

LUNG CANCER INCIDENCE AND SURVIVAL IN CHROMIUM EXPOSED INDIVIDUALS

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Workers chronically exposed to hexavalent chromium have higher incidence of lung cancer. Our study investigates incidence of lung cancer types, age of onset of the disease and surviving time among chromium exposed workers (smelters, tapers, crane operators) in comparison to non-exposed persons. We analysed 77 chromium exposed workers and 104 male controls with diagnosed lung cancer. The average exposure time among workers was 18.38 years (range 1- 41 years). It was found out that chromium exposure decreases the age at the onset of the disease of 4.18 years (65.51 years in control; 61.33 years in exposed group). Significant difference between the age at the onset of the disease was found between smokers (65.1 years) and non-smokers (68.6 years) ($P=0.008$) in the control group. Non-exposed non-smokers had explicitly higher age at the onset of the illness in relation to other groups. In exposed group the significant effect of smoking on the age at the diseases onset was not found ($P=0.775$). Small cell lung carcinoma (SCLC) forms 25.71% of all cases in chromium exposed workers and 16.34% in non exposed individuals. The survival time of patients with NSCLC and SCLC within non-exposed were 12.33 and 17.75 month respectively and in exposed group 14.8 and 4.44 month respectively. No correlation was found between the age at the diseases onset and time of exposure. Occupational exposure to chromium was identified as an important risk factor of lung cancer even overlaying effect of smoking. Both chromium exposure and smoking decrease the age at the diseases onset. Higher percentage of SCLC was found in chromium exposed individuals.

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