modalities and strongly suggest durability of our results. Further follow up is needed to confirm this.

PO-0701 Toxicity and outcome of recurrent prostate cancer patients treated with 11C-Choline PET/CT-guided tomotherapy

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Purpose/Objective: To update a Hypofractionated Tomotherapy Treatment Plan (HTT) feasibility-study, by evaluation of toxicity and outcome, in lymph nodal relapse of patients (pts) already treated for prostate cancer. The role of 11CCholine PET/CT in detecting prostate cancer recurrence and as a ‘guide’ for Tomotherapy treatment was also evaluated.

Materials and Methods: From January 2005 to August 2012, 49 prostate cancer pts with biochemical recurrence and evidence of lymph nodal relapse at 11CCholine PET/CT scan (PET/CT0) were treated with moderately hypofractionated Tomotherapy. All pts had undergone previous prostatectomy, radical radiation therapy (RT) or prostatectomy + RT and all were currently receiving systemic therapy. One patient was treated 3 times, two patients twice: the total number of therapies was 53. In 49/53 cases PET/CT0 detected metastases (LNMs) at para-aortic and/or pelvic level, in 4 cases at the mediastinal level. Pelvic and/or lombo-aortic lymph nodes were treated to 51.6 Gy/28 fractions and PET/CT0 positive lymph nodes were treated with higher dose using a simultaneous integrated boost. A Megavoltage CT scan (MVCT) was performed before each fraction to allow correct patient repositioning in order to reduce PTV margin and side effects to surrounding tissues. The doses ranged from 42 Gy in 6 fractions to 74.2 Gy in 28 fractions. To evaluate treatment efficacy, PSA serum measurement (PSA1) (all pts) and 11CCholine PET/CT(PET/CT1) (n=19) were performed after treatment and compared to basal evaluations.

Results: In 17/49 pts (53 therapies) 6 genito-urinary (GU) 1 acute toxicities were recorded. Only 5 pts had GU toxicity, 2 GU were observed. 3 pts had G1 rectal toxicity and 3 pts G1 erythema. No G3-G4 acute side effects were registered. Among the 41 pts with follow-up longer than 3 months, 5 had G1 late toxicity, 1GU and 4GU were observed. 3 presented G2GU toxicity, one G2 rectal toxicity and 3 G3 GU toxicity. With a median follow-up of 24 months (range: 0-88) 37/41 pts had a significant reduction of PSA value after HTT. Of the 19 pts with PET/CT1 evaluation, 14 had Complete Metabolic Response and 2 Partial Metabolic Response. During follow-up, only 3 of the 41 evaluable pts had progression in the irradiated area and 7 in other sites. One died of tumour progression. Half of the patients in complete remission maintained good PSA control even after suspending their medical treatment. Mean Overall survival was 31.73 months; Overall Survival at 36 months was 85.7%, PFS at 36 months was 32.5%.

Conclusions: These preliminary data show that HTT 11CCholine PET/CT-guided with IGRT for precise repositioning is safe and effective in lymph nodal relapse of prostate cancer pts and could be a valid alternative to chemotherapy. Although further evaluations are necessary, the good rate of local control suggests that HTT treatment guided by 11CCholine PET/CT images may reasonably be proposed in these patients.

PO-0702 Change over time of IPSS in two prostate cancer cohorts: radical radiotherapy vs active surveillance

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Purpose/Objective: An advantage for the use of carbogen and nicotinamide to overcome tumour hypoxia during radiotherapy (RT) has been demonstrated for bladder and head and neck cancers (1, 2). The aims of this trial are: (1) to evaluate the safety of applying this treatment strategy to patients receiving RT for high risk prostate cancer; (2) to establish the biochemical progression free survival in patients treated with hypoxia modification and (3) to study the changes in the tumour micro-environment using multi-parametric magnetic resonance (MR) imaging at different time points during the 

Materials and Methods: Between Dec 09 and Jul 12, 211 RT pts completed IPSS at baseline (T0) and 86/211 at one year from RT end (T1). Between Nov 07 and Nov 12, 145 AS pts completed the IPSS questionnaire at T0 and 57/145 at one year from AS enrolment (T1). IPSS was divided into 5 groups: ≤0 (no symptoms, symp), 1-7 (mild symp), 8-14 (mild to moderate symp), 15-19 (moderate symp) and 20-35 (severe symp). Possible associations between clinical variables and IPSS were determined through Pearson correlation coefficient. Clinically significant changes over time were defined as at least 4, 6, 8 IPSS increase, defined as mild, moderate and severe worsening, respectively. Z-test for proportions was used to investigate statistically significant differences in % of pts with mild to severe GU symp worsening in the two cohorts (AS vs RT).

Results: Mean age: 65 vs 70 in AS and RT. Mean initial PSA: 5.1 ± 12.8 ng/ml, AS vs RT. AS pts were all slow-risk; RT pts: 26% low, 41.5% intermediate and 32.5% high-risk. Figure 1 shows the distribution of IPSS classes at T0 stratified by age and cohort. Youngest RT pts reported the best IPSS, while AS pts >70yrs showed the highest rate (24%) of moderate/severe symp.

Conclusions: Our prostate cancer RT population reported less GU symp (as measured by IPSS) at T0 with respect to the AS population. % of pts with mild to severe GU symp worsening after 1yr follow-up was higher in AS, but differences were not statistically significant. It has to be underlined that T1 AS IPSS measurement was performed one month after prostate re-biopsy (as established by AS protocol) and worsening of GU symp can be caused by biopsy-related acute toxicity. This hypothesis is confirmed if AS IPSS at 2yrs is considered: 85-90% of pts recovered to T0 IPSS level. With respect to RT IPSS scores, the use of neo-adjuvant hormone therapy (40% of pts) could explain both T0 and T1 better IPSS in this cohort. Psychological distress or age-related components do not seem to play a significant role in GU function worsening at 1 yr in RT cohort. Longer follow-up is needed to determine the true impact of these variables on late GU radio-induced changes.

PO-0703 PROCON a phase Ib/II trial to evaluate concomitant carbogen & nicotinamide during prostate RT: early toxicity report

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Purpose/Objective: An advantage for the use of carbogen and nicotinamide to overcome tumour hypoxia during radiotherapy (RT) has been demonstrated for bladder and head and neck cancers (1, 2). The aims of this trial are: (1) to evaluate the safety of applying this treatment strategy to patients receiving RT for high risk prostate cancer; (2) to establish the biochemical progression free survival in patients treated with hypoxia modification and (3) to study the changes in the tumour micro-environment using multi-parametric magnetic resonance (MR) imaging at different time points during the