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^{125}I brachytherapy for localized prostate cancer: a single institution experience

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ABSTRACT

Aims and background. To evaluate the clinical outcome of a cohort of localized prostate cancer patients treated with ^{125}I permanent brachytherapy at the University of Turin.

Methods and study design. A retrospective analysis was carried out on 167 consecutive patients with early stage prostate adenocarcinoma who underwent ^{125}I brachytherapy between January 2003 and December 2010. A minimum follow-up of ≥12 months was mandatory for inclusion. Biochemical disease-free survival (defined on the basis of the ASTRO definition and the ASTRO-Phoenix definition) was chosen as the primary end point. Secondary end points were gastrointestinal and genitourinary toxicity (acute and late, defined according to the RTOG scale).

Results. With a median follow-up of 42 months (range, 13.5-90.7), biochemical disease-free survival at 3 and 5 years was respectively 91.1% and 85.7%, according to the ASTRO definition and 94.5% and 85.1% according to ASTRO-Phoenix definition (for statistical purposes, only the ASTRO definition was used). Hormone treatment and nadir PSA (cutoff of 0.35 ng/ml) were the only factors affecting biochemical disease-free survival both on univariate (P = 0.02 and P = 0.001, respectively) and multivariate analysis (HR 0.024; P = 0.021 and HR 21.6; P = 0.006, respectively). Only 3.6% of patients experienced ≥grade 3 acute urinary toxicity and 5% ≥grade 3 late urinary toxicity. Prior transurethral prostate resection was the only independent predictor of grade 3 late urinary toxicity on multivariate analysis (HR 0.13; P = 0.009).

Conclusions. This mono-institutional series confirmed that brachytherapy is an effective and safe treatment modality for localized prostate cancer, with acceptable short- and long-term morbidity rates.

Key words: brachytherapy, PSA nadir, prostate cancer, prostate-specific antigen.

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