

Supplementary Figures

Supplementary Figure S1

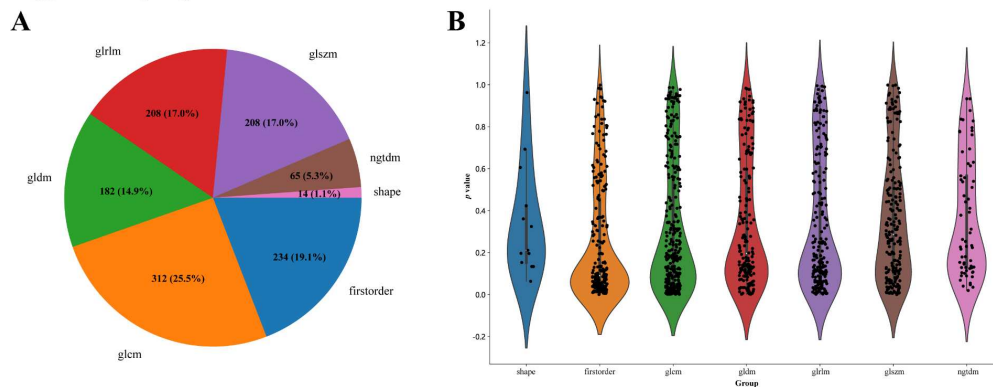


Figure S1. 1223 radiomics features were extracted by 3D slicer software. (A) The categories of 1223 radiomics features. (B) The p value of Z-score normalization radiomics features obtained from independent sample t test.

Supplementary Figure S2

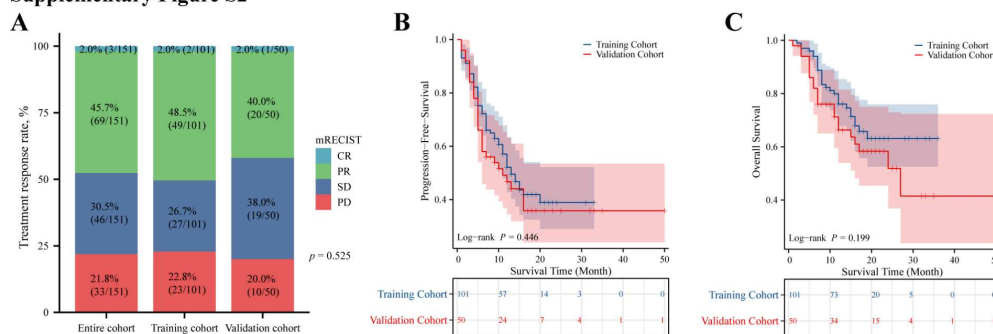


Figure S2. The treatment response and survival analysis between training and validation cohorts. (A) Treatment response in different cohorts. (B and C) The Kaplan-Meier curves of OS and PFS between training and validation cohorts based on treatment response. OS, overall survival; PFS, progression-free survival.

Supplementary Figure S3

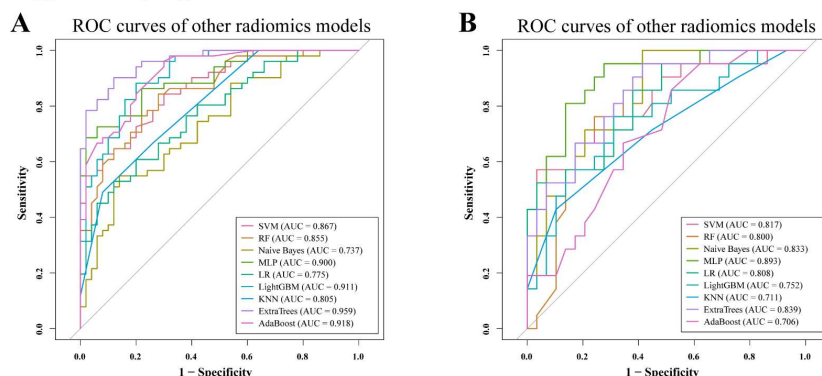


Figure S3. ROC curves analysis and comparison of 9 ML radiomics models in predicting the response to LPI treatment for patients with unresectable HCC in the training and validation sets. (A) ROC curves of the ML radiomics models in the training cohort. (B) ROC curves of the ML radiomics models in the validation cohort. AUC, area under the ROC curve; ROC, receiver operating characteristic curves; ML, machine learning; LPI, lenvatinib plus PD-1 inhibitors and interventional; LR, logistic regression; SVM, support vector machine; KNN, k-nearest neighbor; RF, random forest; LightGBM, light gradient boosting machine; AdaBoost, adaptive boosting; MLP, multilayer perceptron.

Supplementary Figure S4

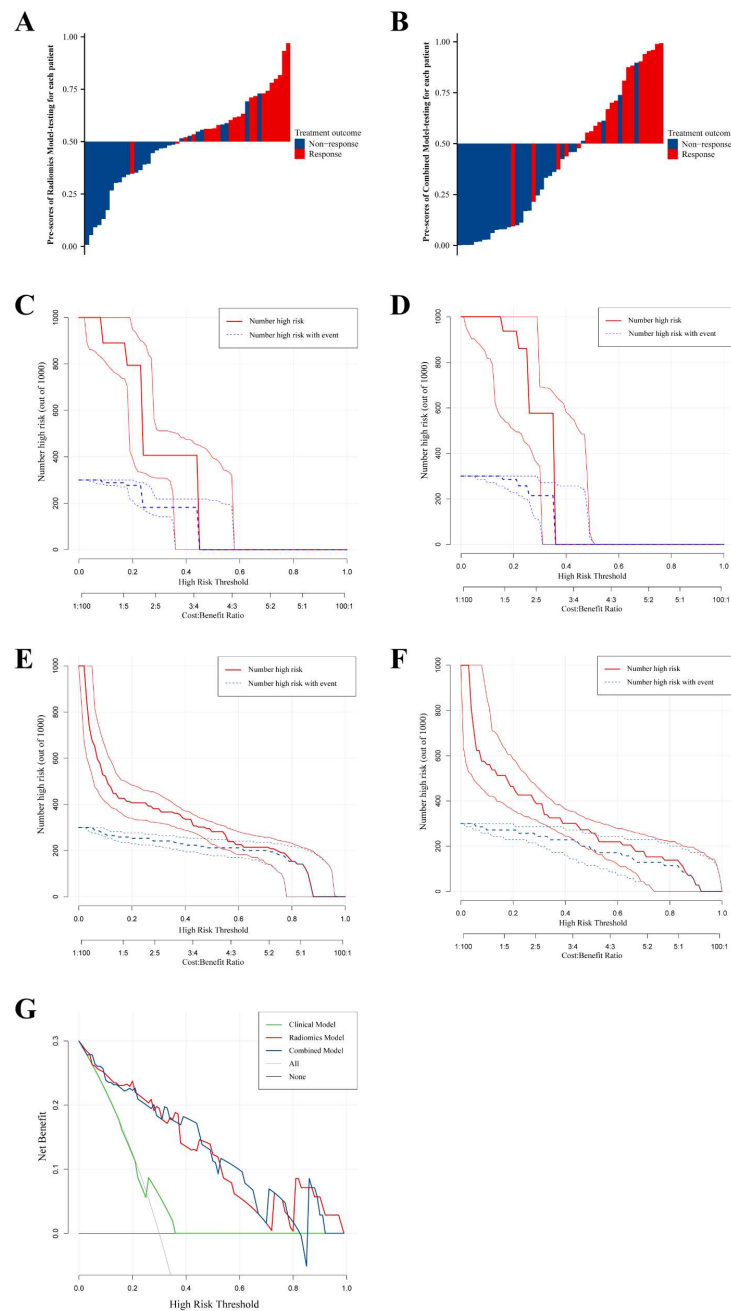


Figure S4. Supplement to prediction models performance in the training and validation cohorts. (A and B) Waterfall plot of the predictive score distribution of the radiomics and combined models in the response and non-response groups of the validation set. (C and D) CIC shows the actual number of high risks (blue) and the number of high risks predicted by the clinical model (red) for each risk threshold in the training and validation sets, respectively. (E and F) CIC shows the actual number of high risks (blue) and the number of high risks predicted by the combined model (red) for each risk threshold in the training and validation sets, respectively. (G) Decision curve analysis of the clinical model (green), radiomics model (red) and combined model (blue) in the validation cohort. CIC, clinical impact curve.

Supplementary Figure S5

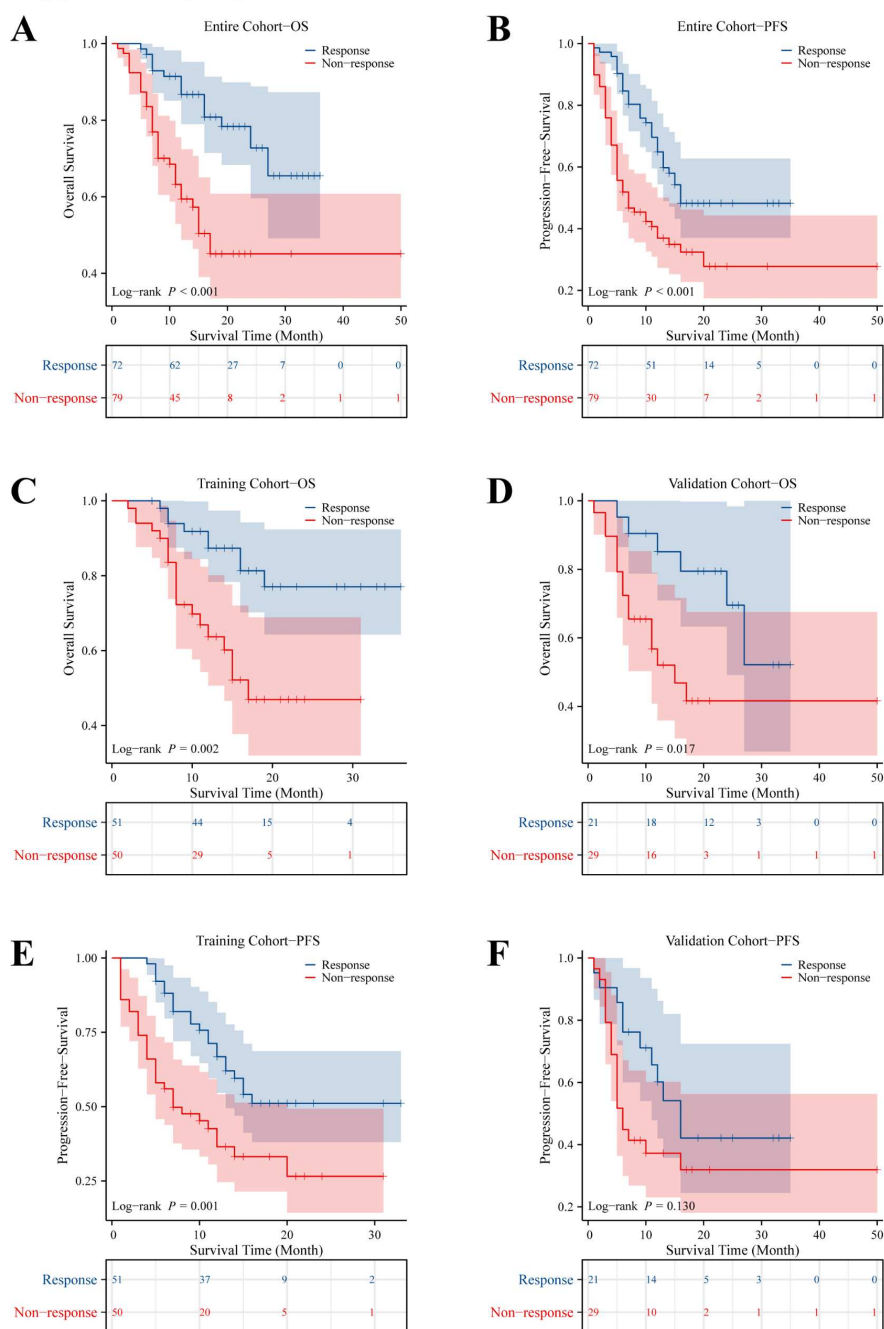


Figure S5. Survival prognosis analysis for patients with unresectable HCC receiving LPI treatment between response and non-response groups. (A) The Kaplan-Meier curves of OS between response and non-response groups in the entire cohorts. (B) The Kaplan-Meier curves of PFS between response and non-response groups in the entire cohorts. (C and D) The Kaplan-Meier curves of OS between response and non-response groups in the training and validation sets. (E and F) The Kaplan-Meier curves of PFS between response and non-response groups in the training and validation cohorts. LPI, lenvatinib plus PD-1 inhibitors and interventional; OS, overall survival; PFS, progression-free survival.