for asbestos in Indonesia is 0.1 fiber/cc. Low limit value doesn't mean low case of diseases. Significant hidden burden of ARD already exists caused by abundant asbestos use.

The most efficient way to eliminate asbestos related diseases is to stop the use of all types of asbestos. There are safe and affordable viable substitutes for asbestos containing material, that are already used in countries that have banned asbestos. It is urgently required awareness and cooperation from all stakeholder including government, employers, worker, union, researchers, scientist, doctor and society.

SP-04 **SILICA, COAL, AND AUTOIMMUNE DISEASE**

Paul D Blanc. *Division of Occupational, Environmental and Climate Medicine, University of California, San Francisco, USA*

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The associations between both coal mining and non-mining silica exposure and rheumatoid arthritis (RA) have been well established since the 1950s. Recognition of coal mining-caused RA, also known as Caplan's syndrome, at first eclipsed other occupational exposures. In the following 50 years, however, it has become evident that silica exposure outside of coal mining carries risk not only of RA, but of a range of additional autoimmune conditions, including systemic sclerosis, system lupus erythematosus, and forms of vasculitis. A series of epidemiologic investigations from Sweden have delineated exposure risk for RA across a range of occupations. These have included analyses of RA serologic status. Although many non-silica work exposures have been associated in those analyses with seropositive but not seronegative RA, silica risk appears to be independent of serologic status. Recently, the recent outbreak of artificial stone silicosis has revealed concomitant autoimmune disease in case series from Israel to Australia. Despite the attention given to occupation and autoimmune disease around the globe, relatively little attention had been given in North America. To address this, we have carried out a series of population-based studies of RA in areas of the United States that have concentrations of coal mining or hard rock mining. Those investigations have shown that mining and non-mining occupational silica exposure (the latter, for example, in foundry work or sandblasting) are associated with two to more than three-fold or greater odds of RA among males over age 50. Because these exposures are relatively common in those regions, the estimated population attributable risk can be substantive. In summary, occupational exposures in mining (as well as in other sectors) carries import risk for autoimmune disease. This should be taken into account in occupational health care delivery, including in surveillance schemes.