

LONG-TERM OUTCOMES AMONG 5-YEAR SURVIVORS OF CHILDHOOD AND ADOLESCENT CANCERS

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Background: Over the past 40 years, the probability of long-term survival has increased to approximately 70% for children diagnosed with cancer. As a result of this success, the long-term medical and psychosocial consequences of survivorship take on additional importance.

Objective: The initial analyses of the CCSS focus on mortality, subsequent cancers, reproductive outcomes, cardio-pulmonary disease, and health-related behaviors.

Design/Methods: We constructed a large, diverse, well-characterized retrospective cohort of 5-year survivors drawn from 25 cancer centers in the United States and Canada.

Results: A 10.8-fold excess in mortality was found among the 20,276 5-year survivors in the cohort (95% C.I. 10.3-11.3). Sixty-seven percent of deaths in the cohort resulted from the original cancer; however, excess mortality was also found for subsequent cancers [Standardized Mortality Ratio (SMR)=19.4], cardiac (SMR=8.2), and pulmonary (SMR=9.2) causes. Cumulative mortality for the cohort is 6.4%, 9.3%, 11.4% and 14.0% at 10, 15, 20, and 25 years post-diagnosis. 314 subsequent invasive cancers occurred in the cohort [Standardized Incidence Ratio (SIR)=6.38] (95% C.I. 5.69-7.13). The greatest excess occurred among survivors of Hodgkin's Disease (SIR=9.7), but excess risk was noted for all primary diagnoses. Secondary cancers of the bone and breast occurred at greatest excess (SIRs 19.1 and 16.2, respectively). At 20 years post-diagnosis, the cumulative risk of subsequent cancer was 3.2%. Among 6,462 sexually active members of the cohort, 3,162 reported 6,462 pregnancies. Offspring with birth weights <2500 grams were associated with exposure to pelvic radiation among female survivors. Pregnancies among male survivors were less likely to result in live births (versus sibling controls) and more likely to result in female offspring. Among 9,709 survivors over age 18, 28% reported smoking and 17% were current smokers. Members of the cohort were more likely to smoke than expected (Observed: expected ratio 0.72, 95% C.I. 0.69-0.75) based on age-, sex- and race-standardized U.S. rates.

Conclusions: The CCSS, which is funded as a resource grant from the National Cancer Institute, provides a unique opportunity to investigate issues of importance among survivors and health professionals.