

TWENTY-YEAR MORTALITY FOLLOW-UP OF THE SEVESO POPULATION

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Introduction

The 1976 Seveso accident in Italy exposed a large territory to substantial amount of TCDD. Based on soil contamination, three zones were identified: zone A (very high contamination), zone B (high), zone R (low-scanty).

Blood concentrations of TCDD were measured in samples of the population, and confirmed the usefulness of zone categorization (1,2).

The population living in the area is being monitored for long-term effects: in particular, a follow-up system of mortality and cancer incidence is being maintained (3,4,5). Here we report the results of the mortality follow-up covering the period 1976-1996.

Materials and Methods

The study cohort comprises all people residing in the area at any time from the day of the accident (July 10, 1976) to December 31, 1986. The cohort so defined comprises around 800 inhabitants in zone A, 6,000 in zone B, and 40,000 in zone R.

A non-exposed population of about 235,000 subjects living in the surrounding territory (named zone non-ABR) was adopted as reference.

A database recording detailed individual residential history is being maintained. Information on vital status and cause of death is collected from the Population Offices of the towns of subjects' last residence.

Zone, gender and cause-specific mortality rates were calculated. Subjects contributed person-years of observation from time of entry in the cohort to time of death or end of follow-up (December 31, 1996), and were assigned to the zone at entry in the follow-up.

Rate Ratios and their 95% confidence intervals, adjusted for quinquennia of period and age were calculated through Poisson regression modelling using the statistical package STATA. Due to small number of deaths in zone A, the two most polluted zones (A and B) were grouped together.

Results and Discussion

Follow-up was about 99% complete. In both genders, the all cause mortality in the contaminated areas (A and B, R) was similar to that of the reference (non-ABR) zone. Males in zones A and B showed an elevation of mortality from rectum (more than twofold), and lung cancer (30%). Lym-

Epidemiology: Recent Results and Research Paths

phatic and hematopoietic neoplasms (28 deaths) showed a 70-80% increase in both genders. Among non-malignant causes, chronic ischemic heart diseases showed an excess risk in males. Mortality from diabetes and chronic obstructive pulmonary disease was elevated among females. The findings regarding neoplasms are consistent with those of the concurrent cancer incidence study; they are also in agreement with the results of carcinogenicity experiments and of epidemiological investigations in occupational cohorts exposed to TCDD in different countries (6).

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