complemented by a boost to local recurrence to a total dose of 72 Gy. In case of no macroscopic tumor recurrence the total dose was 66.6 Gy.

Results: MRI was performed in 233 patients and PET/CT was performed in 169 patients. A local recurrence in the prostate bed could be detected in 123 patients with a median volume of 0.5 ml (range, 0.03 – 125.00 ml). The median follow-up time after RT was 49.4 months (range, 7.3 – 86.1 months). A total of 85 patients experienced a biochemical failure with a median time of 19.8 months (range, 1.9 – 76.1 months) after sRT. Median PSA level at the time of recurrence was 0.91 ng/ml (range, 0.01 – 2224.00 ng/ml). The median BRFS after radiation therapy was 73 months. The estimated 3- and 5-year bRFS was 72% and 55%, respectively. On multivariate analysis, Gleason Score (hazard ratio, 6.946; p = 0.006) and pre-RT PSA level (hazard ratio, 2.265; p = 0.022) were statistically significant predictors for bRFS. bRFS was similar in patients with a macroscopic recurrence in either MRI or PET/CT compared to patients without a macroscopic recurrence. 5-year overall survival was 91% and 5-year cancer-specific survival was 96%. Grade 3 gastrointestinal toxicity was observed in 4 patients and 3 patients showed grade 3 genitourinary toxicities. No grade 4 gastrointestinal or genitourinary side effects were reported.

Conclusion: Gleason score and pre-RT PSA were important predictors for bRFS. The dose in salvage radiotherapy should be increased to 72 Gy to prevent an early recurrence after sRT in patients with a macroscopic recurrence. A higher total dose of up to 72 Gy was well tolerated in this cohort of patients.

EP-1383

PSA kinetics in prostate cancer patients after SBRT radiotherapy using CyberKnife.

M. Konkol[1], A. Galuba[1], P. Milecki[1], A. Skrobala[2], A. Jodda[2], M. Adamczyk[2], J. Litoborska[2]
[1]*Greater Poland Cancer Centre, Oddzial Radioterapii I I Radiotherapy Dept., Poznan, Poland*
[2]*Greater Poland Cancer Centre, Department of Medical Physics, Poznan, Poland*

Purpose or Objective: The aim of the study was to assess the kinetics of the Prostate-Specific Antigen (PSA) in prostate cancer patients after stereotactic body radiotherapy using CyberKnife System.

Material and Methods: 44 localized prostate adenocarcinoma patients (33 low and 11 intermediate risk) without hormonal therapy, were irradiated using the CyberKnife Radiosurgical System. The prescription dose was 36,25 Gy in five fractions. During the 1-year follow-up all the patients had at least six PSA measurements – before the treatment (1-2 months before RT), during RT (after the 4th fraction) and 1, 3, 6, 12 months after RT.

Results: The mean initial PSA value among the patients was 6,25 ng/ml (range from 3,02 to 17,46 ng/ml). During the treatment we observe the PSA increase – the mean value was 11,89 ng/ml (4,13-30,68ng/ml, 155% of the initial PSA in average). In every case we noticed the PSA nadir 12 months after the treatment with a mean value of 1,50 ng/ml (0,10-4,56 ng/ml). The mean slope of the PSA was 0,56 ng/ml/month (median 0,46 ng/ml/month). No biochemical failure was observed.

Conclusion: The PSA kinetics after treatment can reflect the biological effect of radiation on prostate cancer and potentially correlate with a clinical outcome. Especially the lower value of PSA nadir (<0,5 ng/ml) is considered to associate with an increased freedom from biochemical failure. The interpretation of PSA slope is more controversial however some studies indicates a correlation with clinical outcome. Our results are similar to other SBRT studies and significantly better than in conventionally-fractionated technics. The rapid decline in PSA is particularly worth to be underlined. The further follow-up will probably confirm the expected good clinical outcome.

EP-1384

Acute toxicity hypofractionated-IMRT vs standard radiotherapy in prostate cáncer: comparative study

J. Valero Albarran[1], R. Guimaraes Domingos da Silva[2], S. Payano[1], A. Montero[1], E. Sánchez[1], X. Chen[1], O. Hernando[1], M. García Aranda[1], R. Ciervide[1], M. Lopez[1], M. Rubio[1]
[1]*Hospital University HM Sanchinarro, Radiation Oncology, Madrid, Spain*
[2]*Institute National of Cancer, Oncology Radiation, Rio of Janeiro, Brazil*

Purpose or Objective: To describe and compare acute toxicity rate in three different radiotherapy (RT) protocols for prostate cancer (PC): hypofractionated radiotherapy intensity modulated and image-guided radiation therapy (Hypo-IMRT-IGRT) group A: 21 fractions/3Gy and group B: 28 fractions/2.5Gy) and three-dimensional conformal radiotherapy standard fractionation (3DCRT) group C: 39 fractions/2Gy.

Material and Methods: Patients with the diagnosis of PC treated with RT between January 1st 2011 to June 30th 2015 were included. Hypo-IMRT-IGRT were performed using internal marker and ExacTrac-X-Ray-system. In 3DCRT group not employed internal marker. Acute genitourinary (AGUT) and acute gastrointestinal toxicity (AGIT) were assessed according to RTOG-EORTC criteria. A p value<0.05 was considered significant. Results were expressed as median (IQR). Categorical and continuous variables were compared with X2 and kruskal-Wallis ran sum test respectively. All statistical analysis was performed using R package. The institutional review board approved this study.

Results: 242 consecutive patients were retrospectively analyzed (group A: 39, group B: 128 and group C: 74). No baseline characteristic differences were found (age, PSA, TNM, PTV total, bladder and rectal volume). Maximal bladder doses and V60 rectal were different within the three groups (p=<0.01). AGUT (n): in group A was grade 0: 18; grade 1: 9, grade 2: 12; group B grade 0: 35; grade 1: 86; grade 2: 7; and group C grade 0: 23; grade 1: 38; grade 2: 13 (p=<0.01). AGIT was in group A grade 0: 38; grade 1: 1; grade 2: 0; group B grade 0: 121; grade 1: 7; grade 2: 0; and group C grade 0: 65; grade 1: 6; grade 2: 3 (p=0.07) Table 1. Comparative AGUT between A+B vs. C did not differ. AGIT in A+B group was less frequent than C group (p=0.017). AGUT from group A was different from group B (p=<0.01). AGIT from A group was not different from B group (p=0.75).There were no events > grade 3 reported in any group.

GRADE n(%)	0	1	2	p
AGUT				<0.01
Group A	18(46)	9(23)	12(31)	
Group B	35(27)	86(67)	7(5)	
Group C	23(31)	38(51)	38(51)	
AGIT				0.07
Group A	38(97)	1(3)	0(0)	
Group B	121(95)	7(5)	0(0)	
Group C	65(88)	6(8)	3(4)	

Conclusion: Hypo-IMRT-IGRT was associated to lower AGIT rate than 3DCRT. Hypo-IMRT-IGRT 21 fractions/3Gy was inferior to Hypo-IMRT-IGRT 28 fractions in terms of AGUT.

EP-1385

A comparative study between radical RT and radical prostatectomy in locally advanced prostate cancer

P. Gupta[1], N. Rastogi[1], K. Sharmad[2], K. Das[1], R. Kapoor[2], A. Mandhani[2], S. Kumar[1]
[1]*Sanjay Gandhi Postgraduate Institute of Medical Sciences, Department of Radiation Oncology, Lucknow UP, India*

[2]*Sanjay Gandhi Postgraduate Institute of Medical Sciences, Department of Urology, Lucknow UP, India*

Purpose or Objective: For the locally advanced prostate cancers (LAPC) dose escalated external beam Radiotherapy (dEBRT) with androgen deprivation therapy (ADT) for 2-3 years is the current standard of care. The role of radical prostatectomy (RP) for high-risk prostate cancer is still debated. Better outcomes with RP as compared to dEBRT especially <69 years of age has been reported. However there is no data available from India to compare dEBRT and RP. We did a retrospective study to compare dEBRT or RP in patients with LAPC.

Material and Methods: Medical records of 77 high risk LAPC treated between 2008-2013 were analysed. All biopsy proven adenocarcinoma of prostate with high risk category (PSA>20ng/ml or Gleason score (GS) >7 or T2c-T4) were included. Patients either underwent dEBRT with image guided RT (IGRT) (group 1) or RP (group 2) along with ADT for 2-3 years. Group 1 and 2 had 37 and 40 patients respectively. The primary end points of the study were biochemical relapse free survival (bRFS), bladder and rectal toxicity, urinary incontinence (UI) and secondary end point was cancer specific survival (CSS).

Results: Median age and median pre-treatment PSA in 2 groups were comparable (66 and 65years) and (22 and 23 ng/ml) respectively. Radiologically T3/T4 lesions were present in 65% and 68% and nodal metastasis was seen in 22% and 30% respectively. Median GS was 8 and 7. Positive surgical margins was seen in 70% in group 2. dEBRT dose was 76Gy with conventional fractionation using IGRT using fiducial marker matching . With a median follow up of 3 years, 5-year bRFS was 78% and 72%. (p=0.12) .Median bRFS was not reached in group 1 and in group 2, it was 79 months. Post treatment UI was seen in 0 and 6(15%)(p=0.03). Radiation Therapy Oncology Group (RTOG) grade III-IV bladder toxicity (hematuria and bladder neck contracture requiring incision) was seen in 2(6%) and 7(18%) respectively and rectal toxicity in 2(6%) and peroperative rectal injury occurred in 2(5%) in group 2. Five year CSS was 65% and 87% respectively (p=0.086). Median CSS was not reached in any group. Six (16%) and 7(18%) patients were lost to follow up. Distant metastasis was seen in 8(22%) and 1(3%) (p=0.14).

Conclusion: UI is the complication associated with RP. Dose escalated IGRT for LAPC is no different from RP in terms of bRFS however there was a trend towards better CSS and distant DFS. Further long term follow up is needed to assess the effect on distant disease free survival and CSS.

Electronic Poster: Clinical track: Urology-non-prostate

EP-1386

Adjuvant pelvic radiotherapy for pathological high-risk muscle-invasive bladder cancer

P. Sargos[1], I. Latorzeff[2], A. Fléchon[3], G. Roubaud[4], V. Brouste[5], R. Gaston[6], T. Piéchaud[6], M. Orré[1]
[1]*Institut Bergonié, Radiotherapy, Bordeaux, France*
[2]*Clinique Pasteur, Radiotherapy, Toulouse, France*
[3]*Centre Léon Bérard, Radiotherapy, Lyon, France*
[4]*Institut Bergonié, Medical Oncology, Bordeaux, France*
[5]*Institut Bergonié, Epidemiology and Clinical Research Unit, Bordeaux, France*
[6]*Clinique Saint Augustin, Surgery, Bordeaux, France*

Purpose or Objective: Radical cystectomy (RC) and pelvic lymph-node dissection (PLND) are standard procedures in the management of non-metastatic muscle invasive bladder cancer (MIBC). Loco-regional recurrence (LRR) is a common early event associated with a poor prognosis. The aim of this study is to evaluate adjuvant radiotherapy (RT) for pathological high-risk MIBC.

Material and Methods: We retrospectively reviewed data from patients treated by RC from 3 institutions. Inclusion criteria were MIBC, histologically proven urothelial carcinoma treated by RC and adjuvant RT. Patients with conservative surgery were excluded. LRR free-survival, overall survival (OS) and metastasis-free survival (MFS) were evaluated. Acute toxicities were recorded according to CTCAE V4.0 scale.

Results: Between January 2000 and December 2013, 57 patients with a median age of 66 years (45-84) were included. Post-operative pathological staging was pT2, pT3 and pT4 in 16%, 44%, and 39%, respectively. PLND revealed 28% of pN0, 26% of pN1 and 42% of pN2. For 2 patients, no PLND was performed. Median number of lymph-nodes retrieved was 10 (2-33). Forty-eight patients (84%) received platin-based chemotherapy, 7 in neo-adjuvant and 41 in adjuvant setting. For RT, clinical target volume 1 (CTV 1) encompasses pelvic lymph nodes for all patients. CTV 1 also included cystectomy bed for 37 patients (65%). Median dose for CTV 1 was 45 Gy (4-50). Dose complement of 16 Gy (5-22) corresponding to CTV 2 was achieved in 53 of cases, depending on pathological features. Intensity Modulated RT was performed in one third of patients. With a median follow-up of 40.4 months, LRR occurred in 8 patients (14%) that appeared concomitantly with metastasis in two-third of cases. Three-year loco-regional free survival, MFS and OS were 45% (IC 95% 0.30-0.60), 39% (IC 95%, 0.25-0.52) and 49% (IC 95%, 0.33-0.63), respectively. Acute grade≥3 toxicities were observed in 5 patients (9%). One patient died with intestinal fistula in septic context. No survival or toxicity predictive factor was identified.

Conclusion: Adjuvant radiotherapy for pathological high-risk MIBC is safe and may have oncological benefits. Thus, new prospective trials evaluating this approach with modern RT techniques should be undertaken.

EP-1387

Outcomes after recurrent bladder cancer and (chemo)radiotherapy post TUR-B vs cystectomy

S. Knippen[1], C. Kelling[1], M. Henke[1], A. Grosu[1], T. Brunner[1]
[1]*Universitätsklinik Freiburg, Department of Radiation Oncology, Freiburg, Germany*

Purpose or Objective: To analyze patients treated for recurrent urothelial cancer with radiation therapy with or without concomitant chemotherapy after surgical intervention that was treated from 2000 to 2012 at our centre.

Material and Methods: Our inclusion strategy was to first identify patients treated for the relevant ICD-10 codes. A number of 270 patients matched the ICD-10 criteria (see CONSORT diagram). In a second step, patients that were treated at other sites than the pelvis, treated for distant metastasis, patients suffering from renal cell cancer and cancer of the renal pelvis were excluded. In a third step patients treated with radiation doses that are typical for palliation (<45Gy) were excluded from the analysis. After this, a number of 57 patients remained at the database for further analyses. All patients were treated for recurrent urothelial cancer of the bladder, of the ureter or of the urethra. All patients were treated using 3D conformal radiation therapy. Mean prescribed dose was 54.22Gy (range 45-72Gy). Mean time from first diagnosis to radio(chemo)therapy was 22.9 months (range one week to 276 months). In 24 cases (42.1 %) a concomitant chemoradiotherapy was applied.

Results: Mean survival from the beginning of radiation treatment was 39.2 months (CI 95 % 24.7 – 53.69 months; median survival 14 months CI 95% 6.8 -21.1). Tumor stage at the time of surgical intervention did not show an impact on overall survival (p=0.96). Patients were divided into three subgroups, depending on the surgical intervention prior to radiation therapy: most patients were treated by TUR(n=38) before the indication to radiation therapy was made, 13 patients had a TUR followed by cystectomy in their further history and in 6 patients early cystectomy was the first type