receiver operating characteristic curve (ROC) analysis to define the cut-off points for significant parameters.
Results: Median follow-up time was 20.5 months (range 4 – 91) and 18 months (14-80) for primary and secondary lung cancer. RP G1-2 has been observed in 23/54 patients (42.59%); no pulmonary toxicity >G2 has occurred, as there has been no toxicity of controlateral lung and other organs at risk. Univariate statistical analysis showed that GTV(p=0.036), PTV (p=0.022), MLD (p=0.003) and V5 (p=0.002), V10 (p=0.002), V20 (p=0.012), V30 (p=0.002) were significant variables for the risk of developing RP. Multivariate statistical analysis has found that the predictor variables of RP are V5 (p=0.004), V10 (p=0.009), V20 (p=0.014), V30 (p=0.007) and the MLD (p=0.011). The greatest risk was connected to the variable V30 (HR 1.985). On the ROC curve, the cut-off values of ipsilateral lung V5,V10,V20,V30 and MLD were 29.50%,19.50%,9.55%,4.58% and 4.7%, respectively (Fig.1). A cutoff of 4.58% for V30 had a sensitivity of 80% and specificity of 82.1%.

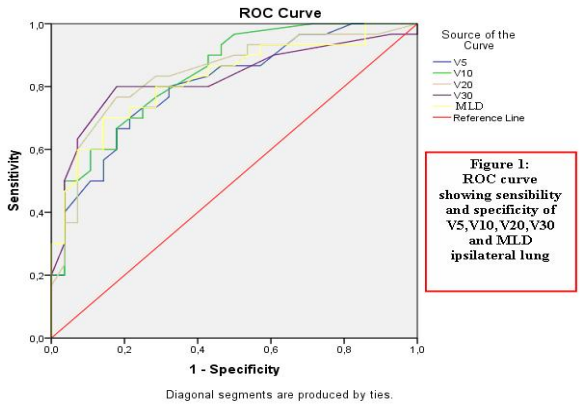

Figure 1: ROC curve showing sensibility and specificity of V5,V10,V20,V30 and MLD ipsilateral lung

Conclusions: In our study stereotactic body radiotherapy was well tolerated for primary and secondary lung cancer treatment. V5, V10, V20, V30 and MLD were significantly predictive of RP.

Poster: Clinical track: Breast

PO-0677

Rotational intensity Modulated Radiation Therapy in complex adjuvant breast and nodes irradiation

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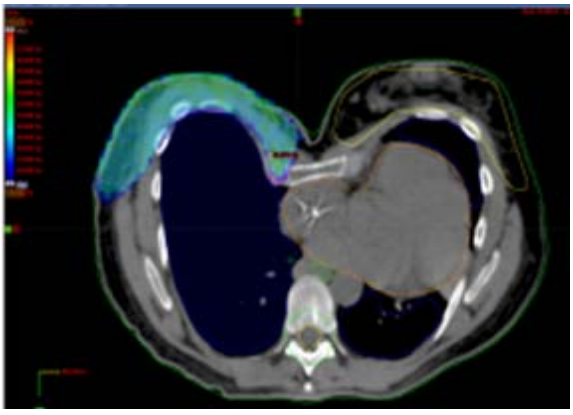
Purpose/Objective: Analyse clinical and dosimetric results of helical tomotherapy (HT) and rapidarc (RA) in complex adjuvant breast and nodes (IMC and supraclavicular nodes) irradiation with simultaneous-integrated boost.
Materials and Methods: Seventy-nine patients were included in the study (37 HT and 42 RA). Treatments were in 29 fractions. Dose prescriptions were 63.8 Gy (HT) and 63.2 Gy (RA) in the tumour bed, 52.2 Gy in the breast (HT and RA), 50.4 Gy in supraclavicular nodes and IMC with HT and 52.2 Gy and 49.3 Gy in IMC and supraclavicular nodes with RA. Margins to the PTV were larger in the rapidarc group (7mm vs 5mm).
Results: For HT cohort, the coverage of clinical target volumes (CTV) was as follows: CTV tumour bed: 99,4%±2,4; CTV breast: 98,4%±4,3; CTV supraclavicular nodes: 99,5%±1.2; CTV IMC: 96,5%±13,9. For RA cohort, the coverage of CTV was as follows: CTV tumour bed: 99,7%%±0,5, CTV breast: 99,3 %±0,7; CTV supraclavicular nodes: 99,6%±1,4; CTV IMC: 99,3%±3. For ipsilateral lung, Dmean and V20 were 13, 5 Gy±1, 4, 20,9%±4,9 (HT) and 13,6 Gy±1,4, 20,1%±3,2 (RA). Dmean and V30 of the heart were 7,4 Gy±1,4, 1%±1 (HT) and 10,3 Gy±4,2, 2,5%±3,9 (RA). For controlateral breast Dmean was 3, 6 Gy±0,7 (HT) and 4,6 Gy±0,9 (RA). There was 5% of acute skin toxicity grade ≥ 3 in the two cohorts and 35% of oesophageal toxicity grade≤ 2 in HT and 40% in RA.
Conclusions: Rotational IMRT in complex adjuvant breast and nodes irradiation allows a good coverage of target volumes with an acceptable acute tolerance. A longer follow-up is needed to assess the impact of low doses to healthy tissues



Breast irradiation with HT in a patient with funnel chest (isodose 45 Gy)

PO-0678

IMRT with simultaneous integrated boost in post-operative breast irradiation

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Purpose/Objective: To investigate the feasibility and tolerance in the use of adjuvant Intensity Modulated Radiation Therapy (IMRT) and simultaneous integrated boost (SIB) in patients with a diagnosis of breast cancer after breast-conserving surgery (BCS).
Materials and Methods: Between September 2011 to February 2013, 150 women with a diagnosis of breast cancer were treated with SIB-IMRT after BCS in our Institution. A dose prescription of 50 Gy in 25 fractions was prescribed to the whole breast (PTVbreast) and an additional dose of radiation on the tumour bed was prescribed (PTVboost). A dose prescription of 60 Gy in 25 fractions to PTVboost was used in patients with negative margins after surgery, whereas if the margins were close (< 1 mm) or positive (without a new surgical resection) a dose of 64 Gy was prescribed. All patients were followed with periodic clinical evaluation.