

A comparative dosimetric study of 3D conformal radical radiotherapy for bladder cancer patients versus conventional 2D radical radiotherapy in NCI-Cairo

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Abstract

Purpose: This study was to compare this multiple-field conformal technique to the 2D conventional technique with respect to target volume coverage and dose to normal tissues.

Materials and methods: We conducted a single institutional prospective comparative dosimetric analysis of 15 patients who received radical radiation therapy for bladder cancer presented to radiotherapy department in National Cancer Institute, Cairo in period between November 2011 to July 2011 using 3D conformal radiotherapy technique for each patient, a second 2D conventional radiotherapy treatment plan was done, the two techniques were then compared using dose volume histogram (DVH) analysis.

Results: Comparing different DVHs, it was found that the planning target volume (PTV) was adequately covered in both (3D & 2D) plans while it was demonstrates that this multiple field conformal technique produces superior distribution compared to 2D technique, with considerable sparing of rectum and to lesser extent for the head of both femora.

Conclusions: From the present study, it is recommended to use 3D planning for cases of cancer bladder especially in elderly patients as it produces good coverage of the target volume as well as good sparing of the surrounding critical organs