

小児がんに対する放射線治療は乳がんリスクを上昇させる (Abstract # CRA9513)

小児がんに対し放射線治療を受けた若年女性は、これまで考えられていたよりも低レベルの放射線照射でも乳がんリスクは上昇し得る

Lower levels of radiation than previously thought can increase risk of breast cancer among young women treated for childhood cancer

第48回 American Society of Clinical Oncology学会で発表されたスタディの結果、小児期がんに対し胸部への放射線照射を受けた小児がん既往女性は若年期に乳がんを発症するリスクが、BRCA1/2変異を有する女性と同等に高いことが示された。またこの結果から、これまで考えられていたよりも多くの小児がん既往女性が影響を受けている可能性があることも示唆された。このスタディでは Childhood Cancer Survivor Study (CCSS) に参加した女性 1,200人余りおよび Women's Environmental Cancer and Radiation Epidemiology (WECARE) スタディに参加した女性の第一度近親者 4,570人のデータを解析した。WECAREは乳がんと診断され診断後1年以上生存している女性を組み入れた。総じて、小児がん既往者が50歳までに乳がんを発症する確率は24%であった。ホジキンリンパ腫既往者における乳がん発症率は30%であった。BRCA1変異を有する女性が50歳までに乳がんを発症する確率は31%であった。10~19Gyの低用量の放射線療法を受けた女性が40歳までに乳がんを発症する率は7%であり、20Gy以上の照射を受けた女性では12%であった。

Full Text

A study presented at the American Society of Clinical Oncology's 48th Annual Meeting finds that female survivors of childhood cancer treated with radiation to the chest had a high risk of developing breast cancer at a young age, comparable to that of BRCA1/2 mutation carriers. The findings also suggest that more survivors may be affected than previously thought.

Currently, screening guidelines for childhood cancer survivors recommend annual breast cancer screening for women who received moderate to high radiation doses of 20 Gray (Gy) or more to the chest as children, adolescents, or young adults. The researchers found that women treated with lower doses of chest radiation (10 to 19 Gy) also have an elevated risk of breast cancer at a young age, and may warrant screening as well.

"While radiation doses have decreased and techniques have improved, radiation is still an essential part of therapy for many childhood cancers," said Chaya S. Moskowitz, Ph.D., the study's lead author and an associate member and associate attending biostatistician at Memorial Sloan-Kettering Cancer Center, New York, NY. "The goal is to maximize the cure rates for childhood cancer while minimizing future health problems. For women treated with 20 Gy or more of chest radiation, the Children's Oncology Group recommends breast cancer surveillance with an annual mammogram and breast MRI, starting at age 25 or 8 years after the radiation (whichever is last). Our results suggest that young women treated with lower doses of radiation who are not currently being screened also have an elevated risk of breast cancer and might benefit from a similar screening strategy."

The study analyzed data from more than 1,200 women participating in the Childhood Cancer Survivor Study (CCSS) and 4,570 female first-degree relatives of participants in the Women's Environmental Cancer and Radiation Epidemiology (WECARE) Study. WECARE enrolled women who had been diagnosed with breast cancer and survived at least one year after their diagnosis.

For the childhood cancer survivors overall, breast cancer incidence by age 50 was 24 percent. Among those who survived Hodgkin's lymphoma, the incidence was 30 percent. Among women who were carriers of a BRCA1 mutation, the incidence of breast cancer by age 50 was 31 percent.

The women treated with the lower doses of chest radiation ranging from 10 to 19 Gy had a breast cancer incidence of 7 percent by age 40 compared with 12 percent for those women treated with 20 Gy or higher. There are currently about 50,000 women in the U.S. who were treated with >20 Gy who should be receiving annual breast cancer screening, as recommended by Children's Oncology Group.

The authors estimate that there are another 7,000-9,000 women in the U.S who were treated with 10-19 Gy for childhood cancer and might benefit from annual screening as well.

To follow up on this study, Dr. Moskowitz has received a grant from the National Cancer Institute to build a model to predict the risk of breast cancer in childhood cancer survivors treated with chest radiation.

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