achieved an AUC of 0.71 was used as our final model. For validation on the testing dataset, the model yielded an accuracy of 90% and AUC of 0.93 (95% CI: 0.76 to 1.00) while the percentage of patches positively classified, and outperforms average of the probabilities of the corresponding patches (accuracy 70%; AUC 0.79, 95% CI: 0.50 to 1.00) using the same optimal threshold of 0.33. The heatmaps show that almost all of patches are highly identified to show the regions of immunoscore ((figure 1) A. Immunoscore of 3–4 [positive]. B. Immunoscore of 0–2 [negative]).

Conclusions The automated deep-learning model achieved good performance and could potentially assist clinicians in the identification of HCC patients who are more likely to respond to immunotherapy, or at least, providing second opinions on therapeutic decision-making.

IDDF2020-ABS-0088 COMPARING NON-INVASIVE TESTS FOR PREDICTION OF FIBROSIS IN NON-ALCOHOLIC FATTY LIVER DISEASE

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10.1136/gutjnl-2020-IDDF.151

Background Non-alcoholic fatty liver disease (NAFLD) is becoming the most common type of chronic liver disease with an estimated worldwide prevalence of 25%. It is a spectrum of disease that ranges from simple steatosis to advanced fibrosis. Non-invasive tests play an important role in identifying patients with fibrosis that require further investigation and follow up. The aim of the study is to evaluate the diagnostic accuracy of different non-invasive scoring tests.

Methods Patients with NAFLD who underwent liver stiffness measurement (LSM) by FibroScan at Aberdeen Royal Infirmary between 2013 and 2016 were retrospectively included in our study. Patients' demographic, clinical and laboratory data were collected closest from the date of the FibroScan. NAFLD fibrosis score (NFS), APRI, FIB-4 and BARD scores were calculated. For this study, clinically significant fibrosis (CSF) is defined as LSM > 7 kPa and advanced fibrosis is defined as LSM >12 kPa. The diagnostic accuracy of the four fibrosis scores was examined by calculating the area under the receiver operating characteristic curve (AUROC). The sensitivity, specificity, positive predictive value and negative value were calculated using optimal cut-offs calculated by Youden index.

Results Of the 863 patients included in this study, 498 (57.7%) were male and the mean age was 54.4 years (SD=14.7). The mean BMI was 32.6 (SD=6.4). 48% of patients had CSF with LSM >7 kPa and 28% had advanced fibrosis with LSM> 12kPa. For CSF, AUROC curve values were: NFS 0.77 (95% CI, 0.73–0.80), FIB-4 0.74 (95% CI, 0.71 -0.78), APRI 0.74 (95% CI, 0.70–0.78) and BARDS 0.65 (95% CI, 0.65–0.74). For advanced fibrosis, the AUROC curve values were: NFS 0.83 (95% CI, 0.80 – 0.87), FIB-4 0.79 (95% CI, 0.75–0.83), APRI 0.75 (95% CI, 0.71 to 0.79) and BARDS 0.75 (95% CI, 0.71–0.79).

Conclusions All fibrosis scores were superior at detecting advanced fibrosis (LSM> 12kPa) compared to CSF (LSM > 7kPa). NFS showed a superior diagnostic accuracy of fibrosis compared to other scores.

IDDF2020-ABS-0092 PREDICTION OF POST-HEPATECTOMY LIVER FAILURE IN PATIENTS WITH HEPATOCELLULAR CARCINOMA BASED ON GD-EOB-DTPA-ENHANCED MRI: A LF SCORING MODEL

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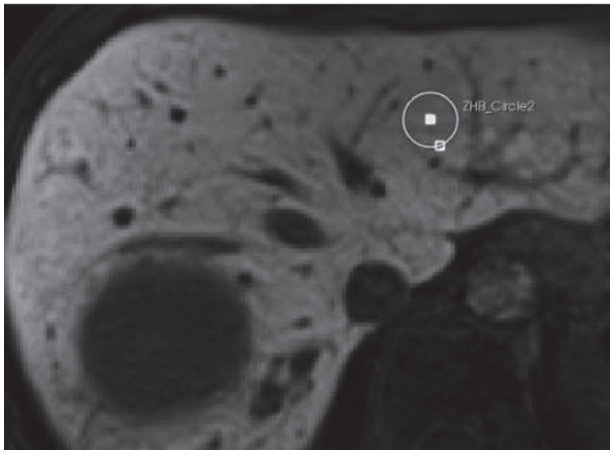
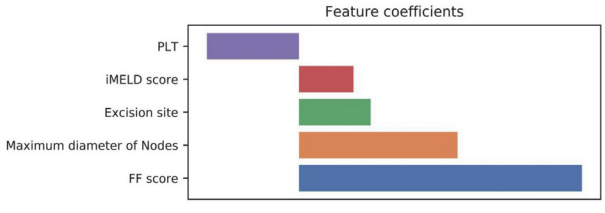
Background The purpose of this study was to establish a preoperative clinical-radiomics prediction model of post-hepatectomy liver failure (PHLF) in patients with hepatocellular carcinoma(HCC) and to predict clinical outcome of HCC patients who suffered PHLF.

Methods The study included 555 HCC patients who underwent hepatectomy first time from January 2015 to December 2019 in The First Affiliated Hospital of Sun Yat-sen University and Sun Yat-sen University Cancer Center. Gd-EOB-DTPA-Enhanced MRI was performed within 30 days before surgery. Patients in this study didn't have other tumors or serious organic diseases and were followed up after liver resections for 90 days. We obtained 60720 MR images from 555 patients (an ROI is shown as figure 1), including 390 cases as training data and 165 cases as independent testing data with the standard of PHLF as ISGLS. Through the multiple-model fusion algorithm, we extracted 1044 features per patient from his MR images, screening out feature sets of high contribution by RFE-SVM algorithm and transforming them to FF scores. Clinical indicators, radiologic features and FF scores were included in our LF scoring model through LDA(Linear discriminant Analysis) algorithms.

Results The AUC of LF scoring model reached 0.953 (95%CI 0.953–0.963) and 0.945 (95%CI 0.941–0.980) in the training



Abstract IDDF2020-ABS-0092 Figure 1 ROI of a certain patient



Abstract IDDF2020-ABS-0092 Figure 2 Feature coefficients in the clinical-radiomics model