

Patterns of Radiotherapy Utilization in Metastatic Breast Cancer Patients: A retrospective review from Zimbabwe

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Background

Radiotherapy is an important component in management of metastatic breast cancer with utilization rates of around 50% in high income countries. In sub-Saharan Africa (SSA), utilization rates may be low, due to systems-level and patient-level factors, compromising overall clinical treatment utility. Utilization rates and patterns of delivery of radiotherapy have not been extensively studied in patients with metastatic breast cancer in SSA.

Research question

What is the radiotherapy utilization rate in patients with metastatic breast cancer at Parirenyatwa Radiotherapy Centre and what have been the patterns of delivery when incorporated in the management plan?

Methods

A retrospective chart review was conducted for all female patients with breast cancer who were seen at Parirenyatwa Radiotherapy Centre in Harare, Zimbabwe from January 2014 to December 2018. Demographics, pathology, staging, and treatment data were abstracted. In this analysis, only patients with metastatic breast cancer were included. Descriptive statistics were used to define the cohort. For patients with metastatic disease who received radiotherapy, the site of radiotherapy delivery, total doses and fractionation schedule were reported. Non-completion of scheduled fractionations was defined as treatment interruption. Comparison of age and performance status between patients who did and those who did not receive radiotherapy was made with t-test or chi-square tests, as appropriate. Ethical approval was obtained from all necessary institutions including the Partners Healthcare Institutional Review Board (Boston, USA) and the Medical Research Council of Zimbabwe.

Results

351 patients with breast cancer were reviewed. 152 (43%) patients had metastatic disease, median age 51 (IQR: 43-61). Of those with metastatic disease, 27 patients (18%) received radiation. 27 palliative courses were prescribed: 16 spine; 6 whole brain; 2 chest wall/super clavicular; 3 other palliative courses for bone metastasis. 5 (17%) patients had treatment interruption or non-completion. Most common course lengths were: 30 Gy in 10 fractions for whole brain (33%); 20 Gy in 5 fractions (22%) and 8 Gy in 1 fraction (26%) for spine. Patients who received radiation were younger (48 vs. 54 yrs, $p=0.019$), but did not differ significantly by performance status than those who did not.

Conclusion

The Radiotherapy utilization rate (RTU) was 18% in this study of patients with metastatic breast cancer. This is likely much below the optimal RTU, which may be in excess of 50% considering the burden of metastatic disease in this setting. Longer courses were generally prescribed to all sites, with limited use of radiotherapy to the chest wall for palliation of local symptoms. There is a need to strongly consider radiotherapy as an option for more patients in the metastatic setting with the aim of improved overall clinical utility.