adjuvant intent. We compared plans with Foward Planning -IMRT (FP-IMRT) adjusted to the delineated breast volume with two other plans without the breast delineated (one with standard tangential beams with wedges and another with FP-IMRT). The ACOSOG Z0011 trial showed the non inferiority of the irradiation of axillary levels I and II (included in the irradiated volume when using standard tangential beam radiotherapy to the breast) when compared with axillary dissection of the same levels, in selected patients with breast cancer.
Materials and Methods: We analyzed data from 40 patients undergoing radiotherapy after breast conserving surgery, with a negative sentinel node biopsy. The patients were submitted to a CT for virtual simulation with 3mm slice. The data from the CT were doubled. In one CT, 2 dosimetry plans were done: one with conventional RT with tangential beams with wedges (2-3 segments were added if necessary to achieve dose homogeneity) and another with FP-IMRT. On the other CT data, target volumes were delineated: breast CTV and PTV (expansions of 10 mm were made for all directions except for the posterior one, which was 7 mm), and a plan was calculated using the FP-IMRT technique, adjusted to the PTV. We then outlined the axillary levels I and II, for analysis, on one CT data and copied it to the other. Mean dose (Dmean) and V95 were evaluated for axillary levels I and II. The Conformity Index (CI) of the PTV was also analysed.
Results: Both V95 and Dmean for axillary level I were higher in the standard tangential beams with wedges technique and in the FP-IMRT technique without the breast volume delineated. When compared with these plans, the plan adjusted to the breast PTV achieved an inferior V95 value to axillary level I. When evaluating the axillary level II, these differences were more pronounced. We found a higher CI value in the plan adjusted to the breast target volume.
Conclusions: We found a higher conformity index to the breast target volume using the FP-IMRT technique with the breast target volumes delineated, and a lower V95 for the axillary levels evaluated. This shows that when conforming the dose to the breast alone the unintended irradiation of the axilla is lower. Although a higher V95 was achieved with the standard tangential breast irradiation with wedges, it happens at the expenses of a lower conformity index to the breast volume, and this technique has shown a higher rate of skin toxicity, which lead to being less used. We conclude that the delineation of axillary levels I and II is mandatory when there is the need to irradiate them, and the information obtained by the sentinel node biopsy is therefore important to the radiotherapy treatment.

POSTER: CLINICAL TRACK: GASTROINTESTINAL TUMOURS (UPPER AND LOWER GI)

PO-0691
Impact of genetic polymorphisms related inflammatory response mediated NFkB in resistance to nRCT in rectal cancer
M. Dzhugashvili[1], G. Luengo[2], T. Garcia[3], P. Escolar[1], A. Fondevilla[1], V. Vicente[3], F. Ayala De la Peña[3]
[1]*Madrid Oncology Instiute (Grupo IMO), Oncology Radiotherapy, Murcia, Spain*
[2]*Murcia University, Department of Biochemistry and Molecular Biology, Murcia, Spain*
[3]*University General Hospital Morales Meseguer, Medical Oncology, Murcia, Spain*

Purpose/Objective: Treatment of locally-advanced rectal cancer with neoadjuvant chemoradiotherapy (nCRT) followed by total mesorectal excision has led to better results in sphincter-preservation and local recurrence rates in the last years. Achievement of a pathologic complete response (ypT0N0) after nCRT consistently associates to improved disease free and overall survival. However, no clinical or genetic predictorsof complete response are currently available which allow patient stratification and personalization of therapeutic strategies. Among the multiple pathways involved in CRT resistance, inflammatory response has been demonstrated to mediate both micro-environmental resistance to radiation damage. To evaluate the role of functional polymorphisms of inflammatory response genes (NF-kB, Cox-1, Cox-2,IL-1beta) in pathological response to nCRT in rectal cancer.
Materials and Methods: We included patients with locally advanced rectal cancer treated with nCRT (capecitabine, 3D pelvic radiotherapy, with TD 50.4 Gy) at asingle center. Genomic DNA was obtained from peripheral blood or paraffin-embedded non-tumor tissue. The following polymorphisms were analyzed with Taqman-based qPCR: rs28362491(NF-KB), rs1213266 (COX-1), rs5789 (COX-1), rs20417 (COX-2), rs5275 (COX-2),rs16944 (IL-1B) and rs1143627 (IL-1B). Association between genotypes and rectal cancer outcome was analyzed with logistic regression models (SNPstatssoftware).
Results: 159 patients have been included; Patient characteristics: median age 65 years, 104%males, 55% female. 95% of population had Karnofsky 90-100%; stages IIA (27%), IIIA(4%), IIIB (25%), IIIC (45%). Abdominoperineal resection was practiced in 30% and lower anterior resection in 70% of cases.Surgery included complete mesorectal excision in 78% of patient population.Adjuvant chemotherapy was administered in 88% of them. Complete pathological response (pCR) rate was 18% and nonresponse in 20%. With a median follow-up of 44 months (range: 11-93), only 30 patients have recurred with local and/ormetastatic disease. Overall survival was 85,4% and desease free survival 81%.Univariate analysis shown statistically significant impact of NFkB associated to pCR and OS. Distribution of genotypic and allelic frequencies for the seven polymorphisms was similar to those observed in European populations.
Conclusions: Our work is the first that analyze the relation between inflammation gene polymorphisms and response to nCRT in rectal cancer treatment. We did not find significant association between the genetic polymorphisms (s1213266, rs5789, rs20417, rs5275, rs16944, rs1143627) and the pathological response, but we observed impact of NF-Kb in relation between pathological response and overall survival. We also observed statistically significant relationship between performance status and treatment response. Patients with 100-90% Karnofsky have cPR or quasi complete pathological response to nCRT.

PO-0692
18F-FDG PET/CT-based treatment response evaluation in locally advanced rectal cancer.
F.A. Calvo[1], C.V. Sole[1], D. de la Mata[1], L. Cabezon[2], M. Gomez-Espi[1], E. Alvarez[3], R. Herranz[1], P. Madariaga[4], J.L. Carreras[4]
[1]*Hospital Gregorio Marañon, Radiation Oncology, Madrid, Spain*
[2]*Hospital Gregorio Marañon, Medical Oncology, Madrid, Spain*
[3]*Hospital Gregorio Marañon, Pathology, Madrid, Spain*
[4]*Clinica La Luz, Nuclear Medicine, Madrid, Spain*

Purpose/Objective: To prospectively validate the efficacy of 18F-fluorodeoxyglucose (18F-FDG)-positron emission tomo-graphy (PET)-CT imaging for predicting histopathological response and clinical long-term outcomes in locally advanced rectal cancer (LARC).
Materials and Methods: 38 patients with confirmed diagnosis of LARC (cT3-4 or cN+) were prospectively studied with 18F-FDG PET/CT before and after neoadjuvant therapy (NAT). Total mesorectal excision (TME) was programmed 6 weeks after NAT followed by an expert histopathological analysis of the surgical specimen. Baseline variables and previously identified cutoff values of pre-NAT ($SUVmax_{PRE} \geq 6$), post-NAT ($SUVmax_{POST} < 2$), absolute (?SUVmax ≥ 4) and percentage reduction (?SUVmax ≥ 65%) of the baseline maximum FDG standardized uptake value (SUVmax) criteria were applied to differentiate metabolic tumor responders from non-responders. These features were correlated with disease-free survival (DFS) and overall survival (OS).
Results: 19 responder patients (TRG 3-4) showed a statistically significantly higher 5-year disease-free survival (DFS) and overall survival (OS) compared with 19 non-responders (TRG0-2) patients (94.4 vs 48.8%, p=0.001; 94.7 vs 63.2%, p= 0.02). At multivariate analysis the only presurgical parameters correlated to the likelihood of recurrence and survival were ?SUV (≥ 65% vs < 65%) [HR= 5.2 (p=0.01); HR= 4.4 (p=0.03)] and tumor histologic grade (I or II vs III) [HR=6.2 (p=0.001); HR= 4.1 (p=0.03)].
Conclusions: This prospective study has proven that 18F-FDG PET/CT is a valuable imaging tool for assessing rectal cancer TRG and long-term prognosis, and could potentially serve as an intermediate endpoint in treatment optimization research and rectal cancer patient care.

PO-0693
Image guided volumetric modulated arc therapy with concurrent Cisplatin for inoperable esophageal cancer
C. Srinivas[1], Y.S. Pawar[1], V.S. Subramaniam[1], S. Malik[1], K. Kiran[1], P.K. Tike[1], Y. Nalini[1], G. Arun[1], S. Thirumalai[1], M. Kathirvel[1]
[1]*Yashoda Cancer Institute, Department of Radiation Oncology, Hyderabad, India*

Purpose/Objective: This prospective study evaluates feasibility, toxicity and early clinical outcomes of concurrent image guided volumetric modulated arc therapy (IG-RA) and weekly cisplatin in the setting of a definitive chemoradiotherapy for locally advanced esophageal cancer.
Materials and Methods: 41 Patients diagnosed with squamous cell carcinoma of esophagus deemed unsuitable for surgery were included in the study. Patients with performance status (ECOG) more than 1, involvement of cervical esophagus or gastroesophageal junction,