

RISK FACTORS FOR BREAST CANCER (BC) IN WOMEN FROM THE CHILDHOOD CANCER SURVIVOR STUDY (CCSS). L.B. Kenney, L. Diller, D. Friedman, J. Neglia, Y. Yasui, A. Mertens, P. Inskip, A. Meadows, L. Robison. Dana Farber Cancer Inst., Boston, MA, Children's Hosp. and Med. Ctr, Seattle, WA, Univ. Minnesota, Minneapolis, MN, Fred Hutchinson Cancer Res. Ctr., Seattle, WA, National Cancer Inst., Bethesda, MD, Children's Hosp. of Philadelphia, PA.

Women survivors of childhood cancer have an increased risk for BC. Non-treatment related risk factors for BC after childhood cancer have not been defined. From the 5838 women within the CCSS cohort we identified 70 cases of pathology-confirmed BC, occurring among 60 women. Eligible CCSS cases included five-year survivors of childhood Hodgkin's Disease (HD), Wilms' Tumor (WT), Soft Tissue Sarcomas (STS), Bone Sarcomas (BS), Central Nervous System (CNS) malignancies, Non-Hodgkin's Lymphoma (NHL), Acute Leukemia (AL) and neuroblastoma, diagnosed between 1970-86. Risk of BC relative to the general population was evaluated using standardized incidence ratios (SIR) and 95% Confidence Intervals (CI). Poisson regression models were used to investigate age-adjusted rate ratios (RR) of BC associated with menstrual history, reproductive history, and other known BC risk factors. The median age of breast cancer diagnosis for the 60 women was 32 yrs. (range 20-47) and the median time from diagnosis was 16.7 yrs. (range 6.7-27.8). Survivors of HD, WT, STS, BS, CNS, NHL and AL all had a statistically significant increased risk for breast cancer (SIR 25.8, 45.5, 10.7, 10.8, 6.2, 9.6, 4.1, respectively). After accounting for prior treatment with chest radiation and chemotherapy, BC risk remained significantly elevated among HD (SIR=11.3, 95% CI=4.6,28.1), WT (SIR=30.3, 95% CI=8.2,111.4), STS (SIR=8.5, 95% CI=3.3,22.4), BS (SIR=8.2, 95% CI=3.2,21.0), CNS (SIR=5.9, 95% CI=1.5,23.4), and NHL (SIR=5.3, 95% CI=1.1,25.3). Accounting for family history of cancer in first-degree relatives did not appreciably alter the SIR for BC in survivors of CNS, BS and STS (SIR 5.1, 7.1, 7.4, respectively). Controlling for diagnosis, chest radiation, chemotherapy, and family history, we found the rate ratio of BC relative to the general population decreased significantly with time from diagnosis: 5-9 yrs. (RR=26.3, 95% CI=7.4-93.0); 10-14 yrs. (RR=14.6, 95% CI=7.2-29.9); 15-19 yrs. (RR=4.6, 95% CI=2.3-9.0); 20+yrs. (reference) and age at diagnosis (p for trend=0.03): 0-9 yrs. (RR=2.8), 10-14 yrs. (RR=1.9) and 15+ (reference). Women with prior pelvic radiation had a decreased risk (p=0.03) and there were no BC cases among women who had a bone marrow transplant (p=0.14). Original diagnosis is a major determinant of a woman survivor's risk for developing BC, after adjusting for chest radiation. Younger age at diagnosis of primary cancer was not protective, and a significant risk can be seen as soon as 5-9 yrs. after diagnosis. General population risk factors for breast cancer do not appreciable alter a women survivor's risk.