Major global study reveals risk of breast cancer spreading to other parts of the body

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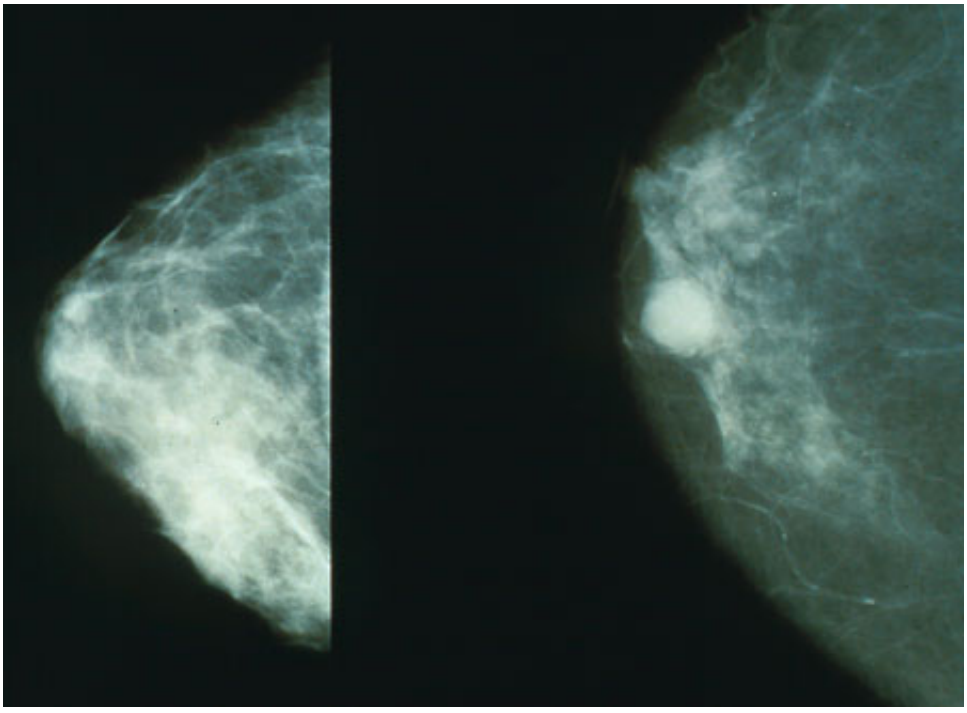

Mammograms showing a normal breast (left) and a breast with cancer (right). Credit: Public Domain

The risk of early breast cancer spreading to another part of the body ranges from 6% to 22%, according to the first results of a large and detailed global study of metastatic breast cancer presented at the Advanced Breast Cancer Sixth International Consensus Conference (ABC 6).

The study also shows that certain women face a higher risk than others, including women diagnosed with breast cancer at a younger age, those diagnosed with larger tumors at initial diagnosis and those with specific types of breast cancer, for example those called luminal B.

Around 2.3 million people are diagnosed with breast cancer each year around the world, but this is the first study of its kind to investigate how many of these patients go on to develop advanced breast cancer (ABC). Researchers say the new study sheds light on the extent of ABC, who is most at risk and what treatments are needed.

The research was presented by Dr. Eileen Morgan from the International Agency for Research on Cancer (IARC). She said, "Breast cancer is the most common form of cancer in the world. Most women are diagnosed when their cancer is confined to the breast or has only spread to nearby tissue. But in some women, the cancer will grow and spread to other parts of the body or come back in a different part of the body several years after the end of their initial treatment. At this point the cancer becomes much harder to treat and the risk of dying is higher. However, we don't really know how many people develop metastatic breast cancer because cancer registries have not been routinely collecting this data."

The new findings are part of a meta-analysis of the available literature. This means the researchers gathered together the data from as many different studies as they could find on breast cancer and whether it spreads to other parts of the body. By combining lots of data together, researchers can get the most reliable information on the overall risk of metastasis and how it varies for different groups of patients.

This analysis included tens of thousands women who between them took part in more than 400 studies from North and South America, Europe, Africa, Asia, and Oceania. This ongoing meta-analysis will allow the researchers to look at many factors and how they influence the risk of

metastasis, but they began by studying women's age when they were diagnosed with breast cancer, and the different types and stages of breast cancer. They also looked at whether rates of metastasis have changed over time.

The analysis shows that the overall risk of metastasis for most breast cancer patients is between 6% and 22%. This is a range that reflects the level of risk for half of the women in the analysis, with only a quarter of women having a higher risk and a quarter of women having a lower risk (known as the interquartile range). Researchers say the range is broad because the risk varies a great deal depending on different risk factors. For example, women first diagnosed below the age of 35 years, have a 12.7% to 38% risk of their breast cancer coming back and spreading to other parts of the body, while women aged 50 years or older have a risk of 3.7% to 28.6%. Dr. Morgan said: "This may be because younger women have a more aggressive form of breast cancer or because they are being diagnosed at a later stage."

Among the different types of breast cancer, women diagnosed with luminal B cancer (hormone-receptor positive and tends to grow faster) had a 4.2% to 35.5% risk of metastasis compared to 2.3% to 11.8% risk in women diagnosed with luminal A cancer (hormone-receptor positive and tends to grow slower).

The study suggests that rates of distant recurrence, meaning breast cancer coming back after initial diagnosis and spreading to other organs, have decreased over time from women first diagnosed in the 1970s and '80s to more recent diagnoses, but some of this may be due to the time lag between a first diagnosis of breast cancer and the appearance of metastases.

The researchers will continue to work with the data they have gathered to try and quantify how many women are living with advanced breast

cancer around the world, to look for other factors that may alter the risk and to monitor how the risk is changing over time.

Dr. Shani Paluch-Shimon, a member of the Scientific Committee for ABC 6, Director of the Breast Unit at Hadassah University Hospital, Israel, who was not involved with the research, said, "There has been a knowledge gap about how many people are living with advanced breast cancer around the world. This study is a step towards filling that gap. The researchers have already been able to give the first reliable estimate of how many breast cancer patients go on to develop advanced disease in contemporary cohorts and identify some of the groups, such as younger women, who face a higher risk. The second part of this study will define how cancer registries can collect adequate data about relapses so that we may know how many patients with metastatic cancer there are in each country.

"This information is, of course, important for patients who want to understand their prognosis. But it's also vital at a public health level for those of us working to treat and prevent advanced breast cancer to help us understand the scale of the disease around the world. It will help us identify at-risk groups across different populations and demonstrate how disease course is changing with contemporary treatments. It will also help us understand what resources are needed and where, to ensure we can collect and analyze quality data in real-time as this is key for resource allocation and planning future studies."

More information: Melina Arnold et al, From early to metastatic breast cancer: A systematic review and meta-analysis of distant recurrence rates [abstract OR 91]. *The Breast* (2021).

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