

2020-2021 Lorne Phenix Graduate Award Recipient



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Women diagnosed with breast cancer (BC) have among the highest 5-year survival rates of all cancers (88%). However, due to treatment and patient-related factors these women are at an increased risk for cardiotoxicity (e.g. heart failure [HF]). In addition, by the end of cancer therapy, women with BC can have a significant reduction in their cardiorespiratory fitness (CRF) which is considered a strong predictor of cardiovascular disease (CVD) mortality. As a consequence, CVD is considered a leading competing cause for death in older breast cancer survivors. My work will help determine pre- and intra-treatment patient, treatment, biomarker, and cardiac imaging related factors that identify those women at the highest risk of cardiotoxicity and reduced CRF early and 2 years post cancer treatment.

My study will include 136 women from an ongoing cohort study (EMBRACE-MRI) with human epidermal growth factor receptor-2 (HER2+) BC who are at high risk for HF due to their cancer treatment. Data is collected over 8 timepoints (pre-treatment, every 3 months during treatment and 2-year post- treatment) and includes demographics, CVD risk factors, cardiac medications, cardiac function (via cardiac MRI), clinical biomarkers, post-treatment CRF and self-reported measures of physical activity, symptom burden, and quality of life (QoL).

Using different analysis methods, I will identify clinical factors at baseline and their changes during treatment and its relationship to end of treatment cardiotoxicity, CRF and cardiac function and cardiac function and symptoms at 2-year follow-up. In a subgroup of women with complete physical activity data, I will determine whether high physical activity levels reduce the risk of heart dysfunction, heart failure symptoms, and worsening of QoL during treatment. My work will help identify high risk patients and allow doctors to institute targeted prevention strategies to reduce the risk of cardiotoxicity and its associated mortality.