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MORTALITY STUDY IN TWO ITALIAN OIL REFINERIES: EXTENSION OF THE FOLLOW-UP UP TO 2006

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Objectives A large number of epidemiological studies addressed the issue of carcinogenicity of occupational exposures in petroleum refining. We present the results of the extension of the follow-up as of December 2006 of two Italian Refineries (refinery A and B). The mortality of the two cohorts was previously examined up to 1991 and 1999 respectively.

Methods Standardised mortality ratios (SMR) and 95% CIs were calculated using as reference the regional mortalities (Lombardy and Latium) specific by age and calendar period. Analyses by duration of employment, latency, year of first employment were performed.

Results The main findings in refinery A were a twofold increased mortality from brain cancer and leukaemia; the leukaemia excess was particularly elevated among subjects employed before 1969. No consistent trends by duration of employment or latency was observed for brain cancer. In refinery B, increased risks for lung cancer, non-Hodgkin's lymphoma (NHL) and brain cancer were detected. All deaths from brain cancer (3, SMR 5.0, 95% CI 1.6 to 15.6) and NHL occurred after 20 years of latency (4, SMR 5.2 95%CI 1.9 to 13.8). The lung cancer mortality was elevated among workers with duration of employment 10–19 years (SMR 2.8, 95%CI 1.7 to 4.6).

Conclusions The main finding of an elevated mortality from lymphoemopoietic cancers (leukaemia and lymphoma) is in agreement with other studies in refinery workers. The observed excess is limited to workers employed before 1969. Exposure to benzene might be a plausible explanation. The increased lung cancer mortality cannot be entirely explained by confounding by smoking.