##711 - A radiomics model for effective prediction of the treatment benefits of programmed cell death 1 inhibitors in advanced gastric cancer

Authors：Ai Huang， Hong Ma, Tao zhang， Jianping Bi, Zhiwen Liang

BACKGROUND

The present study aimed to construct an individualized radiomics model to predict the treatment benefits of Programmed cell death 1 (PD-1) inhibitors in advanced gastric cancer. Clinical data of 58 patients with advanced gastric cancer receiving PD-1 inhibitors were retrospective analyzed to identify major clinicopathological factors related to treatment outcomes. The pretreatment-enhanced computed tomography (CT) imaging data were extracted, and an individual radiomics nomogram was constructed based on the imaging features and clinicopathological risk factors. The performance and clinical utility of radiomics model to predict anti-PD-1efficacy was evaluated through receiver operator characteristic (ROC), and further survival prediction was explored. Serum carcinoembryonic antigen and tumor metastasis site showed a correlation with PD-1 inhibitors response.

METHODS

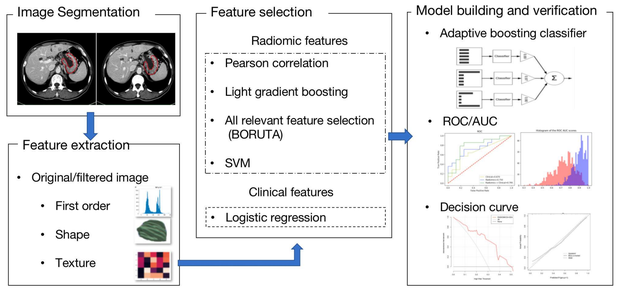

Figure 1. The radiomics analysis workflow in this study. Based on CT images, important image features were screened and combined with important clinical risk factors to established radiomics nomogram, the performance and clinical utility of radiomics model to predict anti-PD-1efficacy was evaluated through receiver operator characteristic (ROC), calibration and decision curve analysis, and further survival prediction was explored.

RESULTS

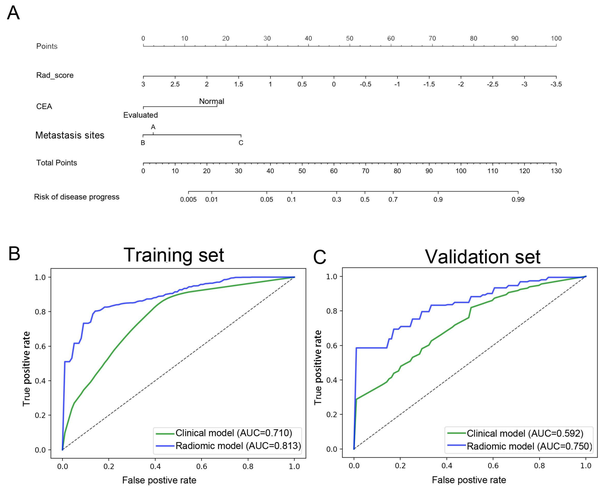

Figure 2. The individual radiomics nomogram was constructed for predicting anti-PD-1 efficacy in advanced gastric cancer. (A) The radiomics nomogram was constructed based on rad-score and clinicopathological risk factors as CEA level and tumor metastasis site. Performance of radiomics and clinical model were evaluated in training set (B) and in validation set (C) through the operating characteristic curve analysis.

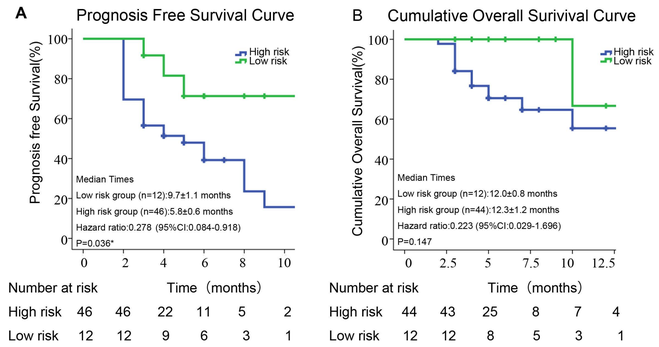

Figure 3. Survival analyses in different risk groups of disease progress classified by the radiomics model. (A) Progression-free survival (PFS) in different risk groups of disease progress, (B) Overall survival (OS) in different risk groups of disease progress.

Highlights

- Screening main beneficiaries of PD-1inhibitors are vital for desired outcomes in advanced gastric cancer.
- The CT-based radiomics nomogram effectively predicted the treatment outcomes of PD-1 inhibitors for advanced gastric cancer.
- The radiomics nomogram revealed a better clinical utility to guide the decision-making of clinical treatment.

CONCLUSION

The CT-based radiomics nomogram could predict the treatment benefits of PD-1 inhibitors in advanced gastric cancer, thereby guiding the decision-making of clinical treatment.