

Secondary Breast Cancer Risk by Radiation Volume in Women with Hodgkin Lymphoma

Jessica Conway¹, Yvonne Zheng², Tom Pickles³

1. Tom Baker Cancer Centre, University of Calgary 2. Cancer Surveillance & Outcomes, Population Oncology, BC Cancer Agency – Vancouver Centre 3. Radiation Oncology, BC Cancer Agency, Vancouver Centre, University of British Columbia

✉ **Corresponding author:** Jessica Conway, jessica.conway@bccancer.bc.ca

Categories: Radiation Oncology

Keywords: hodgkin lymphoma, secondary breast cancer

How to cite this abstract

Conway J, Zheng Y, Pickles T (September 08, 2015) Secondary Breast Cancer Risk by Radiation Volume in Women with Hodgkin Lymphoma. Cureus 7(9): a3

Abstract

Purpose: Female survivors of Hodgkin lymphoma (HL) who received radiotherapy (RT) are at elevated risk of secondary breast cancer (SBC). The objective of this study was to determine whether the risk of SBC is reduced in women with HL treated with smaller-volume RT.

Patients and Methods: We used the BC Cancer Agency Lymphoid Cancer Database to identify female patients treated for HL between January 1961 and December 2009. We excluded those aged 50 or older or who received solely subdiaphragmatic RT (n=9) or experienced progression of their HL after primary treatment. Risk estimates were compared using log-rank analysis according to radiation volume: mantle RT (MRT) +/- chemotherapy, involved field/involved nodal RT (IFRT) +/- chemotherapy, or chemotherapy alone (CO). A risk of premature menopause was identified for patients with exposure to alkylating chemotherapy or RT of at least 5 Gy to the ovaries.

Results: Of 734 eligible patients, 49 developed SBC. Characteristics of patients treated with MRT (n=231), IFRT (n=185) and no RT (n=318), are respectively: Age at diagnosis of HL median (range): 24 y (9-50); 28 y (4-50); and 27 y (4-50); Follow-up median (range): 24y (3-44); 12y (2-48), and 11y (1-45). The 20- and 25-year cumulative risk (Kaplan-Meier) for SBC was 9.3 (95% CI: 5.1-13.6) and 15.4% (95% CI: 9.7-21.0); 3.7 (95% CI: -0.3-7.7%) and 3.7% (95% CI: -0.3-7.7%); and 1.4 (95% CI: -0.2-3.1%) and 6.1% (95% CI: 0.6-11.6%) for MRT, SFRT and CO respectively (p=). On COX multivariate regression using a competing risk model controlling for death and patients lost to follow-up MRT was associated with a higher risk of SBC in comparison to CO (HR=3.33; 95% CI 1.55-7.15; p=0.002) and SFRT (HR=3.57; 95% CI 0.33-0.88; p=0.004). SFRT was not associated with a greater risk of SBC compared to CO (HR=0.93; 95% CI 0.33-2.63; p=0.89).

Conclusion: This study confirms that large volume RT (MRT) is associated with a markedly increased risk of SBC; however, smaller treatment volumes such as IFRT or INRT are associated with no greater risk of SBC than seen with chemotherapy alone.

Open Access

Abstract

Published 09/08/2015

Copyright

© Copyright 2015

Conway et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 3.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Distributed under

Creative Commons CC-BY 3.0