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Development and validation of a risk-prediction model for immune-related adverse events in patients with non-small-cell lung cancer receiving PD-1/PD-L1 inhibitors

Key words: **Non-small cell lung cancer; PD-1/PD-L1 inhibitors; immune-related adverse events; systemic immune-inflammation index; body mass index; age**

Research Summary

This study explored biomarkers that could early predict the occurrence of immune-related adverse events(irAEs) and developed and validated a risk prediction model.

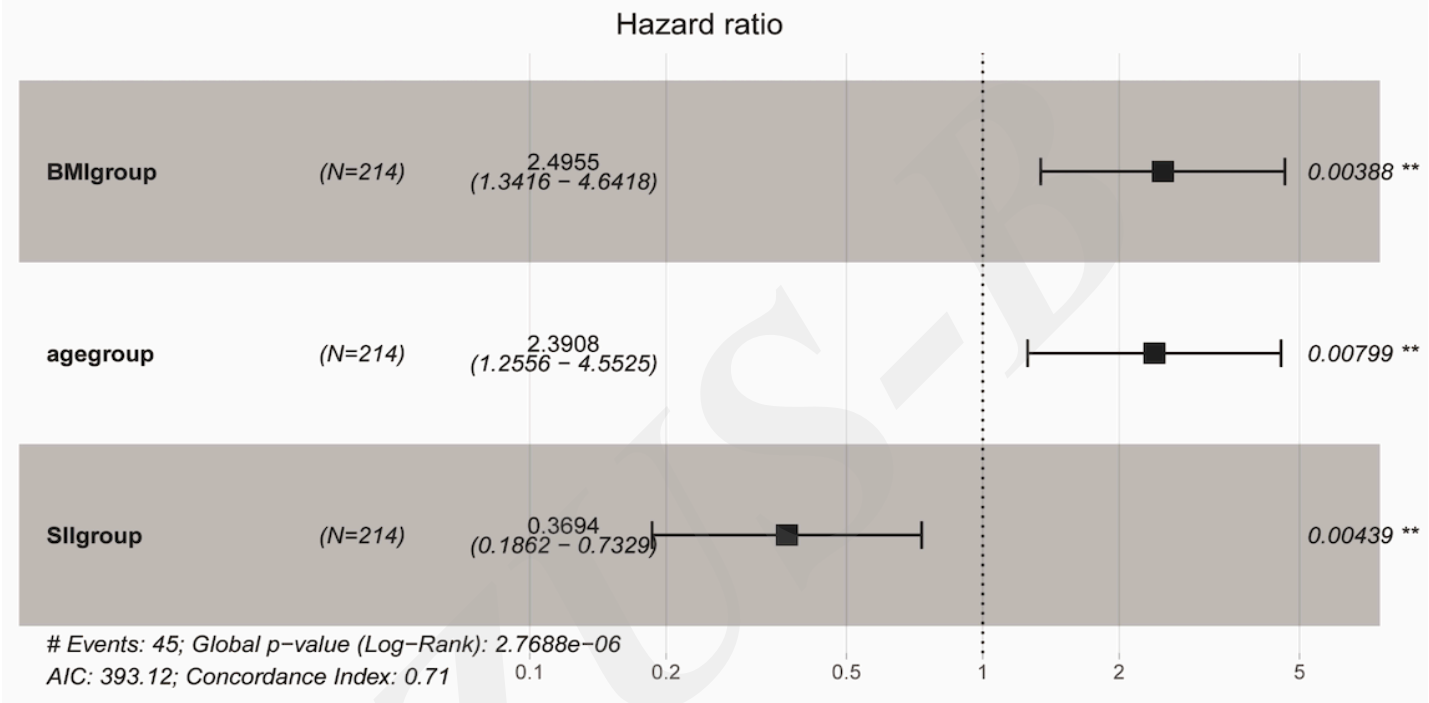
- **Collection of patient's baseline demographic characteristics and laboratory parameters from the electronic medical record system and collection of the occurrence of irAEs and long-term prognosis through follow-up interviews.**

- **The prediction model for irAEs (grade≥2) was then constructed and validated by dividing patients into a training set and a validation set in a 6:4 ratio according to temporal order. In the training set, variables associated with the occurrence of irAEs (≥ grade 2) after PD-1/PD-L1 inhibitor treatment were screened by Cox regression models. The score of each variable was determined based on the regression coefficients and the risk prediction model for irAEs was constructed.**

- **the discriminative power and calibration of the prediction model were assessed using the receiver operating characteristic curve and calibration curve in the training and validation sets, respectively.**

- **the Cox proportional hazards model was applied to explore the correlation between irAEs (≥ grade 2) and long-term prognosis.**

result



We developed and validated a risk-prediction model based on SII, BMI, and age to help physicians assess early the risk of irAEs (grade ≥2) in NSCLC patients receiving PD-1/PD-L1 inhibitors. The risk-prediction model can also predict OS to a large extent.