

Avoiding and treating heart problems following breast cancer treatment

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You have miraculously done it—you've survived the big "C". Life seems different now that you've overcome *the thing* that so many don't. You view this precious life in such a careful and unique way. You think—hope—you're truly in the clear. But then, somehow, your battles are not over as you later develop heart failure from your breast cancer treatments. But, how?

Chemotherapy and targeted therapies may put some patients at risk for heart disease while breast radiation may also affect cardiac function if the heart is included in the radiation field. Heart disease is the leading cause of non-cancer death among breast cancer survivors, according to Masonic Cancer Center clinical researcher Anne Blaes, MD, who heads the University of Minnesota's Cancer Survivor Program.



(Pictured: Dr. Anne Blaes, Masonic Cancer Center clinical researcher)

Masonic Cancer Center members are exploring innovative ways to detect, treat, and sometimes even predict and prevent heart problems before they occur. As a medical oncologist Dr. Blaes' clinical life is focused on delivering systemic therapy to treat cancer while much of her research focuses on cardiac complications of such therapy. She is currently evaluating the impact of aromatase inhibitors – anti-estrogen therapy used to treat breast cancer – on overall health.

Cardiologist Chetan Shenoy, MBBS, is approaching the question through imaging. He is using cardiovascular magnetic resonance imaging (CMR), to detect structural heart disease even in patients who show no symptoms and who have normal conventional screening tests.

Dr. Shenoy is using CMR to evaluate cardiac structure and function before patients begin cancer treatment with a goal of developing predictive tools to identify patients at most at risk for developing heart problems. He noted that the technique can detect even "silent" heart disease, which helps identify higher-risk patients.

When a patient has an increased risk of developing cardiac disease from cancer treatment Dr. Shenoy said, "We can think about alternative cancer treatment options, prescribe preventive cardiac medications, and monitor patients more closely to detect heart problems sooner rather than later."

In addition to their research, the U opened one of the first cardio-oncology centers in the Midwest three years ago allowing cardiologists and oncologists to more effectively collaborate to minimize cardiac risk in patients undergoing cancer treatment.

Suma Konety, MD, MS, head of the Cardio-Oncology Clinic, also conducts research aimed at improving cardiac outcomes for breast cancer patients. She established a cardiac-cancer registry that provides researchers extensive data about patients with these dual diagnoses. Such registries have been shown to improve patient outcomes.

Dr. Konety also collects blood from patients who develop decreased cardiac function to identify genetic markers that might have been predictive of their increased risk. Identifying such markers may enable physicians to proactively identify patients at increased risk prior to starting systemic therapy. Ideally, strategies, such as cardio-protective drugs, could be started to avoid this long-term complication.

In addition, Drs. Blaes and Konety are working together to improve breast MRI currently to capture both breast and cardiac imaging in one setting. In the I-SPY2 clinical trial, which tests investigational agents in the neoadjuvant setting, research MRI's are obtained at four separate points during the course of the systemic therapy. Combining breast imaging (to detect tumor response) with cardiac imaging (to identify decreased cardiac function) could improve both the quantity and quality of life of patients undergoing systemic therapy for breast cancer.

Perhaps the best way that breast cancer survivors can prevent heart problems is to stay informed about their health. "At our annual Cancer Survivorship Conference, we now include a special breakout session about heart health," said Dr. Blaes. Meanwhile, breast cancer survivors should do whatever they can to optimize heart health: don't smoke, maintain a healthy weight and cholesterol level, and get 150 minutes of exercise a week.