BDFS rate was better in patients when initial PSA level was < 20 ng/mL compared with ≥ 20 ng/mL (93% and 79%, respectively, $P < 0.001$). The treatment was well tolerated in all patients, with no grade 4 (RTOG) acute complications. However, urethral stricture was observed as the late complication in 50 patients (13.3%).
Conclusions: With a low complication rate and satisfactory BDFS rates, this combination therapy is considered to be an alternative method for locally and locally advanced prostate cancer and is expected to improve the QOL of patients.

PO83

A prospective randomized study to compare the short-term urinary function between silodosin and tamsulosin after ^{125}I prostate brachytherapy

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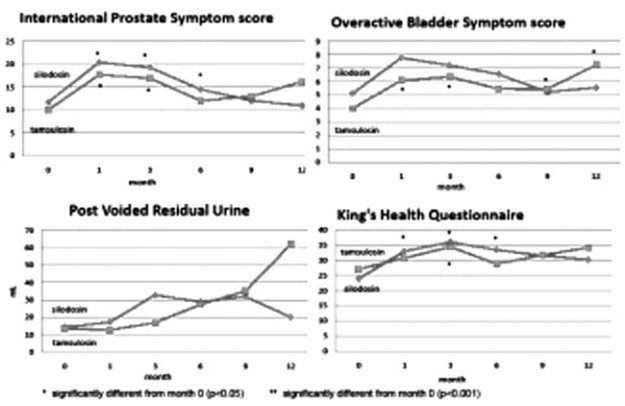
Purpose: The FDA has approved silodosin (Rapaflo), an alpha-1 adrenergic receptor blocker, for symptoms of benign prostatic hyperplasia. This prospective, randomized study was conducted to compare the short-term urinary function and HRQoL (health related quality of life) between silodosin and tamsulosin after ^{125}I prostate brachytherapy.
Methods and Materials: Between June 2006 and October 2007, twenty of T1-T2 prostate cancer patients treated with brachytherapy were randomized to 8 mg silodosin or 0.2 mg tamsulosin for 6 months. The International Prostate Symptom Score (IPSS), Overactive Bladder SymptomScore (OABSS), voided volume (VV), peak flow rate (PFR), post voided residual urine(PVR), QOL score and HRQoL using the Kings Health Questionnaire (KHQ) were obtained at preimplant, and at 1, 3, 6, 9 and 12 months after the implantation.
Results: The median implant prostate volume was 22.5 cm^3 (range 8.3 to 31.7). The median D90 was 170.4 Gy. No statistical differences were found in the treatment and disease characteristics in the two groups before the treatment. There were no significant differences in these two groups regarding these parameters at preimplant, and 1, 3, 6, 9 and 12 months.
The mean total IPSS increased from 10.9 to 18.2 ($p < 0.001$) by one month and to 18.1 ($p < 0.001$) by 3 months after brachytherapy, continuously decreased, and was 12.6 ($p > 0.05$) at 12 months in all patients. The mean total OABSS increased from 4.5 to 6.9 ($p < 0.05$) by one and three months and decreased to 6.0 by 6 months. The trend of these urinary morbidities was observed in each group. However, the OABSS did not move significantly from its baseline in the silodosin group.
The mean VV and PFR was decreased by one month, and statistically lower ($p < 0.05$) in comparison to the baseline by six month in all patients and each groups. The PVR was higher than its baseline in 6 months ($p < 0.05$) in all patients. No significant changes from the baseline have seen in each groups.
The KHQ increased from 25.6 to 35.5 ($p < 0.05$) at three months and then maintained the same level for one year in all patients and the QOL score showed a similar trend. This trend was observed in both groups.
Conclusions: This randomized study has proved that silodosin has an effect similar to that of tamsulosin on urinary morbidity, urodynamic studies and HRQoL after prostate brachytherapy. Moreover, silodosin statistically controlled the overactive symptom of these patients within one year.



PO84

Clinical and dosimetric variables associated with acute bowel toxicity following prostate seed brachytherapy with ^{131}Cs

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Purpose: Cesium-131 (^{131}Cs) has been recently introduced as an isotope for use in prostate brachytherapy (PB). With an average energy of 30.4 keV and half-life of 9.7 days, it holds the potential advantage of limiting the duration of acute symptoms. We wished to identify clinical and dosimetric factors associated with acute bowel toxicity in patients treated with ^{131}Cs.
Methods and Materials: Patients treated with ^{131}Cs PB at the University of Pittsburgh were asked to complete Expanded Prostate Cancer Index Composite (EPIC) surveys pre-operatively and at 2 weeks, 4 weeks, and 3 months following seed placement. We identified patients who experienced severe acute rectal toxicity (defined as a decrease in bowel summary EPIC score of ≥ 30 from baseline 2-4 weeks following implantation) and also those patients who experienced more persistent bowel toxicity (defined as those whose EPIC bowel summary scores remained >10 below baseline at 3 months) to determine if any clinical or dosimetric factors could correlate with either situation. Factors analyzed included use of hormones, use of supplemental external beam radiation therapy (EBRT), prostate volume, number of seeds/needles used, total seed activity, the dose received by 90% of the prostate volume (D90), the percentage volume of prostate receiving 100% of the prescribed dose (V100), V150, V200, the volume (cc) of rectum receiving 150% of the prescribed dose (R-V150), R-V100, R-V75, R-V50, R-V25, the % of the prescribed dose received by 1 cc of the rectum (R-D-1 cc), and R-D-2 cc.
Results: 108 patients were treated with ^{131}Cs from September 2006-May 2008. 69 patients received PB as monotherapy, 24 received PB as a boost following EBRT, 9 received PB as a boost following EBRT along with hormones, and 6 received PB with hormonal therapy. 38 patients experienced a drop in pre-operative bowel summary EPIC score of ≥ 30. On multivariate analysis, the R-V50 (4.0 cc v. 2.7 cc, $p = 0.03$), R-V75 (1.24 cc vs. 0.67 cc, $p = 0.03$), R-D-1 cc (74% vs. 64%, $p = 0.04$), R-D-2 cc (62% vs. 54%, $p = 0.04$), and the number of needles used (19 vs. 17, $p = 0.01$) were found to be significant factors associated with a greater risk of severe acute bowel toxicity. At the time of analysis, EPIC bowel summary scores at 3 months were available for 80 patients of which 14 patients had more persistent bowel toxicity. On multivariate analysis, R-V25 (12.4 cc vs. 9.3 cc, $p = 0.03$) was found to be the only factor to correlate with a higher likelihood of persistent bowel toxicity at 3 months. No patients experienced persistent bowel toxicity at 3 months if the R-V25 was <5 cc while 15%, 23%, and 30% experienced persistent bowel toxicity at 3 months if the R-V25 was 5.1-10 cc, 10.1-15 cc, and >15 cc, respectively.
Conclusions: Toxicities associated with ^{131}Cs PB typically reach their peak 2-4 weeks following therapy and subsequently subside by 3 months. This study identifies the R-V25 as a possible predictive factor in determining those patients at highest risk of having persistent bowel toxicity at 3 months. We are performing dosimetric analysis to determine the optimal distance for the posterior needles from the prostate/rectal interface to decrease V25, V50 and V75 while still maintaining adequate coverage of the prostate.