

2019 Research Awards

Project Title:

Using Novel Technology to improve heart health outcomes in women undergoing radiation therapy for breast cancer

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Project Summary:

The early detection of breast cancer and improvements in treatment has led to an increased number of women surviving or living with breast cancer. A proportion of these women are at risk of developing complications related to their cancer treatment, including heart disease. This possibility is increased because breast cancer and heart disease share common risk factors. Attention needs to turn to interventions that can improve the quality of survival of these women.

Radiation therapy delivered to the breast reduces the risk of breast cancer recurrence and improves overall survival. However, an increased incidence of heart disease has been observed with older radiation therapy techniques. The introduction of new technology, especially Deep Inspiration Breath Hold techniques, significantly reduces the radiation dose received by the heart but does not completely stop it.

This study will evaluate new technology in assessing the heart with the aim of identifying changes in heart structure and function at an early, reversible stage. A prospective patient register will also be established to identify potential markers of heart damage. A review of patients who have received radiation therapy will determine whether radiation delivered to specific segments of the heart is associated with an increased risk of heart disease.

Research Benefits:

Nearly 90% of breast cancer patients survive five years post their date of diagnosis. For breast cancer survivors, heart disease represents the greatest single noncancer cause of death, accounting for 35% of deaths not caused by cancer in survivors who are 50 years of age or older. All cancer therapies, including chemotherapy, targeted therapy and radiation therapy have a direct effect on heart health. Older radiation therapy techniques have been associated with an increased risk of heart disease. The aim of this study is to use newer technologies to try and identify heart damage at an early stage when the damage can be reversed.

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