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Abstract

INTRODUCTION: We sought to compare the outcomes between radical prostatectomy (RP) and permanent seed prostate brachytherapy (PB) in patients with low- and low-intermediate-risk prostate cancer from a single tertiary care centre.

METHODS: Patients were selected from our institute's internal database based on preoperative selection criteria from the National Comprehensive Cancer Network (NCCN) guidelines (2015) for low- and intermediate-risk patients. No patient had received any neo-adjuvant androgen-deprivation therapy. The endpoint was biochemical recurrence (BCR) or any salvage treatment for both RP and PB at 48 ± 4 months after treatment. The biochemical relapse threshold was set at prostate-specific antigen (PSA) ≥0.5 ng/mL for PB and two PSA values of ≥0.2 ng/mL for RP. Patients from both treatment groups were compared using non-parametric tests. A binary logistic regression analysis was performed to determine an association of treatment and pretreatment factors with a BCR at 48 months.

RESULTS: A total of 575 patients were included in this study; 254 were treated with RP and 321 with PB. BCR was not different between both groups (p=0.84, Chi-square test), and occurred in 21.2% of patients treated with RP and in 20.6% with PB. Based on univariate and multivariate logistic regression analyses, younger age, higher percentage of positive biopsies, and initial PSA were predictive of BCR. Treatment modality was not predictive in either univariate (odds ratio [OR] 0.96, 95% confidence interval [CI] 0.64-1.44; p=0.84) or multivariate (OR 1.43, 95% CI 0.89-2.30; p=0.14) analyses.

CONCLUSIONS: Using closely related cutoff values for BCR, both RP and PB did not have significantly different outcomes at four years post-treatment. A longer followup may be necessary to detect a difference between treatments.