Materials and Methods: All men treated with AA monotherapy in population prior to radical prostate radiotherapy between April 2004 and December 2008 were identified and individually case matched for key prognostic factors with men treated with neo-adjuvant LHHRHa monotherapy, PSA kinetics and absolute pre-RT, post neo-adjuvant hormone PSA (PRPH-PSA) level and subsequent BFTS were analyzed.

Results: 65 men treated with AA monotherapy were individually matched with 65 men treated with LHHRHa. The median follow-up was 74 months and 67 months respectively. There were no significant differences in pre-treatment patient or tumour characteristics. Statistically significant differences were noted between groups in the PRPH-PSA with a geometric mean of 2.0ng/ml (range 0.1 - 11.2ng/ml) for AA patients and 1.0ng/ml (range 0.1 - 11.1ng/ml) for LHHRHa patients (p=0.001). The geometric mean PSA halving time during the neo-adjuvant period of 14.6 weeks (range 2 - 160 weeks) in the AA treated group was not statistically significantly different when compared to the mean of 16.1weeks (range 2.1-96.8 weeks) for LHHRHa patients (p=0.056). There were however no differences in PSA velocity.

A PRPH-PSA of <1.0ng/ml and <0.1ng/ml was seen in 16 (24.6%) and 2 (3%) of the AA patients and 34 (52.3%) and 3 (4.6%) of LHHRHa patients respectively.

Phoenix biochemical failure was seen in 14 (23.4%) and 9 (13.8%) of AA and LHHRHa patients respectively, with the log rank test indicating no statistically significant difference between the groups.

Conclusions: Our case-matched study demonstrates that neo-adjuvant AA therapy does not result in equivalent PRPH-PSA suppression when compared to neo-adjuvant LHHRHa alone. However there is no statistical difference in BFTS between the cohorts at an overall median follow-up of 72 months. Longer follow-up is required.

EP-1328
Postoperative radiotherapy in bladder cancer patients in presence of neobladder: Safety and morbidity
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Purpose/Objective: Role of postoperative radiotherapy (RT) in locally advanced bladder cancer still to be determined. Many non-randomized clinical trials and retrospective series showed that it improves local tumor control and disease free survival, it is part of our routine practice in Egypt for T3/T4 bladder cancer patients. However, there is usually a fear of irradiating a neobladder. The aim of this study is to assess the results and toxicity of 8 patients treated by RT in presence of neobladder.

Materials and Methods: Between 2007 and 2013, 8 patients with T3/T4a bladder cancer patients treated with radical cystectomy in which the pathology showed positive margin with an orthotopic bladder inserted. Data collected included: Age, gender, date of surgery, pathology showing microscopic residual disease. Shape and status of the neobladder assessed by Computer tomography. Hydroureter, hydroprolipsis, continent status. Progression free survival and overall survival calculated from the date of surgery till the first recurrence or death respectively.

Results: Ninety eight patients identified in our records between 2007 and 2013, only eight patients qualified for our retrospective analysis. Three female and five male patients, treated by radical cystectomy and lymphadenectomy with orthotopic bladder. Postoperative radiotherapy initiated 4 to 6 weeks postoperatively. Mean age 54 year (range:43-60), renal profile was adequate in 6 patients to receive postoperative adjuvant chemotherapy in addition to radiotherapy. Toxicity extracted from the files showed: Diarrhea GI-II in 5 patients. Skin dermatitis GI in all patients (100%), treatment interruption for one week in 2 patients due to GII diarrhoea. Late complications: Incontinence improved in 6/8 patients with one patient had stress incontinence, the last two patients had persistent incontinence. Thickened wall of the neobladder in all patients, no rejection or resurgery needed, Hydroureter and hydroprolipsis occurred in 3 patients. Adequate renal function maintained in all 6 patients with initial good renal profile. Disease free survival and overall survival were 50% and 45% at 2 years.

Local tumor control was 75%. Six patients had distant metastasis to: the lung, paraaortic lymph nodes (one patient) and bone metastasis (two patients. The last two patients died of extensive local recurrence.

Conclusions: To our knowledge this is the first report for postoperative radiotherapy in bladder cancer patient with neobladder. Adjuvant radiotherapy post radical cystectomy with orthotopic bladder is safe and didn’t increase patients morbidity. In contrary it improve local tumor control. However, more data is needed to make a conclusion.

Materials and Methods: Data were collected regarding the marketing of seed in both forms, between the years 2005 and 2011, the Institute of Energy and Nuclear Research (IPEN), which is responsible for the distribution of all seeds used in the country.

Purpose/Objective: To our knowledge this is the first report for postoperative adjuvant chemotherapy in addition to radiotherapy. Toxicity extracted from the files showed: Diarrhea GI-II in 5 patients. Skin dermatitis GI in all patients (100%), treatment interruption for one week in 2 patients due to GII diarrhoea. Late complications: Incontinence improved in 6/8 patients with one patient had stress incontinence, the last two patients had persistent incontinence. Thickened wall of the neobladder in all patients, no rejection or resurgery needed, Hydroureter and hydroprolipsis occurred in 3 patients. Adequate renal function maintained in all 6 patients with initial good renal profile. Disease free survival and overall survival were 50% and 45% at 2 years.

Local tumor control was 75%. Six patients had distant metastasis to: the lung, paraaortic lymph nodes (one patient) and bone metastasis (two patients. The last two patients died of extensive local recurrence.

Conclusions: To our knowledge this is the first report for postoperative radiotherapy in bladder cancer patient with neobladder. Adjuvant radiotherapy post radical cystectomy with orthotopic bladder is safe and didn’t increase patients morbidity. In contrary it improve local tumor control. However, more data is needed to make a conclusion.

Results: The data obtained can be seen in the table 1 and figure 1.

Table 1: Total loose and strings seeds marketed between the years 2005-2011.

<table>
<thead>
<tr>
<th>Year</th>
<th>Loose Seeds</th>
<th>String Seed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>6343</td>
<td>27360</td>
<td>33703</td>
</tr>
<tr>
<td>2006</td>
<td>5880</td>
<td>29333</td>
<td>35213</td>
</tr>
<tr>
<td>2007</td>
<td>7506</td>
<td>27338</td>
<td>34842</td>
</tr>
<tr>
<td>2008</td>
<td>5835</td>
<td>27380</td>
<td>33215</td>
</tr>
<tr>
<td>2009</td>
<td>6071</td>
<td>28400</td>
<td>34471</td>
</tr>
<tr>
<td>2010</td>
<td>5383</td>
<td>26720</td>
<td>32103</td>
</tr>
</tbody>
</table>

The table data presents that the string seeds are about 80% more marketed than the loose seeds, with an increase in 2011 to more than 90% of the total. The preference for the medical profession is precisely the reduction of seeds migration, an event that, in theory, could affect the dosimetry of the region and also cause unnecessary damage to healthy tissues or organs.

Figure 2 shows the impact in seed migration.

Figure 2 - Migration rate comparison between seeds loose, Loose+string and String seeds.

By analyzing the presented data it’s clear that when using loose seeds 46% of patients had seed migration. The number decreased to 10.3% with mixed use, reaching only 1.4% of patients when used only string seed. Most seeds that migrate end housed in the pulmonary vasculature, but have been reported cases of accommodation in the right ventricle and coronary artery. Since the only 1% of the seeds migrates, the treatment efficiency is hardly impaired. However, while no harmful effects due to migration of the seeds was observed, the reduction of its occurrence is highly desirable by the medical class.

Conclusions: It can be concluded that the use of seed polymer strings in Brazil is much higher than using loose seeds (about 4 times). The main argument is the reduction of the possibility of seed migration to other
parts of the body, as though no adverse effect has been reported, there is a potential damage.

Results:

Statistics: Kaplan-Meier and Cox regression model, univariate and multivariate analysis. Median time to recurrence and 5 year BCR free survival in T3a tumors were: 122 months and 73% for 2-3 points, 72 months and 59% for 4 points, and 40 months and 39% for 5 points, respectively. The main limitation of this study represents its retrospective approach.

Conclusions: Based on our data, a new predictive model and treatment guideline of patients with T2/T3a R1 prostate cancer was developed. Median time to recurrence and 5 year BCR free survival in T3a tumors were: 122 months and 73% for 2-3 points, 72 months and 59% for 4 points, and 40 months and 39% for 5 points, respectively. The main limitation of this study represents its retrospective approach.

EP-1331

Dosimetric effects of MRI-CT registration on IMRT prostate radiotherapy

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Purpose/Objective: MRI scans are increasingly used on prostate radiotherapy due to its superior soft tissue delineation. It has been found that prostate volumes segmented on MRI images are smaller than prostate volumes derived from CT-scans, but little data are available regarding the dosimetric effects associated with the MRI use.

Materials and Methods: Seven prostate cancer patients underwent T2 weighted MRI-scan just before the CT-scan simulation. MRI images were acquired on a Phillips Intera 1.5 T; TE 120 ms; TR 3000 ms; Field of view 180mm; Matrix 256x512; Slice thickness 3 mm; Number of signal averages 4; Scan percentage 80%; TSE factor 16; Scan duration 5:12. CT-scans were undergone with contrast filled bladder. Both image studies were rigidly registered and prostate and organs at risk (OARs, rectum and bladder) were segmented (bladder volume was only segmented on CT images). A CT-based and a MRI-CT registered IMRT plans were calculated under the same conditions. A dose of 70 Gy was prescribed to the 99% isodose. Planning target volume (PTV) and OARs doses-volume histograms (DVH), conformation index (CI= (CT volume VS95%/PTV volume) and homogeneity index (HI=PTV D95% - PTV D95%; Prescribed dose) * 100) were calculated and compared. Data are expressed as median. Paired non-parametric tests were used for comparisons.

Results: PTV and rectum volumes decrease with the use of MRI (75.23 cc vs. 56.59 cc, p=0.018; 37.65 cc vs. 23.98 cc, p=0.063; CT and MRI plans respectively). CI was the only metric calculated that reached significance (2.71 vs 3.2, p=0.028; CT and MRI plans respectively).

Table 1. DVH criteria and plans metrics of PTV and OARs volumes are expressed as a median, dose, GTV, cc, in percentage. No significant difference (p>0.05) was found between CT and MRI plans.

<table>
<thead>
<tr>
<th>Metric</th>
<th>CT-based</th>
<th>MRI-CT registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTV D95% (cc)</td>
<td>75.23</td>
<td>56.59</td>
</tr>
<tr>
<td>CTV D95% (cc)</td>
<td>37.65</td>
<td>23.98</td>
</tr>
<tr>
<td>CI</td>
<td>2.71</td>
<td>3.2</td>
</tr>
<tr>
<td>HI</td>
<td>10.39</td>
<td>17.8</td>
</tr>
<tr>
<td>V95% (cc)</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Conclusions: The lack of statistically significance could be partially due to the small number of analyzed plans. Large analysis must be undergone in order to confirm results.

EP-1332

Patient-reported outcomes with a validated LENT-SOMA questionnaire for radiation therapy following prostatectomy

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Purpose/Objective: Although there is no evidence of overall survival benefit, post-prostatectomy (RP) external beam radiotherapy (RT) has been shown to improve biochemical progression free survival. In