

Gamal Elhousseiny, Waleed Arafat, Azza Helal, Saad Elkomy: **IMRT treatment plans of left breast cancer: comparison with 3DCRT**. PAJO 7(3): 28-33, Sep 2014

Introduction

IMRT becomes more suitable for treating complex target volumes as it is able to generate more complicated dose distributions and dose gradients with narrower margins than those allowed using traditional methods. As a consequence, IMRT can provide a clinical benefit in terms of increased tumor control through escalated dose and reduced normal tissue complications through organs sparing.

Aim

To compare target conformity and sparing of lung, heart and contralateral breast for IMRT and 3DCRT plans for left breast cancer female patients underwent breast conservative surgery

Methods

CT studies of 20 patients with early stage left breast cancer who underwent breast conservative surgery were planned using 3DCRT and IMRT plans. PTV, lungs, heart and contralateral breast (CB) were outlined. 50 Gy was prescribed to the isocenter. Dose volume histogram parameters (dvps) for both plans were compared and analyzed statistically using Wilcoxon Signed-Ranks test of SPSS (version 18).

Results

Both 3DCRT and IMRT achieved adequate and comparable target coverage. On the other hand, tangential IMRT showed insignificant higher PTV maximum dose with significant less dose homogeneity compared to 3DCRT. This is with greater sparing of the lungs, heart and contralateral breast in IMRT plans.

Conclusion

In the current study, our data shows that tangential beam IMRT for left breast cancer patients offers the potential to significantly reduce dose-volume parameters of the ipsilateral lung, heart and contralateral breast compared to tangential beam 3-DCRT with comparable target dose coverage. However 3DCRT technique is superior in term of dose homogeneity within the target. I declare that there is no conflict of interest with any financial organization regarding the material in this manuscript.