Gleason Score (GS) < 7; the mean of iPSA was 18 ng/mL; the rate of clinical positive nodes was 1%. The ADT was prescribed to 69% of patients in neoadjuvant setting, 65% in concomitant setting and 34% in adjuvant setting. The mean follow-up was 81 months.

Results: The prognostic factors resulted statistically significant for all groups of patients at both, univariate and multivariate analysis, were the GS and the iPSA. In intermediate and high/very-high risk patients at multivariate analysis the prognostic factors for CSOS were: GS (p=0.001), positive lymph nodes on CT scan (p=0.05) and rectal preparation during the treatment (p=0.005); for the BDFS were: GS (p=0.008), patient risk classification (p=0.037), positive lymph nodes on CT scan (p=0.004), iPSA (p=0.001) and rectal/bladder preparation during the radiation treatment (p=0.001); for the CDFS were: number of positive core on biopsy (p=0.003), GS (p=0.0003), positive lymph nodes on CT scan (p=0.015), iPSA (p=0.0056) and RT dose (p=0.001). In high/very-high risk patient group at multivariate analysis the prognostic factors for CSOS were: biopsic Gleason Score, clinical/radiological stage, RT dose; for BDFS were: biopsic Gleason Score, adjuvant ADT, clinical/radiological stage, iPSA and RT dose>77.7 Gy; for CDFS were: biopsic Gleason Score, clinical/radiological stage, iPSA and RT dose>77.7 Gy.

Conclusion: Our results confirm several prognostic factors already described by literature, adding a new prognostic factor represented by the rectal/bladder preparation, generally known for its effect on toxicity but not yet on outcome. We believe that in the future a new nomogram should include also some therapeutic variables (as RT dose, RT technique and ADT), to help clinicians in decision-making.

EP-1362

Hypofractionated Simultaneous Integrated Boost IMRT in high risk prostate cancer – A novel approach

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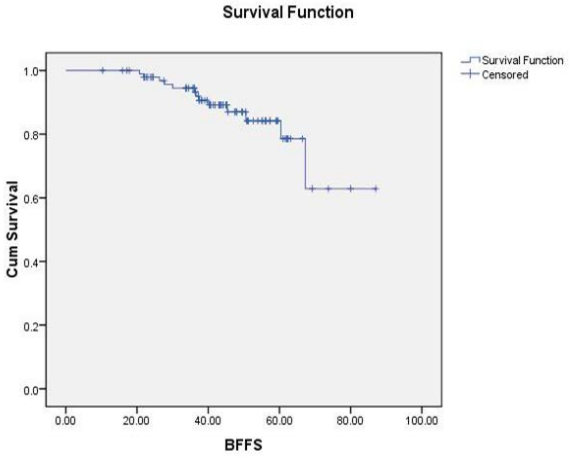
Purpose or Objective: We aim to evaluate the biochemical failure free survival (BFFS) and morbidity in high risk prostate cancer patients treated with long term androgen deprivation therapy (ADT) and hypofractionated Simultaneous Integrated Boost (SIB) IMRT. Recent advances in techniques enable us to deliver a higher dose of radiation to the prostate with limited dose to the adjacent rectum and bladder. Earlier studies have estimated prostate cancer to have low α/β of 1.5. Thus hypofractionated schedules in theory should confer better local control and cancer specific survival (CSS). Due to the long natural history of prostate cancer it becomes imperative to reduce rectal and bladder morbidity. Also BFFS has shown to be a predictor of CSS. Most of the studies with whole pelvic RT and long term ADT have used conventional fractionation schedules. Data on the benefit of hypofractionated SIB IMRT with long term ADT is limited.

Material and Methods: Retrospective analysis of 100 high risk prostate cancer patients treated between 2010-2012. All patients received SIB IMRT with 70Gy in 28 fractions to the prostate and seminal vesicles (if involved) and 50.4 Gy in 28 fractions to the pelvic nodal stations with neoadjuvant hormonal therapy for a duration of 3-6 months prior to radiation and adjuvant hormonal therapy for a duration of 24-36 months. They were followed up with serial PSA values and clinical examination. Biochemical failure was defined as serum PSA >nadir + 2 (ASTRO Phoenix definition). Acute rectal and bladder toxicity was scored with the RTOG toxicity criteria. Chronic rectal toxicity (proctitis) and chronic bladder toxicity (cystitis) were assessed using the CTCAE 4.0. Patients without biochemical failure were censored at last follow-up/last PSA check or death. BFFS was calculated by the Kaplan-Meier method.

Results: At a median follow up of 45 months (20-87 months), there were 13 cases of biochemical failure (13 %) . 5 year BFFS was 78.6% .There was no Grade 3 or 4 acute rectal or bladder toxicity . Chronic toxicity has been listed in the table below. Urethral stricture developed in 7 patients, of whom 6 had prior TURP showing significant correlation (6/15,p<0.001).



	Grade 2	Grade 3	Grade 4
Proctitis	12	2	0
Cystitis	7	0	0

Conclusion: This study therefore concludes that long term ADT and SIB IMRT provides a feasible alternative to conventional radiation therapy with good biochemical control and acceptable toxicity. Longer follow up of these patients would provide data on cancer specific survival and late morbidity.

EP-1363

Salvage SBRT in isolated nodal oligo recurrence from prostate cancer: UPMC San Pietro FBF experience

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Purpose or Objective: A status of disease with a limited number of distant lesions and a controlled primitive tumor is recently defined as oligo-recurrence: this group of patients is more favorable than the other with a high number of metastases and, in prostate cancer, often is represented by a single node.The objective of this retrospective study was to evaluate the acute and late toxicity rates, in salvage stereotactic body radiation therapy (SBRT) as a treatment modality in nodes oligo-recurrence, from prostate cancer.

Material and Methods: Between February 2013 and March 2015, 21 patients, for a total of 29 isolated lymph nodes from prostate cancer, were treated with SBRT, delivered with Truebeam Stx (Varian®), at UPMC San Pietro FBF radiotherapy center of Rome.The median age at primitive diagnoses was 65 (range 50-74) years. For the primary treatment, radical prostatectomy and postoperative irradiation, exclusive radiotherapy or prostatectomy was performed in 12 (57%) patients, 7 patients (33%) and 2 patients (10%), respectively. Median previous RT dose was 72 Gy/35 fractions.Median PSA at the time of recurrence was 2.04ng/ml.All patients with arising PSA underwent a [11C] choline-positron emission tomography before SBRT, in order to exclude other sites of disease. The SBRT dose varied from 27 to 30 Gy, in 1-5 daily fractions, according to the previous RT treatment for the primitive lesion or a close organ at risk. A daily cone-beam CT and X-ray (BRAINLAB ExacTrac®) scans were acquired before each treatment session, for every

patient. Acute and late toxicity were analyzed, according to CTCAE toxicity scale (v. 4.0).

Results: The median follow-up was 14.5 months. Most of patients received 30 Gy, in 3 fractions, on alternative days: all the patients completed the prescribed SBRT treatment.Fifteen patients (71%) received androgen deprivation therapy concomitant to SBRT.SBRT was well tolerated: only 1 patient experienced G2 acute rectal toxicity but we didn't observe any severe acute or late toxicity (≥G3). Despite the short follow up, local control was 100%, distant control was 79% (6/21).All these recurrences were nodal and all out of SBRT field: in 2 of these 6 patients a new SBRT course was delivered (30 Gy in 3 fractions) while in the other hormonal therapy was proposed. At the moment of analysis, all patients were alive.

Conclusion: Our experience shows that SBRT for isolated nodal relapse from prostate cancer is a safe treatment, offering a low toxicity profile and an excellent tumor local control. More data and a longer follow up are needed.

EP-1364

Role of choline PET/CT in Cyberknife treatment planning for recurrent prostate cancer following EBRT

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Purpose or Objective: Most studies demonstrate that local salvage therapy after EBRT may provide long-term local control in appropriately selected pts, although toxicity is often significant.In these pts, PET/CT with [11C]choline may accurately detect the presence of recurrence.We investigated the role of [11C]choline PET/CT for target volume selection and delineation in pts with recurrent prostate cancer following EBRT for a salvage tailored Cyberknife Stereotactic Hypofractionated Radiotherapy(SBRT) treatment.

Material and Methods: From December 2012 to April 2015,22 pts with initial disease category defined as low(2),intermediate(6) high (14),in accordance with NCCN 2008 guidelines,median age of 74 years(range 62-89) and an history of locally-recurrent prostate cancer following EBRT were referred to our Department for salvage Cyberknife SBRT. The diagnosis of a clinically evident recurrence of prostate cancer was based on biochemical progression and imaging studies. Median iPSA was 22,7 ng.ml(4,9-88 ng.ml),EBRT doses ranged from 74 to 79.2 Gy(median 76Gy) and the median interval time between relapse diagnosis and salvage Cyberknife treatment was 60 months(range 19-139).The median pre-reirradiation PSA was 4,64 ng/ml (range 2,23-13,04 ng/ml). CT scan and MRI with T1-T2 sequences were performed and [11C]choline PET/CT images were fused for prostate target volume delineation.5 pts received 3 fractions of 10 Gy (total dose 30 Gy), 17 pts received 3 fractions of 12 Gy (total dose 36 Gy) delivered to the PET positive prostate node (median volume of 14,3 cc-range 5,75-65,04) in the respect of organ at risk constrains.

Results: The treatment was well tolerated with no RTOG grade 3 acute or late toxicity. With a median follow up of 17 months (range 6-35) we observed the following results: no in field recurrence, with a local control of 100%. In 4 pts, respectively at 11, 14, 16 and 22 months after treatment (median time 15 Months), a [11C]choline PET/CT detect a local recurrence with the evidence of a new positive prostate node outside the irradiated field requiring a second Cyberknife salvage treatment.

Conclusion: Advances in modern imaging show promises in the management of prostate cancer at the different stage (diagnosis, treatment planning and follow up). According to available literature [11C]choline PET/CT is not clinically recommendable to plan target volume, nevertheless ,our promising data suggest a potential role of [11C]choline PET/CT as an image guide tool for the focal irradiation of prostate cancer relapse.

EP-1365

Dosimetric predictors for rectal toxicity with two hypofractionated schedules for prostate cancer

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Purpose or Objective: To analyze the dosimetric impact on long term gastro-intestinal (GI) toxicity of two sequential dose escalation regimens of twice weekly 4 Gy/fractions hypofractionated intensity-modulated radiotherapy (IMRT) delivered within a protracted overall treatment time of 6.5 and 7 weeks, respectively.

Material and Methods: Clinical and dosimetric data on 96 prostate cancer patients with cT1c-T3a disease and nodal involvement risk ≤20% (Roach index) treated twice-weekly to the prostate +/- seminal vesicles with two sequential dose-escalated IMRT schedules of 56 Gy (14 x 4 Gy, n=28) from 2003 to 2007 and 60 Gy (15 x 4 Gy, n=68) from 2006 to 2010 were analyzed. The corresponding NTD2Gy for an α/ß ratio of 1.5 and 3 Gy were 88 and 78 Gy for the 56 Gy group, and 94 and 84 Gy for the 60 Gy group, respectively. The planning target volume (PTV) consisted of an anisotropic expansion of 10 mm around the prostate, except 6-mm posteriorly. Patient repositioning was made with bone-matching on portal images or body markers registration. GI toxicities were scored using the CTCAE v3.0 grading scale.

Results: Among the 96 analyzed patients, the 5-year grade ≥2 late GI toxicity-free survival was similar in patients treated with 56 Gy compared to those treated with 60 Gy (92.6±5.1% vs. 85.0±5.1%, p=0.533). Mean volumes of rectum receiving more than 50 Gy (V50Gy, equivalent to V70Gy NTD2Gy, α/ß=3 Gy) and 54 Gy (V54Gy, equivalent to V75Gy NTD2Gy) were 15.8% vs. 20.9% (p=0.001) and 4.2% vs. 13.8% (p=0.0001) for the 56 and 60 Gy groups, respectively. A V50Gy19% (median 19.2%, range 4.4%-37.8%) was achieved in 67.9% and 38.2% of the patients treated with 56 and 60 Gy, respectively. A V50Gy >19% correlated with a 5-year grade ≥2 late-GI toxicity-free survival of 80.8±6.3%, significantly worse than patients with a V50Gy ≤ 19Gy (95.3±3.2%, p=0.031).

Conclusion: Independently from the dose prescription, a V50Gy ≤ 19% may result in a better long term rectal toxicity profile in patients treated with a hypofractionated IMRT schedule of 56 or 60 Gy in 4 Gy fractions. As for normofractionated schedules the QUANTEC dose constraint V70Gy<20% for the rectum seems to be a strong predictive factor of late GI toxicity for hypofractionated regimens as well.

EP-1366

Hypofractionated prostate EBRT with simultaneously integrated boost: mono-institutional report

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Purpose or Objective: To report early outcome of hypofractionated radiotherapy for prostate cancer patients using a simultaneous integrated boost strategy (SIB) focusing on acute genitourinary (GU) and acute and late gastrointestinal toxicity (GI).

Material and Methods: Between 01/2012 and 06/2014 ninety-seven low (n=13) -, intermediate (n=22) - and high-risk (n=45)- prostate cancer patients were treated with hypofractionated radiotherapy using VMAT/IMRT and SIB. It