

Open Access

Abstract

Published 03/05/2025

Copyright

© Copyright 2025

Shoeir et al. This is an open access abstract distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Distributed under

Creative Commons CC-BY 4.0

Two Years' Experience with Stereotactic Body Radiotherapy for Localized Prostate Cancer Using the CyberKnife System

Shaima Shoeir ¹, Azza Nasr ¹, Hany Ammar ², Mohamed S. Zaghloul ³, Enji Todary ⁴, Rana Hegazy ⁴, Abdulrahman Ibraheem ⁴

¹. Radiation Oncology, Children's Cancer Hospital, Cairo, Egypt, Cairo, EGY ². Radiation Oncology, Children's Cancer Hospital Egypt (57357), Cairo, EGY ³. National Cancer Institute, Egypt, Cairo, EGY ⁴. Radiation Oncology, Children's Cancer hospital Egypt, Cairo, EGY

Corresponding author: Shaima Shoeir, sh.shoeir@gmail.com

Categories: Medical Physics, Radiation Oncology

Keywords: cyberknife, stereotactic body radiotherapy

How to cite this abstract

Shoeir S, Nasr A, Ammar H, et al. (March 05, 2025) Two Years' Experience with Stereotactic Body Radiotherapy for Localized Prostate Cancer Using the CyberKnife System. Cureus 17(3): a1513

Abstract

Objectives:

evaluating clinical outcomes and toxicity for newly implemented SBRT for localized prostate cancer using cyberknife in 57357 hospital.

Methods:

Data were collected from Fifty-one prostate cancer patients who were treated with Cyberknife at Children's Cancer Hospital Egypt between August 2022 and August 2024. All patients received a prescribed radiation dose of 36.25 Gy in 5 fractions, delivered every other day. Four golden fiducials marks were implanted in each patient using trans rectal ultrasound 12 days prior CT simulation for motion tracking during treatment. Treatment plans were designed using MLC collimator and the dose constraints to critical organs met the RTOG criteria. Patient specific quality assurance was performed for each patient.

Results:

Treatment plans were designed using MLC collimator with the dose prescribed to 88 %-90% of maximum dose, and the dose constraints to critical organs met the RTOG criteria. Patient – Specific Quality Assurance were maintained at 3% differences between measured and calculated dose. The average treatment delivery time was 17 minutes \pm 2 minutes. 23 patients were of high risk while 22 and 6 were with intermediate and low risk respectively. Concomitant hormonal treatment was given according to risk classification. 11 out of the 51 developed grade 1 lower GIT toxicity while 9 developed grade 1 GU toxicity. The rest developed no toxicity. Till last day of follow up, all were free of disease with normal PSA.

Conclusion(s):

Successful implementation of SBRT for localized prostate cancer using Cyberknife at our department. Our two-years' experience demonstrated that ultrahypofractionation was well tolerated with good local control and tolerable toxicity.