P012 Prostate stereotactic radiotherapy: Efficacy and toxicity profile with the use of endorectal ballon

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Laranja C., Castro C., Ferreira C., Oliveira A.

Instituto Português de Oncologia Francisco Gentil, Dept. of External Radiotherapy, Porto, Portugal

Introduction & Objectives: Stereotactic body radiation therapy (SBRT) for prostate cancer is emerging as a cost-effective option for localized disease. However issues related to toxicity profile have been raised. With the use of endorectal ballon (ERB) during SBRT to limit intrafraction prostatic motion, some authors suggest an increase in the volume of rectum receiving higher doses of radiation and because of that enhancing rectal toxicity. Herein, we report efficacy and rectal toxicity profiles from our institutional prostate SBRT experience with ERB.

Materials & Methods: Thirty two men with low- or intermediate-risk prostate cancer treated at a single institution with linear accelerator-based SBRT to 36,25Gy in 5 fractions every other day, with or without androgen deprivation therapy (ADT) were included. All patients underwent fiducial marker placement followed by pre-treatment MRI and CT with a ERB inflated with 100mL of water. Gastrointestinal (GI) toxicities were defined using the Common Toxicity Criteria for Adverse Events (CTCAE) v.5.0. The failure definition of Nadir+2 ng/mL was used for biochemical failure.

Results: Our population had a median age was 64 years (range 48–77) and median follow up was 34.9 months (range 5.4–79.0). Regarding Gleason score, 34.4% of our population were G(3+3) and 65.6% G(3+4). Most patients (53.1%) had PSAi between 5-10 ng/mL, 28.1% had <5ng/mL and 18.8% >10ng/mL. Planning target volume (PTV) included only the prostate in 65.6% of the patients and 34.4% included prostate plus seminal vesicles. Only one patient received ADT for unfavourable intermediate risk disease. Two biochemical failures were observed, one patient at 64.9 months follow-up and the other at 14.6 months. The actuarial freedom from biochemical failure was 95.5% at 3 years. Rectal toxicity grade 1 was observed in 31.3% of patients and only one patient reported grade 2 toxicity (rectorrhagia). No toxicity grade >3 were reported. Dosimetric parameters (homogeneity index, PTV D98%, PTV D2%, rectal V10%, rectal V80%, rectal V90% and rectal mean dose) were similar between patients who reported rectal toxicity and those who did not. According to our protocol, all patients underwent a rectosigmoidoscopy (RSC) 2 years after SBRT treatment. Fifteen patients made the RSC so far. Although patients that reported gastrointestinal toxicity had a higher median score with Vienna Rectoscopy Score, no significant differences were shown.

Conclusions: Prostate SBRT has substantial evidence supporting its use, with favorable tumor control, patient quality of life, and toxicity profiles, these results are in agreement with our own. The concerns related to the use of ERB and the increase dose to the rectum, as our study suggest, do not enhance rectal toxicity. However larger samples and/or longer follow-up could be important to enlighten this question.