Conclusion: The results obtained permit us to form the conclusion that CK based radioablation of low and intermediate risk PC patients is an effective treatment modality enabling OTT shrinkage and giving a very low percentage of adverse effects.

PV-0090
Stereotactic body radiotherapy for localized prostate cancer: a 7-year experience
Y.W. Lin1, K.L. Lin2, L.C. Lin1
1Chi Mei Medical Center, Department of Radiation Oncology, Tainan City, Taiwan
2Chi Mei Medical Center, Department of Radiation Oncology, Tainan City, Taiwan

Purpose or Objective: Recent understanding of radiobiology for prostate cancer suggested hypofractionation might achieve a higher therapeutic benefit. Stereotactic body radiation therapy (SBRT) is able to delivery high dose per fraction precisely. SBRT for prostate cancer might escalate biological effective doses while without increasing toxicity. Here, we reported our 7-year experience of SBRT for localized prostate cancer.

Material and Methods: Between November 2008 and Sep 2013, a total of 135 patients with clinically localized prostate were enrolled for analysis. Patients were low-risk (19%), intermediate-risk (37%), and high-risk (44%). Low- and intermediate-risk patients were treated with SBRT alone (37.5Gy in 5 fractions). High-risk patients were treated with whole pelvic irradiation (45Gy in 25 fractions) and SBRT boost (21Gy in 3 fractions). All of intermediate- and high-risk patients received hormone therapy with different duration. The toxicities of gastrointestinal (GI) and genitourinary (GU) tracts were scored by Common Toxicity Criteria Adverse Effect (CTCAE v3.0). Biochemical failure was defined as Phoenix definition.

Results: With a median follow-up of 52 months, there were seven patients with biochemical failure (one low-risk patient; one intermediate patient; five high-risk patients). The estimated 50-month biochemical failure-free survival (BFFS) was 95.8%, 96.4% and 81.5% for low-, intermediate, and high-risk patients, respectively. In the high-risk group, there were two late biochemical failures around 60 months. In the SBRT alone group, acute Grade 3 GU and GI toxicities were seen in 2.8% and 1.4% of the low/intermediate-risk patients, respectively; the incidence rate of late Grade 3 GU and GI toxicity were 3.5% and 0%. In the whole pelvic irradiation with SBRT boost group, acute Grade 2 GU and GI toxicity occurred in 31% and 21% of the high-risk patients, respectively; there was no grade 3 or higher late toxicity of GU and only one patient experienced grade 3 GI tract. Most of acute toxicity effects in both groups resolved within three to six months of treatment completion.

Conclusion: SBRT with or without whole pelvic irradiation for localized prostate cancer is feasible with minimal toxicity and encouraging biochemical failure-free survival but should be aware of late failure in the high-risk group. Use of whole pelvic irradiation for high-risk patients was not associated with higher GU or GI toxicity. Continued accrual and follow-up would be necessary to confirm the biochemical control rate and the toxicity profiles.

PV-0091
Early salvage RT for PSA recurrence postprostatectomy improves biochemical progression free survival
A.B. Hopper1, A.P.S. Sandhu1, J.P. Einck1
1University of California San Diego, Radiation Medicine and Applied Sciences, San Diego, USA

Purpose or Objective: The definition of biochemical recurrence following radical prostatectomy for prostate cancer remains controversial in the era of ultrasensitive PSA. The AUA definition of PSA > 0.2 ng/mL may not be valid when PSA can be detected as low as 0.01 ng/mL. Randomized trials have shown a benefit in terms of biochemical progression-free survival (bPFS) and metastasis free survival with adjuvant radiation compared to salvage but many patients enrolled as adjuvant actually had detectable PSA values. We compared patient outcomes with salvage radiotherapy based on pretreatment PSA in order to identify whether early salvage radiotherapy is more effective than treating later.

Material and Methods: We performed an institutional review board-approved retrospective analysis of patients treated at our institution with post-prostatectomy image guided radiotherapy from 2005 to 2013. Patients with positive lymph nodes, those with an undetectable PSA and those with metastatic disease were excluded from our analysis. Data were abstracted from each patient’s electronic medical record including age, pathologic stage, Gleason score, margin status, androgen deprivation therapy, treatment to the pelvis, dose and PSA values. Patients were either treated with intensity modulated radiotherapy (IMRT) or volumetric arc therapy (VMAT) using daily image guidance. The use of ADT and the treatment of nodes was at the discretion of the treating physician. Radiation dose ranged from 6200-7400 cGy. Post-salvage bRFS was defined as PSA < 0.4 ng/mL. Kaplan-Meier survival analysis was used to compare patients with a pre-RT PSA value ≤ 0.2 ng/mL to those with a value > 0.2 ng/mL. Multivariate Cox regression analysis was used to evaluate significance of covariates on bPFS.

Results: 196 patients staged N0 or Nx were treated with salvage RT after prostatectomy during the study period. Median pre-treatment PSA was 0.29 ng/mL; 117 patients had a PSA > 0.2 ng/mL and 80 0.2 ng/mL. Median follow up time was 36 months, determined by the reverse Kaplan-Meier method. Overall comparison of the two groups showed that patients treated with a PSA < 0.2 ng/mL had significantly improved bPFS (p=0.003) and increased 36 month bPFS (76% vs 56%, p=0.0074) compared to those treated with higher PSA values (Figure 1). In multivariate analysis a pre-RT PSA value > 0.2 ng/mL Kaplan-Meier survival analysis was used to compare patients with a pre-RT PSA value ≤ 0.2 ng/mL to those with a value > 0.2 ng/mL. Multivariate Cox regression analysis was used to evaluate significance of covariates on bPFS.

Conclusion: SBRT with or without whole pelvic irradiation for localized prostate cancer is feasible with minimal toxicity and encouraging biochemical failure-free survival but should be aware of late failure in the high-risk group. Use of whole pelvic irradiation for high-risk patients was not associated with higher GU or GI toxicity. Continued accrual and follow-up would be necessary to confirm the biochemical control rate and the toxicity profiles.