

Sarcoma, Infertility Rates Up in Cancer Survivors

BY FRAN LOWRY
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CHICAGO — The treatment for pediatric cancers is becoming more successful, but at a price—increased incidences of new primary sarcomas and female infertility, according to two reports by the Childhood Cancer Survivor Study presented at the American Society of Clinical Oncology.

Exposure to radiation at doses over 10 Gy was the most important risk factor for the development of new sarcomas in childhood cancer survivors, said Dr. Tara O. Henderson of the University of Chicago.

Overall, radiation treatment was associated with an odds ratio of 4.7 for the development of a subsequent primary sarcoma. In patients who received more than 50 Gy, the odds ratio jumped to 31.6, Dr.

Ovarian/uterine radiation doses greater than 1,500 cGy were associated with a greater than fivefold increased risk of not having been pregnant.

Henderson reported. The Childhood Cancer Survivor Study (CCSS) is a retrospective cohort study in 27 institutions in the United States and Canada. It includes 5-year survivors of leukemia, lymphoma, CNS

cancer, bone cancer, Wilms' tumor, neuroblastoma, or soft-tissue sarcoma diagnosed between 1978 and 1986, with diagnoses at less than age 21 years.

Dr. Henderson and her associates found 127 confirmed sarcomas in a cohort of 14,372 survivors. Each case was matched by age, sex, and time since primary cancer diagnosis with four CCSS cohort members without subsequent sarcomas.

Radiation doses at the site of the subsequent sarcoma were estimated by medical physicists at the University of Texas M.D. Anderson Cancer Center, Houston, and chemotherapy information was obtained from patients' medical records.

Sarcomas occurred a median of 13 years (range 5-33 years) from the original cancer diagnosis.

Exposure to certain chemotherapy agents was also associated with risk for subsequent sarcomas. For anthracyclines, the odds ratio was 2.5; for bleomycin 4.6, and for alkylators 1.9.

In the second CCSS study, Dr. Daniel M. Green, of St. Jude Children's Research Hospital in Memphis, Tenn., reported that adult female survivors of childhood cancer were significantly less likely to have ever been pregnant, compared with their female siblings who did not have cancer.

Of the 5,149 survivors, 1,506 (29%) had ever achieved pregnancy, compared with 613 of the 1,441 siblings (43%) (relative risk, 0.81).

The risk of ever being pregnant decreased as the maximum ovarian/uterine radiation dose increased. Radiation doses greater than 1,500 cGy were associated with a greater than fivefold increased risk

of not having been pregnant, Dr. Green reported.

The investigators also looked at chemotherapy agents and found that alkylator and cyclophosphamide exposure was significantly associated with less likelihood of pregnancy in a dose-dependent manner.

In her discussion of these studies, Dr. Smita Bhatia of City of Hope National Medical Center in Duarte, Calif., said they highlight a critical need to increase aware-

ness of the health problems faced by childhood cancer survivors—not only among the survivors themselves, but also among the primary physicians who provide most of their care.

One-third of childhood cancer survivors will have a life threatening complication 30 years out from diagnosis and treatment of their cancer, she said, citing a recent study (N. Engl. J. Med. 2006;355:1572-82).

"Primary cancer will continue to be treated with intense therapeutic exposure,

and invariably will result in late effects. We need to focus on genetic predispositions and other factors which contribute toward these late effects, so that we can identify high-risk populations, and screen them appropriately to prevent these complications from happening and decrease the morbidity and mortality associated with late events," she said.

Dr. Henderson, Dr. Green, and Dr. Bhatia all stated that they had no conflicts of interest to report. ■



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