

ABSTRACT

EFFECT OF RESPIRABLE SILICA DUST EXPOSURE TO THE INTERFERON GAMMA (IFN- γ) LEVELS, LUNG FUNCTION AND HEALTH COMPLAINTS IN SANDBLASTING WORKERS

Sandblasting is a metal working process by way of firing a silica sand of high pressure to the surface of the ship. These jobs produce a silica dust can cause inflammation of the respiratory tract, decrease lung function and affect serum levels of interferon- γ . The purpose of the study was to analyze the Effect of silica dust exposure toward interferon- γ , lung function and health complaints in Sandblasting workers. Researchers study design using analytic observational with cross sectional design. Population in this study were all sandblasting workers PT. Dock and Shipping Surabaya. As a comparison group is administration staff. The study sample consisted of 8 sandblasting workers and 8 administration staff. Technique of data collection was done by conducting interviews, personal dust measurement, workers took blood samples and perform spirometry test. Blood serum taken aims to determine the level of interferon- γ and lung function measured aim to determine the condition of the lungs workers. interferon- γ level is dependent variable. Meanwhile respirable silica dust as independent variables. Age, duration of work activity, smoking habit and used of personal protective equipment as a confounding variable. The finding of the study indicated that the average of workers was 31,87 years old and administration staff 41,87 years old. Light smokers were 18,75% and moderate smokers were 81,25%. The average of workers in duration of work activity was 10.62 years and unexposed 23,12 years. Worker sandblasting of 100% use of personal protective equipment during the work. The average respirable dust in the exposed group was 3.96 and unexposed group was 0.12. The average levels of interferon- γ in the exposed group was 231,37 and unexposed group was 66.25. the average of FVC in the exposed was 80,98% and unexposed group was 93,4%. Respirable silica dust exposure affect the increased interferon gamma levels in blood serum and lung function decline (multiple regression test $p < 0,05$), and effect the health complain.

Keywords : Silica Dust, interferon- γ (IFN- γ), lung function, health complaint, sandblasting workers

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