treatment PSA was 7.2 ng/ml (range, 0.8 to 19.9). The overall 3-year biochemical relapse free survival (bRFS) was 93.9%. Cox regression identified primary Gleason pattern as the only significant predictor of PSA relapse with a HR of 5.84 (1.92 to 17.8, 95% CI) for primary Gleason pattern 4 vs. 3. There was no significant difference in bRFS between patients classified as having favorable vs. unfavorable intermediate risk disease, HR 0.39 (0.11 to 1.41, 95% CI). There were no significant benefits observed with respect to ADT in any subgroup.

Conclusion: Early PSA responses after SBRT for intermediate risk prostate adenocarcinoma compare favorably to those reported using other radiation therapy modalities. Primary Gleason pattern 4 is predictive of less favorable bRFS, however early rates of PSA control are excellent compared to historical controls. The role of ADT in these patients is still unclear. The current evidence supports SBRT as a standard therapeutic option in intermediate risk disease.

PO-0738
Hydrogel injection prevents long-term rectal toxicity after radiotherapy for prostate cancer

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Purpose or Objective: The aim of the study was to compare health-related quality of life (QoL) after external beam radiotherapy (RT) for prostate cancer with and without a hydrogel spacer.

Material and Methods: A group of 202 patients with the indication for treatment of the prostate +/- base of seminal vesicles without pelvic lymph nodes was treated in a single institution in the years 2010-2013. Depending on the patient's and responsible radiation oncologist's preference, 108 patients were selected for a hydrogel injection before the beginning of RT. The injection of 10 ml hydrogel was performed under transrectal ultrasound (TRUS) guidance after dissecting the space between prostate and rectum with a saline/iodocaine solution under local anesthesia.

Treatment was performed with a five-field IMRT or VMAT technique with daily ultrasound based image guidance. Only for patients with a spacer the prescription dose was increased from 76Gy to 78Gy, subsequently 80Gy. Patients were surveyed prospectively before RT (time A), at the last day of RT (time B), a median time of two months (time C) and seventeen months after RT (time D) using a validated questionnaire (Expanded Prostate Cancer Index Composite; comprising 50 items concerning urinary, bowel, sexual and hormonal domains). The multi-item scale scores were transformed linearly to a 0-100 scale, with higher scores representing better QoL. Baseline QoL assessment was available from 101 / 66 patients with / without a spacer.

Responses to both the baseline and last (time D) questionnaire were available in 94 / 57 cases with / without a spacer.

Results: Apart from higher prescription doses in the spacer group, baseline patient characteristics were well balanced between patients with vs. without a spacer (Table). In particular, baseline QoL was comparable. Acute toxicity (corresponding to QoL changes at times B and C relative to baseline levels) did not differ significantly, with only a tendency for better scores in the spacer group. However, mean bowel bother scores >1 year after RT in comparison to baseline did not change for patients with a spacer (mean change of 0 points) in contrast to patients without a spacer (mean decrease of 7 points). Long-term mean urinary bother scores did not decrease in both groups. At time D, statistically significant differences were found in the function items “bloody stools”, “painful bowel movements” and “frequency of bowel movements”. Focusing on patients with no problem with bowel symptoms initially, 0% vs. 12% patients reported a moderate/big problem with bowel symptoms >1 year after RT (p<0.01).

Conclusion: Though acute rectal symptoms are still reported, spacer injection is associated with a significant long-term benefit for patients after prostate cancer RT.

PO-0739
IMRT versus 3D conformal radiotherapy when used in combination with I-125 prostate brachytherapy

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Purpose or Objective: To compare biochemical outcomes and toxicity of intensity modulated radiotherapy (IMRT) and three-dimensional conformal radiotherapy (3D-CRT) when used in combination with I-125 brachytherapy (BT) for the treatment of unfavorable-risk prostate cancer.

Material and Methods: A retrospective review was performed on 839 patients with localized prostate cancer who received external-beam radiotherapy (EBRT) following BT between 2003 and 2012. Patients were categorized into National Comprehensive Cancer Network risk groups: 616 were unfavorable intermediate-risk (Gleason score 3+4, or Gleason score 4+3 with positive biopsy core rate 1/3), and 223 were high-risk. Treatment begins with BT, followed 6 weeks later by 45 Gy/25 fractions of EBRT. EBRT was delivered via 3D-CRT in 616 men at first and via IMRT technique for 223 men after 2010. The prescription dose for I-125 was 100 Gy, up to 110 Gy after 2009. All patients underwent a CT scan for postplan dosimetry at day 30. The rectal volumes receiving doses higher than 30 Gy, 35 Gy, and 40Gy should be kept under 35%, 25%, and 15%, respectively. Neoadjuvant androgen deprivation therapy was given to 45% of patients. Biochemical failure was defined with the Phoenix criteria, and toxicity was graded according to the National Cancer Institute’s Common Terminology Criteria for Adverse Events, prospectively collected. The median (range) follow-up was 7 (2-12) years for the entire cohort; 8.3 years for 3D-CRT, and 4.3 years for IMRT. The biological effective dose (BED) was calculated using an α/β of 2 Gy and the D90 values of the prostate on a day-30 CT scan. Comparisons were made by chi-square test and log-rank test.

Results: The total BED value of the prostate was higher in the IMRT group than in the 3D-CRT group (219 Gy2 vs. 209 Gy2, p <0.001). The 5-year actuarial freedom from biochemical failure for the IMRT group was 92.7% vs. 92.6% (p=0.825) for all; 95.4% vs. 95.1% for intermediate-risk, and 88.0% vs. 84.8% for high-risk group (p=0.788), respectively. Acute gastrointestinal (GI) grade 2+ toxicities occurred in 0.5% of the IMRT group and 2.7% of the 3D-CRT