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<50. The 18F-FDG PET/CT study was performed pre-operatively in all patients. The SUVmax was calculated from images at 1-hour (SUV1) and 3-hours (SUV2) after i.v. injection of 18F-FDG. Furthermore, retention index (RI) was calculated in 11 patients following formula; $RI=100 \times (SUV2-SUV1) / SUV1$. Results The SUV1, SUV2 and RI in K-ras mutant patients were 9.448 ± 3.247 , 9.16 ± 0.878 , and $27.32\% \pm 1.56\%$, respectively. These values in K-ras wild patients were 13.545 ± 6.054 , 21.69 ± 9.99 , and $43.89\% \pm 16.57\%$, respectively. There was no statistically difference between K-ras mutant and wild patients for SUV1 ($p:0.140$), SUV2 ($p:0.066$), and RI ($p:0.221$). According to CEA level, There was no statistically difference between high value and low value for SUV1 ($p:0.923$), SUV2 ($p:0.855$), and RI ($p:0.465$). Conclusion We found that K-ras gene mutation was not affected 18F-FDG uptake in CRC. But, our study included a small number of patients. We thought that there is need for additional research in large series of patients.

PW034

Evaluating the risk of postoperative liver failure using preoperative 99mTc-GSA SPECT/CT fused imaging

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Aim: Evaluating the risk of postoperative liver failure is important for safe hepatectomy. Liver Uptake Value (LUV) calculated from preoperative 99mTc-GSA SPECT/CT fused imaging is useful for evaluating functional reserve of remnant liver. Therefore we compared the LUV indices with preoperative clinical risk factors of postoperative liver failure. **Methods:** We enrolled 560 patients (mean age 66.5 ± 10.6 years) who were performed 99mTc-GSA SPECT/CT before hepatectomy. According to the ISGLS criteria, 27 of 560 patients showed postoperative liver failure. From 99mTc-GSA SPECT/CT, we calculated whole liver LUV and remnant LUV. The cut off value of two indices were calculated from ROC analysis. Older age (>70 years), portal vein hypertension, hepatitis, severe fibrosis, massive bleeding (>700ml), and postoperative complication (> grade 3 of Clavian Dindo classification) were decided as clinical risk factors. **Results;** The odds ratios of various indices were as follows; low remnant LUV (OR: 18.4; 95%CI:

3.9 - 70.5), low whole liver LUV (OR 4.7; 95%CI 2.0 - 10.9), hepatitis (OR 2.7, 95%CI 0.8 - 9.1), older age (OR 1.2, 95%CI 0.5 - 2.8), portal vein hypertension (OR 2.5, 95%CI 1.1 - 5.7), severe fibrosis (OR 4.4, 95%CI 1.7 - 11.2), massive bleeding (OR 2.7, 95%CI 1.2 - 6.1), and postoperative complication (OR 15.7, 95%CI 6.2 - 39.7). The odds ratio of combination low remnant LUV and low whole liver LUV was 19.9 (95%CI 6.8 - 58.5) and low remnant LUV and postoperative complication was 41.2 (95%CI 17.1 - 99.1). **Conclusion;** LUV indices calculated from 99mTc-GSA SPECT/CT fused image obtained before hepatectomy were useful for evaluating the risk of postoperative liver failure.

PW035

Can Potassium Perchlorate and Sodium Iodine influence Iodine-131 uptake in Cholangiocarcinoma?

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Aim: Cholangiocarcinoma (CC) is a malignancy with poor prognostic, high mortality and limited treatment options, reason why the development of novel treatment strategies by exploiting new targets might be considered as consensually relevant. In fact, it was shown that CC expressed the sodium iodine symporter (NIS), which is responsible for iodine uptake by the cells. NIS is also the responsible for the uptake of iodine-131 (131I) in thyroid tumor and benign diseases, enabling the metabolic radiotherapy and opening possibilities of new treatment approaches for CC. **Aim:** This work aims to study the uptake profile of 131I mediated by NIS, in two human CC cell lines from distinct origins. The uptake specificity was tested using NIS inhibitor potassium perchlorate (KClO₄) as well as the effect of sodium iodide (NaI) on 131I uptake. **Material and Methods:** Two human CC cell lines were used: TFK-1 from extra-hepatic CC and HuccT1 from intrahepatic CC. In order to study the

^{131}I uptake profile, we incubated 2×10^6 cells/mL with 9.25×10^5 Bq of ^{131}I for 120 minutes. During this period, several samples were collected and the respective counts per minute (CPM) registered. Furthermore, the NIS specificity for ^{131}I was assessed in the presence of the inhibitor KClO_4 . For this purpose, the cells were pre-incubated with KClO_4 (1 to $100\mu\text{M}$) for 0, 30 and 60 minutes before adding ^{131}I . The effect of NaI was tested using same protocol and same concentrations. The uptake of ^{131}I was measured after 30 minutes incubation with the radiopharmaceutical. Results: It was observed ^{131}I uptake in both cell line cell lines (TFK-1 and HuccT1). The uptake peak was between 5 and 30 minutes, remaining stable after that. Moreover, KClO_4 reduced the NIS mediated ^{131}I uptake levels, in both cell lines, when introduced in culture medium at the same time, suggesting that ^{131}I uptake is dependent of plasma membrane functional NIS proteins. Preliminary results showed no differences in the ^{131}I uptake, in both cell lines, when different stable iodine concentrations are present in the medium. Conclusions: Different types of human CC cell lines have the capacity to accumulate ^{131}I , based on plasma membrane functional NIS expression. However the uptake is not influenced by the presence of NaI . These preliminary results seem to show the potential that metabolic radiotherapy with ^{131}I could have for CC treatment.

PW036

Clinical Value of Metabolic Parameter for Evaluation of LN Metastasis in Clinical N0 Gastric Cancer

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Purpose: Predicting lymph node metastasis in gastric cancer has the crucial role because its possibility to changing therapeutic method either endoscopic resection or surgical gastrectomy. Preoperative CT scan has the limit to evaluate LN metastasis, which depends on size and shape, anatomically. The purpose of the study is to evaluate regional LN status by primary gastric tumor using its metabolic standardized uptake value (SUVmax) in radiologic No gastric cancer. Material and methods: We retrospectively reviewed 201 patients which were confirmed as gastric cancer from July 2012 to December 2012. All patients had done preoperative F-18 FDG PET/CT. Among the various histological gastric tumors, only adenocarcinoma showing FDG uptake evidently on PET scan is evaluated because of its accessibility to measure metabolism. Among 201 patients, ninety-three patients (M : F= 61 : 32, age: 60.0

± 12.3 yrs) show no discernible or below 0.6 cm sized regional LNs in preoperative CT scan, also having no FDG uptake which was interpreted as N negative. Dividing by two groups, 37 patients have pathologically confirmed as N positive and 56 patients have the result of N negative. Statistical analysis is performed by using student T-test and ROC curves to compare primary tumor SUVmax between two groups. Result: The mean values of SUVmax for pathologically confirmed as N positive and N negative groups are 7.39 ± 3.4 and 5.77 ± 2.5 each. There is significant difference between the two groups ($P=0.01$). The cut-off value of SUV max in predicting LN metastasis is above 5.56. The other 69 of 201 patients, except above 93 patients, presenting FDG uptake in regional LN show high FDG uptake in primary gastric tumor, mean SUVmax= 11.91 ± 6.7 . Conclusion: The result shows higher FDG uptake in primary gastric tumor with LN metastasis than that of without LN metastasis. Furthermore, primary gastric tumor metabolism is much higher in the group which shows FDG uptake in regional lymph node. To clarify the correlation of FDG-avid LN with the other various factors, further studies should be needed. Predicting LN metastasis by means of measuring primary tumor metabolism could be the ancillary option to decide therapeutic plans in gastric cancer patients.

PW037

Comparative Analysis of Metabolic Response to Clinical Outcome in Metastatic Pancreatic Adenocarcinoma following Modified Dose Folfirinox.

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Aim: To compare early metabolic response with clinical progression free survival (PFS) and overall survival (OS) in patients with metastatic pancreatic adenocarcinoma following attenuated dose FOLFIRINOX. Methods: Of the 43 patients enrolled in the study between 11/2011 and 01/2014 29 patients were evaluated by both baseline and follow-up F18-FDG PET/CT. Medical reasons and technical issues limited accurate evaluation by F18 FDG PET/CT. 14 of the patients were excluded. A baseline PET/CT scan was obtained before treatment. It was followed by a second PET/CT after two cycles of chemotherapy with modified dose Folfirinox. Based on SUV max corrected for background, metabolic response of the lesions was categorized as stable, mild, significant, or as progression. Using Chi square test, Fisher's exact test, and Kaplan-Meier methods, PFS and OS were associated with PET response. Results: There were a total of 105 primary and metastatic lesions in 29 patients. 24 patients responded, 3 progressed, and 2 were stable. 5 patients did not respond.