Diagnostic capability was determined by calculating the area under the curve (AUC) in the receiver operating characteristic (ROC) curves. This parameter had an AUC value of 0.786. It was predictive of G2-G3 complications with 71.4% specificity and 72.2% sensitivity for a dose difference threshold of 48 Gy.

Conclusion: A non-homogenous dose region around urethra at the end of the real-time implant is a risk factor for development of urethral morbidity. Several studies have found dosimetry correlations between CT post-plan and urinary morbidity. This study focuses on US real-time dosimetry parameters. It allows us to consider new constraints and dosimetry alerts during treatment planning. A prospective study is under consideration, where a new real-time dosimetry parameter. It allows us to consider new constraints and dosimetry alerts during treatment planning. A prospective study is under consideration, where a new real-time dosimetry parameter.

Purpose or Objective: To evaluate evolution and average time to IPSS (International Prostate Symptom Score) recovery, in patients who have been submitted to I-125 prostate brachytherapy (Low dose rate brachytherapy).

Material and Methods: Between March 2011 and December 2013 we performed 66 prostate brachytherapy in patients with low / intermediate risk prostate cancer. 4 patients also received external radiotherapy. 14 patients received previous hormone therapy. A 145 Gy dose was prescribed if exclusive brachytherapy was given and 108 Gy if combined with external radiotherapy. All patients were treated with Quicklink Delivery System® (BARD) and real-time planification. Of the 66 treated patients 5 did not have initial IPSS, 13 did not have complete follow up, and the 48 remaining have a suitable follow up. The variables that have been evaluated were: Prostate volume, Qmax, number of implanted seeds, number of needles and Urethra’s D1; “p value” was obtained from Mann-Whitney test. The prostate average volume was 33.73 cc, Qmax 18.7 ml/sec, number of seeds: 60.2, number of needles: 16.1 and urethra’s D1: 138% to the prescribed dose.

Results: With an average follow up of 27 months, 41 of 48 patients (85.4%) recovered their IPPS, with an average recovery time of 9 months. 7 patients (15%) showed progressive worsening without recovery, and 3 (4.5%) of them developed acute urinary retention (AUR) one month after the implant. In a multivariate analysis the main factor that influenced AUR was the prostate volume, with p= 0.0583, (in these 3 patients prostate volume average was 42.47 cc, higher than the average non AUR) and other factors that seemed to influence were IPPS and Qmax values, without statistical significance (“p” value) (In these patients Qmax average was 7.63 and IPPS average was 9.33, worse than non AUR).

Conclusion: 85% of patients with complete follow-up, recovered its basal IPPS. The average time to recovery was 9 months, and the incidence of acute urinary retention was lower than 4.5%.

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