and 3 rectal toxicities, respectively with no rectal fistula or ulcer at this time.

Conclusion

The injection of HA gel during sPPI for local failure after primary prostate dose-escalated radiotherapy is feasible with low rates of short-term rectal toxicity.

EP-1582 Feasibility of IMRT plus regional hyperthermia for high-risk and very high-risk prostate carcinoma

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Purpose or Objective

For patients with high-risk or very high-risk prostate cancer, the primary treatment modality is external beam radiation therapy combined with androgen deprivation therapy (ADT). However, there is a scope for improving the clinical outcomes. Previous clinical phase I/II trials have confirmed that three-dimensional conformal radiation therapy in combination with regional hyperthermia is promising and feasible without causing severe toxicity in patients with prostate cancer. However, there are no clinical reports on the combination of intensity-modulated radiotherapy (IMRT) with regional hyperthermia for treating prostate cancer. The purpose of this study was to evaluate the feasibility of IMRT plus regional hyperthermia for high-risk and very high-risk prostate carcinoma.

Material and Methods

Between February 2012 and September 2015, the data of 32 consecutive patients with high-risk and very high-risk prostate carcinoma who were treated with IMRT plus regional hyperthermia were retrospectively analyzed. The total planned dose of IMRT was 76 Gy for all patients, with a fractional dose of 2.0 Gy. Hyperthermia was applied once a week, using an 8 MHz radiofrequency capacitive device immediately after IMRT. Both the upper and lower electrodes measured 30 cm in diameter and were placed on opposite sides of the pelvis, with the patient in the prone position. The treatment goal was at least 30 min of continuous heating after the radiofrequency output was increased to the patient's tolerance threshold. Intrarectal temperatures at the prostate level were measured using a four-point microthermocouple sensor to evaluate the thermal dose during the heating sessions. Neoadjuvant ADT was performed in all patients. The thermal dose assessed based on the intrarectal temperatures, completion rates, and toxicity of the combined therapy were evaluated.

Results

The median follow-up time was 34 months. The planned IMRT dose was administered in all patients. The number of heating sessions ranged from two to six (median five). The median duration of heating was 50 (30–50) min in each heating session. The thermal dose, which was measured as the cumulative equivalent min at 43°C for the T90 (CEM43T90), ranged from 0.1 to 28.2 min (median, 8.8 min). Acute grade 2 genitourinary toxicity was seen in four (13%) patients. Acute toxicity of grade 3 or worse was not detected. Skin burn presenting as a subcutaneous induration was observed in three (9%) patients, but this symptom spontaneously resolved after the completion of regional HT. Late toxicity of grade 2 or worse was recognized in only one patient (grade 3 proctitis). Biochemical relapse occurred in one patient during the follow-up.

Conclusion

For high-risk and very high-risk prostate carcinoma, IMRT plus regional hyperthermia was feasible with acceptable toxicity, and further studies to assess the efficacy of this combined treatment are warranted.

EP-1583 An endorectal balloon reduces patient-reported GI toxicity in postop radiotherapy of prostate cancer

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Purpose or Objective

In dose-escalated radiotherapy (RT) of prostate cancer late rectal toxicity is one of the dose limiting factors. In primary RT, an endorectal balloon (RB) has been shown to reduce the dose to parts of rectum and anus, stabilize prostate position and may therefore be a means to improve therapeutic ratio.

In postoperative radiotherapy the effect of RB is less well-known, in general a dose of <70 Gy is applied and therefore no clinical outcome data regarding the benefit of a RB is available.

The aim of this retrospective study was to assess the patient-reported late rectal toxicity (GItox) 3, 12, and 24 months after RT in postoperative prostate cancer patients receiving a daily RB, compared to an earlier cohort, which was treated without RB.

Material and Methods

We identified all patients who received postoperative radiotherapy (66 Gy in 33 fractions) after radical prostatectomy, had no nodal or distant metastases and at least one follow-up visit. In those treated between 2008 and 2013, no RB was applied whereas between 2014 and 2016, a RB was routinely applied. All patients were followed with the same set of questionnaires and outpatient visits. Results where compared and analysed by Chi^2-Test (SPSS 23.0).

Results

In total, 433 patients were retrieved, of whom 194 were treated with and 239 patients without RB. The patients were well balanced according initial NCCN risk and other confounding factors.

The maximum patient reported GItox in the first 2 years after RT was low: 75,5%, 20,8%, 3,7 %, 0 % reported no, grade 1 (G1), G2 and G3 GItox, respectively. The prevalence of rate of G1+ GItox was 16,5%, 15,1% and 18,0% at 3, 12, and 24 months, respectively.

No GItox within 2 years occurred in 71,1% patients without RB versus 80,9% with RB. G1+ GItox was reported in 28,5% without RB and in 19,1% with RB. G2 GITox was reported by 13 (5,4%) patients without and by 3 (1,5%) with RB. These results are statistically significant at $p<0,025$.

cumulative tox @ 2 years	G0	G1	G2	Sum
no RB	171 (71,5%)	55 (23%)	13 (5,4 %)	239
RB	157 (80,9%)	34 (17,5%)	3 (1,5%)	194

Conclusion
This retrospective data show a significant and clinically relevant reduction of GItox after postoperative RT for prostate cancer using an endorectal balloon. A prospective randomized trial is currently being prepared.

EP-1584 Prostate SBRT escalation dose protocols and self-reported quality of life..
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Purpose or Objective
Dose escalation in prostate cancer trials showed an increased toxicity. Low alpha-beta ratio of prostate cancer make suitable to escalate dose by extreme hypofractionation. Stereotactic Body Radiation Therapy (SBRT) in prostate cancer is a novel precise strategy which allows delivering high doses per fraction with high accuracy to the prostatic gland in a low number of fractions. In order to evaluate the feasibility and toxicity of two regimens of hypofractionated stereotactic body radiation therapy self-reported quality of life (QOL) measures were obtained.
Material and Methods
Two prospective phase I-II studies were approved by our institutional review and ethics board. Inclusion criteria were: Trial1) T1-2N0M0, Gleason Score 6–7, PSA ≤ 20 ng/mL, and IPSS 0–7. Dose 85 GyEqD2. Trial 2) T3aN0M0 Gleason score 8 or less (N+risk<25%) and IPSS 0-12. Dose 87GyEqD2. Hormonal-therapy was prescribed according to risk classification. Image Guided RT with Cone Beam CT was mandatory. Dose SBRT was delivered at a prescribed planning target volume (PTV) 35 Gy in five fractions in 5 alternative days or 9 Gy after 60 Gy 2 Gy per fraction in 30 days, using with RapidArc VMAT, with 6 MV FFF photons. CTCAE v4.0 morbidity scores were used to assess toxicities. Health-related quality of life questionnaire was administered centrally by telephone interview before treatment and during follow-up (at 3, 6 and 12 months).
Results
First's 40 patients of 47 recruited were included . Mean age was 70.2 years. Median follow-up was 18 months (3-44).Twenty-two patients were included in trial 1 and 18 in trial 2. According to D'Amico risk classification for trial 1), 3/22 patients were low-risk and 19/22 were intermediate risk, for trial 2) 18 patients were high risk. All patients completed the treatment as programmed with good tolerance. No toxicity greater than grade 2 was observed. EPIC urinary values were significantly higher at 6 (96.57) and 12 months (91.59) for SBRT (5x7) vs trial 2 (81.26 and 80.49). No differences were seen in EPIC bowel scores. EPIC hormonal was higher at 6 and 12 months in the first group 85.09 and 81.57 vs 64.09 and 76.14 in the 9 Gy boost patient's trial.
Conclusion
Both SBRT regimes with FFF beams for low-intermediate-risk and high risk prostate cancer are feasible and well tolerated in selected patients. Differences in EPIC hormonal QLQ measures are related to prolonged hormonal treatment in high risk patients. EPIC values related to radiation treatment are not different. Long-term follow-up is needed for assessment of late toxicity and outcomes.

EP-1585 Whole pelvic nodal radiotherapy (RT) vs. prostate bed RT after prostatectomy for prostate cancer
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Purpose or Objective
In international guidelines, target volumes for postoperative radiotherapy (PORT) after radical prostatectomy concern the bed of the prostate and seminal vesicles. The benefit of whole pelvic nodal radiotherapy (WPRT) in the case of PORT remains uncertain.
Material and Methods
We reviewed the charts of all patients diagnosed with high-risk prostate cancer after radical prostatectomy who were selected for PORT and treated with adjuvant radiotherapy (n= 242, 43.1%) or early salvage RT (n= 320, 56.9%) between 2002 and 2011. 111 patients (19.8%) who underwent WPRT were compared with 441 patients (80.2%) who had prostate bed radiotherapy only (PBRT). We examined associations between patient, tumor, and treatment characteristics and biochemical progression-free survival (bPFS), disease-free survival (DFS) and overall survival (OS) with uni- and multivariate analyses using Cox models. Acute and late toxicities were also compared between the two groups.
Results
We found a significantly lower rate of acute G2+ gastrointestinal (GI) toxicity with PBRT than with WPRT with neither difference in acute G3+ nor on late GI toxicity. Regarding genitoruinary (GU) toxicity, we found no difference in acute G2+ or G3+ toxicity but rates of late G3+ GU toxicity were significantly lower in PBRT (1.55%) than in WPRT patients (p= 0.035). With a median follow-up of 65.2 months [95% CI: 62.8 - 67.9], a deleterious effect of WPRT was observed on OS (HR=3.27 [95% CI: 1.44 - 7.45], p=0.009). We found no impact of WPRT on bPFS (HR=0.79 [95% CI: 0.49 - 1.25], p=0.31) or DFS (HR=0.97 [95% CI: 0.63 - 1.49], p=0.88). Only a positive surgical margin was an independent prognostic factor for better bPFS. Age≥63 years and WPRT (HR=2.86