During treatment patients received supportive cares as lactospore and probiotic diet supplement, and at the end of treatment supportive care as vaginal ovules were suggest to manage a vaginal discomfort or mucosal toxicity. At every follow up, patients underwent to gynaecologic exam and urynalysis at 1month after treatmentand every 6 months later.

Results: 15 pts reported acute GU toxicity: 6 G1, 9 G2 and 2 pts developed vaginal stenosis. GI acute toxicity was observed in 10 pts as G1, no G2-G3 was observed. One patient experienced late toxicity GU G1, and 2 pts had vaginal stenosis. No GI late toxicity was observed.

Conclusions: HDR-BRT with vaginal cylinder treatment is feasible and well tolerate, specially with a low GI toxicity, but to realize a good treatment with a lower as possible toxicity in GU and to preserve bowels keeping a low toxicity seem to be very important the fullness of bladder. Empty bladder seem to have a worse impact on GI toxicity. Vaginal stenosis was the main disorder we observed in a long term follow up, so the use of vaginal dilatators is recommended to prevent vaginal stenosis.

EP-1653
Loco-regional lymph nodes irradiation in left breast cancer: a dosimetric comparison between CRT and Tomotherapy
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Purpose/Objective: The aim of the study is to investigate dosimetric aspects in left breast radiotherapy when the internal mammary chains (IMC), the three levels of axillary lymph nodes (ALN) and supraclavlear lymph nodes (SLN) are included in the irradiation target volume beside the breast alone. Recent studies focused their attention on the use of more complex irradiation techniques, as IMRT, in order to reduce the OAR toxicity. The present study compares the dose distributions obtained with two different irradiation techniques, in 4 scenarios with increasing complexity of target volume definition.

Materials and Methods: CT scans from one female patient with left breast cancer were considered. The patient was immobilized with wing system in supine position and in free breath condition.

Four different planning target volumes (PTVi) scenarios were created, based on ESTRO Guidelines, as following:

- PTV1: breast
- PTV2: breast plus IMC
- PTV3: breast plus IMC, 3rd axillaries level and SLN
- PTV4: breast plus ALN levels.

CRT was planned for each PT Vi scenarios with Pinnacle TPS using multiple 6MV photon beam delivered with Artiste Linac. Helical Tomotherapy (HT) plan parameters were: 2.5cm field width, 0.287 pitch. A dose of 50 Gy in 25 fractions was prescribed. Spinal Cord, heart, lungs, contralateral breast were drawn as OARs. Dose-volume constrains were set based on QUANTEC recommendations and toxicity data previously published in IMRT dosimetric studies. The performance of the different irradiation techniques were compared in terms of plan quality (PTV dose conformity and OAR constraints compliance).

Results: Irrespective of scenario complexity, the goal of 95% of the prescribed dose to 100% of PTV was reached by TH. CRT, in particular for PTV4, showed worse quality coverage (90%-95% of prescribed dose).

Mean dose ($D_{mean}$) and volume percentage receiving 20 Gy ($V_{20}$) for ipsilateral lung, $D_{mean}$ and $V_{25}$ for heart, $D_{mean}$ and the maximum dose ($D_{max}$) for contralateral breast were reported in table 1.

We observed more advantage in HT plans for ipsilateral lung (especially for PTV4) and, at the same time, a slightly increase in heart and contralateral breast mean doses respect to CRT.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>OAR</th>
<th>CRT</th>
<th>HT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTV1</td>
<td>Ipsilateral lung</td>
<td>$D_{max} = 53.6 Gy; V_{20} = 70%$</td>
<td>$D_{mean} = 36.5 Gy; V_{20} = 90%$</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td>$D_{max} = 246 Gy; V_{20} = 75%$</td>
<td>$D_{mean} = 170 Gy; V_{20} = 90%$</td>
</tr>
<tr>
<td>PTV2</td>
<td>Ipsilateral lung</td>
<td>$D_{max} = 150 Gy; V_{20} = 40%$</td>
<td>$D_{mean} = 150 Gy; V_{20} = 20%$</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td>$D_{max} = 250 Gy; V_{20} = 45%$</td>
<td>$D_{mean} = 170 Gy; V_{20} = 50%$</td>
</tr>
<tr>
<td>PTV3</td>
<td>Ipsilateral lung</td>
<td>$D_{max} = 135 Gy; V_{20} = 25%$</td>
<td>$D_{mean} = 130 Gy; V_{20} = 10%$</td>
</tr>
<tr>
<td></td>
<td>Heart</td>
<td>$D_{max} = 50 Gy; V_{20} = 35%$</td>
<td>$D_{mean} = 45 Gy; V_{20} = 20%$</td>
</tr>
</tbody>
</table>

Conclusions: This study proved that the use of more complex irradiation techniques can allow to better manage various extension of lymph nodes target volumes in breast cancer RT with a sensible spare of OARs.

EP-1654
2D-based direct evaluation of field alignment for adjuvant breast cancer with field-in-field tangential technique
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Purpose/Objective: Field-in-field technique is applied to ameliorate the conventional planning with 2 tangential fields for adjuvant treatments of breast cancers. It is based on the use of additional smaller fields within the main ones, in order to improve different parameters of the treatment plan. Ideally, each of the smaller additional fields should be delivered in perfect alignment to the main one. We evaluated the alignment of field-in-field to the main field during the treatment.

Materials and Methods: We analyzed patients treated with Field-in-field technique. Each patient underwent to evaluation of set-up error at 3 different time points over the treatment by electronical portal image (EPI) on the conventional main fields (CMF). An additional EPI was performed on each field-in-field (FIF) at the moment of the FIF delivery during the treatment to record the specific misalignment reported at the moment of the delivery. Setup errors in millimeters were derived by the conventional EPI. The misalignment between the FIF and the CMF was derived by subtraction of respective setup errors. A statistical analysis of the significance of differences reported on treatment plans between tangential conventional (CTP) and