# Research shows biopsy of recurrent breast cancer can alter treatment

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For women with recurrent breast cancer, the treatment the doctor chooses is usually based on the properties of their original breast cancer. A group from Toronto has recently completed the world's first study that compared original breast cancer tumors with a biopsy of suspected tumors that recurred elsewhere in the body.

Researchers found that the biopsy resulted in 20% of the women having a significant change in their treatment. In some cases, this was a change in drug treatment and in others, the biopsy showed the woman did not actually have an advanced cancer, but a benign condition.

"The results show that cancers may change over time and not respond to treatment that was appropriate for the original cancer," says principal investigator Dr. Mark Clemons, a medical oncologist specializing in breast cancer in the Princess Margaret Hospital Cancer Program, University Health Network (UHN).

"These early findings are leading us in a new direction as we understand more about why some women don't respond to treatment. This knowledge will help us in our quest to always deliver the right treatment, to the right patient, at the right time."

The findings are published online today in the Annals of Oncology, Oxford University Press (Doi:10.1093/annonc/mdp028).

Dr. Clemons's study -- funded by a $100,000 research grant from the

Canadian Breast Cancer Foundation - Ontario Region -- evaluated 29 biopsies of accessible, recurrent tumors taken from women whose breast cancer had spread to bone, skin, lymph nodes, lung or liver.

Pathologists compared the results of the original cancer with the results of the new biopsy by analyzing the predictive markers that influence breast cancer tumor growth - estrogen, progesterone and Her2 status. The presence, absence and/or combinations of these markers become the map oncologists use to determine the most effective treatment for each patient.

In 15 cases, the diagnosis was unchanged; in 10 cases the markers in the cancer changed; in three cases, women originally felt to have metastatic breast cancer had benign disease, and in one case, the "recurring" cancer was a different type of cancer, lymphoma which is treated in a very different way to breast cancer.

Co-author Dr. Christine Simmons says: "For some of the women in the study, the findings dramatically altered their treatment and made a big difference in their lives."

Study participant Danielle Lee couldn't agree more. Two years ago, the then 30-year-old mother of a toddler and eight-month-old was coping with a diagnosis that her breast cancer had spread to her spine. The results of the new biopsy confirmed that there was no cancer in her spine.

"I was so grateful to be part of this study. It was a life-changing event for me during a difficult, dark time when I was trying to accept that I would die from breast cancer and my children would have to grow up without me," says Lee.

Beth Easton, Interim CEO of the Canadian Breast Cancer Foundation -

Ontario Region says: "Dr. Clemons's important findings may alter care for women with recurrent breast cancer, and ultimately save lives. With the support of our donors, the Foundation is committed to finding and funding groundbreaking research such as this, which will help to create a future without breast cancer."

Dr. Clemons says: "I am delighted that the CBCF - Ontario Region provided the financial support for this study, and continues to support our work in this important area of research." A second study with more women is under way.

Source: University Health Network