

Cuccia F., Figlia V., Rigo M., Mazzola R., Giaj Levra N., Nicosia L., Ricchetti F., Trapani G., Attinà G., Pastorello E., Vitale C., Ruggieri R., Alongi F.

IRCCS Sacro Cuore Don Calabria Hospital, Dept. of Advanced Radiation Oncology, Negrar di Valpolicella, Italy

Introduction & Objectives: In the present series we report preliminary acute and late toxicity of the first 100 patients who received 1.5T MR-guided daily-adaptive stereotactic body radiotherapy for prostate cancer.

Materials & Methods: We report the outcomes of the first 100 patients treated from October 2019 to December 2020. All the patients were enrolled in a prospective study (MR Linac n°XXXX). Before the treatment, the insertion of the rectal spacer was proposed as optional and applied in 37 patients. Hormone therapy was prescribed according to international guidelines in 32 patients. Toxicity was prospectively collected and assessed using Common Terminology Criteria for Adverse Events (CTCAE v5.0). Quality of life was assessed using IPSS, EORTC QLQ-C30, QLQ-PR25 and EPIC-26 questionnaires.

Results: A total of 100 patients were treated: 34 were low risk, 29 were favorable intermediate-risk, 31 were unfavorable intermediate-risk, 2 high risk, 4 were low-volume M1 patients. The median age was 71 years (range, 52-84); SBRT was delivered using 1.5T MR-guided daily adaptive radiotherapy in 5 sessions for a median total dose of 35 Gy (35-36.25 Gy) on consecutive (n=75) or alternate days (n=25). The adapt-to-shape workflow was mainly adopted (480/500 sessions). The median treatment time was 40 minutes (range, 33-83 minutes). The median PTV volume was 105.8 cc (range, 13.98-196.4cc). Acute toxicity rates were as follows: 5 acute G2 genitourinary tract pain events, and two cases of urethral stenosis requiring catheterization fully resolved within the first follow-up. For gastrointestinal toxicity, only 4 cases of G2 events (rectal tenesmus or proctitis) were observed. All the G \geq 2 events occurred after an average time of 30 days from the end of RT. With a median follow-up of 21 months (range, 10-29 months), for late events, we have recorded 3 late G2 GU events (urinary tract pain) and only one G2 GI proctitis. Up to the last follow-up, we recorded one G3 GU event with a patient requiring a TURP due to urethral stenosis, and one G3 GI rectal bleeding. All patients are alive and in disease control except for one M1-low volume patient who developed distant progression two months after RT.

Conclusions: Our preliminary report on the first 100 patients of patients who received 1.5T MR-guided daily-adaptive SBRT for prostate cancer reports excellent results in terms of acute and preliminary late toxicity. More mature data are warranted.