

The dosimetric effect for breast cancer patients who were treated with adjuvant radiotherapy using VMAT techniques.

Kholoud Bakur Fallatah

King Abdulaziz University, Jeddah, Saudi Arabia



Abstract

Radiotherapy (RT) in breast cancer reduces the rate of local relapse and improves long-term survival. However, 3D conformal radiation techniques often result in significant dose inhomogeneity throughout the treatment volumes and associated with toxicities to the heart and the lung. In volumetric modulated arc therapy (VMAT), we can acquire excellent homogeneity throughout the target volume, and acceptable doses to the normal structures. This study aimed to look at the dosimetric effect in our single institution, for breast cancer patients who were treated with adjuvant radiotherapy using VMAT techniques.

METHOD: Fifty-three women enrolled in this retrospective study, with invasive breast cancer treated with surgery followed by radiotherapy with VMAT techniques.

RESULTS: Dosimetric results showed that patients treated with standard fractionation 50 Gy/25 fractions, the PTV D98% with the mean \pm (SD) of 47.5 ± 0.8 Gy, PTV D2% was 53 ± 0.4 Gy, and D50 was 51 ± 0.3 Gy. V95 was 98 ± 1.18 %. The homogeneity index (HI) was 0.11 ± 0.02 , and, Conformity Index (CI) was 0.1 ± 0.07 .

CONCLUSION: VMAT technique is a successful method; it is proved to be a safe and effective approach in treating breast cancer with decent homogeneous target dose coverage while meeting heart and lung dose constraints.

Key words: Dosimetric effect, Breast cancer, Radiotherapy, VMAT techniques, COVID-19

Biography:

Kholoud Bakur Fallatah is one of the Researchers in King Abdulaziz University, Jeddah, Saudi Arabia. She has been involved in the fields of Radiotherapy.

Speaker Publications:

1. "Histologically confirmed upper gastrointestinal Crohn's disease: is it rare or are we just not searching hard enough?"

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