
LONG TERM MORTALITY STUDY OF VINYL CHLORIDE AND POLYVINYL CHLORIDE WORKERS IN A JAPANESE PLANT

Y. MASUDA

Health Administration Center, Keio University, Tokyo, Japan

In order to investigate the health problem resulting from the past vinyl chloride (vc) exposure, a long term mortality study of vc workers and controls was carried out.

All number of workers employed in vc and pvc plant amounted to more than 304 since the beginning of vc production. A total of 304 workers exposed to vc for more than 1 year after 1949 (vc workers) and 277 men employed at other facilities (controls) have been traced and deaths from 1949 through 1975 were ascertained. Of the vc workers, 218 men experienced operation of polymerization or reactor cleaning and the others were assigned to vc synthesis, shipping or maintenance. The concentration of vc in the working environment was controled under 500 ppm for about 5 years before 1960 and since then under 250 ppm until 1974.

The expected number of deaths were calculated on 5-years age/time cause specific mortality for Japanese males and 5-years age/time classified number of workers with person years from 1956 to 1975. Distribution of cause of deaths was tabulated using a copy of death certificates and information from doctors in charge or families.

The observed number of deaths from all causes almost agreed with what was expected in vc workers and controls. The ratio of observed to expected ranged 0.44-5.00 for vc workers and 0.45-4.29 for controls. 38% of excess death from cancer was observed in vc workers without statistical significance. Deaths from liver cirrhosis were 5 times as many as expected, which did not suggest the origin related to the vc exposure comparing with the ratio among controls. Anyhow prevention of liver cirrhosis is noted as an important problem among all these workers.