TRACY U: THE FRENCH COHORT OF URANIUM CYCLE WORKERS

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Context and objectives

The objective is to set up a longitudinal cohort for investigating the risk of mortality from cancer and non cancer diseases (mainly cardiovascular) in relation to uranium and other occupational exposures.

Materials and Methods

Population:
- Workers involved in the French nuclear uranium cycle employed by AREVA and subsidiaries or CEA. The cohort is limited to workers employed for at least 6 months between 1958 and 2006.

Occupational exposure:
- Assessed by two complementary methods:
  - Individual measurements (from medical files): radio-toxicology analysis for internal doses assessment and individual dosimeters for external radiation exposure.
  - Plant-specific Job-Exposure Matrices: assessment of a score based on quantity and frequency of handling (both ceded from 0 to 3) for the different uranium compounds, chemicals agents, physical parameters (heat, noise) at each place of work, taking into account the time variations.

Other risk factors (from medical files):
- Tobacco consumption, BMI, blood pressure, blood cells count and other blood bio-chemical parameters (cholesterol, blood glucose ...)

Vital status and causes of death:
- Collected from the French National Mortality registers.

Results

Identification and administrative information have been collected for each company and the files have been merged. The cohort TRACY contains 12,657 workers from COMURHEX (n=1,597), EUROIDIF (n=2,014), AREVA NC (n=2,879), SOCATRI (n=587), FBPC (n=1,962), MELOX (n=779) and CEA (n=2,839).

Research of vital status and causes of death is ongoing.

Discussion and Conclusions

Data collection for the 12,657 workers is well progressing. This cohort will be very informative for the investigation of uranium related risks, taking account of multiple exposure patterns of the workers involved in the nuclear fuel cycle. It will allow investigating cancer and non cancer effects, in particular cardiovascular risks. As a pilot study, an analysis of uranium exposure effects on cancer mortality was performed among a sub-cohort of the AREVA NC Pierrelatte plant workers, which provided promising results (I. Guseva-Canu and al., OEM 2012, UJHE 2009 and 2010, Health Phys. 2010, IAOEH 2009).