Supplementary Materials

Least absolute shrinkage and selection operator (LASSO) is a powerful algorithm for regression analysis with high dimensional predictors. In our study, we used LASSO to select the most important predictive features in the training set based on the "glmnet" package in R statistical software version 3.3.1. There were 15 most valuable radiomics features left following LASSO. Details of the 15 radiomics features are shown in Supplementary Table 1. The multivariate logistic regression was used to build the model of LASSO. At last, a formula was generated using a linear combination of selected features that were weighted by their respective LASSO coefficients.