Tohoku Univ. Technology

Predictive Markers for the Efficacy of Immune Checkpoint Inhibitors

Discovery of a Correlation Between Blood Levels of a Compound and Post-ICI Survival Time

Overview

Immune checkpoint inhibitors (ICIs) offer lasting treatment efficacy and improved survival for cancer patients, but positive responses are limited to select individuals and treatment costs are high, highlighting the need to predict benefit before therapy. Current predictive methods like PD-L1 testing mainly measure local tumor tissue expression and fail to fully assess systemic immunity.

Researchers examined blood lysophosphatidylcholine (LPC) levels and clinical outcomes after ICI therapy in squamous cell carcinoma patients. They found that those with higher LPC had significantly prolonged survival post-ICI compared to those with lower levels. Because LPC is measurable in blood samples, it reflects systemic immune status and reduces patient burden by eliminating biopsies. This finding supports developing new clinical tests for predicting ICI effectiveness.

Product Application

- ☐ Clinical diagnostic reagent for predicting the efficacy of ICI therapy using blood specimens

IP Data

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Prolonged Overall Survival After ICI Administration in High LPC Group

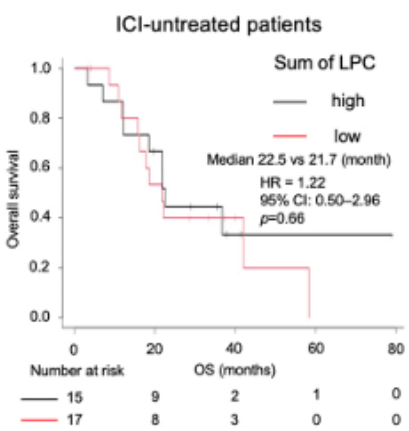

Figure 1. Kaplan–Meier analysis of overall survival between high LPC and low LPC groups in patients not treated with ICI.

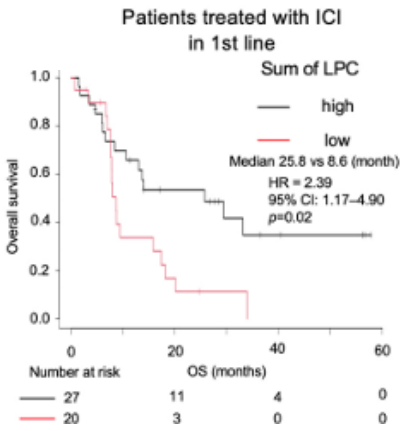

Figure 2. Kaplan–Meier analysis of overall survival between high LPC and low LPC groups in patients treated with ICI as first-line therapy.

No significant difference in overall survival was observed between the high LPC and low LPC groups among patients not treated with ICI; however, among patients who received ICI as first-line therapy, a significant difference in overall survival between the two groups was confirmed.

Related Works

[1]Iwasaki T. et al., Plasma Lysophosphatidylcholine Levels Correlate with Prognosis and Immunotherapy Response in Squamous Cell Carcinoma*Int. J. Mol. Sci.* **26**, 7528 (2025). doi:10.3390/ijms26157528

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