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NEWS

RSNA Press Release

Mammography May Increase Breast Cancer Risk in Some High-Risk Women

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At A Glance

- Women at high risk for breast cancer, particularly women younger than 30, should weigh the benefits of screening mammography against the potential risks from low-dose radiation exposure.
- The American Cancer Society recommends annual screening with mammography and MRI for some high-risk women, typically beginning at age 30.

CHICAGO — Low-dose radiation from annual mammography screening may increase breast cancer risk in women with genetic or familial predisposition to breast cancer, according to a study presented today at the annual meeting of the Radiological Society of North America (RSNA).

"For women at high risk for breast cancer, screening is very important, but a careful approach should be taken when considering mammography for screening young women, particularly under age 30," said Marijke C. Jansen-van der Weide, Ph.D., epidemiologist in the Department of Epidemiology and Radiology at University Medical Center Groningen in the Netherlands. "Further, repeated exposure to low-dose radiation should be avoided."

Women who are at high risk for breast cancer need to begin screening at a younger age, because they often develop cancer earlier than women at average risk. However, according to Dr. Jansen-van der Weide and colleagues, young women with familial or genetic predisposition to the disease may want to consider alternative screening methods to mammography, because the benefit of early tumor detection in this group of women may be offset by the potential risk of radiation-induced cancer.

According to the American Cancer Society, there is strong evidence supporting the benefits of mammography for women after age 40. However, there are conflicting reports regarding the benefits of mammography for women under 40. Alternative screening methods such as ultrasound and MRI may be made available to younger women, but are generally used as an adjunct to mammography.

The American Cancer Society recommends that some women at high risk (greater than 20 percent lifetime risk) should have MR imaging and mammography every year, typically beginning at age 30.

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The researchers conducted an analysis of peer-reviewed, published medical research to determine if low-dose radiation exposure affects breast cancer risk among high-risk women. Out of 47 articles found on the topic, six were selected by the reviewers for inclusion in their analysis. Four studies looked at the effect of exposure to low-dose radiation among breast cancer gene mutation carriers, and two studies researched the effect of radiation on women with a family history of breast cancer. Using data from these studies, the researchers were able to calculate pooled odds ratios to estimate radiation-induced breast cancer risk.

The results showed that among all high-risk women in the study, average increased risk of breast cancer due to low-dose radiation exposure was 1.5 times greater than that of high-risk women not exposed to low-dose radiation. High-risk women exposed before age 20 or with five or more exposures were 2.5 times more likely to develop breast cancer than high-risk women not exposed to low-dose radiation.

"Our findings suggest that low-dose radiation increases breast cancer risk among these young high-risk women, and a careful approach is warranted," Dr. Jansen-van der Weide said.

She noted that this analysis is based on a small study sample and should be interpreted with caution. Dr. Jansen-van der Weide also pointed out that these results apply only to specific high-risk groups of women. Women at average risk were not assessed in this study.

In general, early detection with mammography and prompt treatment can significantly improve a woman's chances of survival. More than 90 percent of women whose breast cancer is found in an early stage will survive. For young, high-risk women and their doctors, it is important to weigh the benefits against any potential risk when making a decision about annual breast cancer screening with mammography.

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