Differences in Mortality by Radiation Monitoring Status in an Expanded Cohort of Portsmouth Naval Shipyard Workers

Silver SR, Daniels RD, Taulbee TD, Zaebst DD, Kinnes GM, Couch JR, Kubale TL, Yiin JH, Schubauer-Berigan MK, Chen P-H

ABSTRACT

Studies of leukemia and lung cancer mortality at the Portsmouth Naval Shipyard (PNS) have yielded conflicting results. In an expanded cohort of PNS workers employed between 1952 and 1992 and followed through 1996, the all-cause standardized mortality ratio (SMR) was 0.95 (95% confidence interval, 0.93-0.96). Employment duration SMRs were elevated with confidence intervals excluding 1.00 for lung cancer, esophageal cancer, and all cancers combined. Leukemia mortality was as expected overall, but standardized rate ratio analyses showed a significant positive linear trend with increasing external radiation dose. The role of solvent exposures could not be evaluated. Findings differed by radiation monitoring subcohort, with excess asbestosis deaths limited to radiation workers and several smoking-related causes of death higher among nonmonitored workers. At PNS, asbestos exposure and possibly smoking could be nonrandomly distributed with respect to radiation exposure, suggesting potential for confounding in internal analyses of an occupational cohort.

Silver SR, Daniels RD, Taulbee TD, Zaebst DD, Kinnes GM, Couch JR, Kubale TL, Yiin JH, Schubauer-Berigan MK, Chen P-H [2004]. Differences in Mortality by Radiation Monitoring Status in an Expanded Cohort of Portsmouth Naval Shipyard Workers. *JOEM*, 46(7):677-689.