

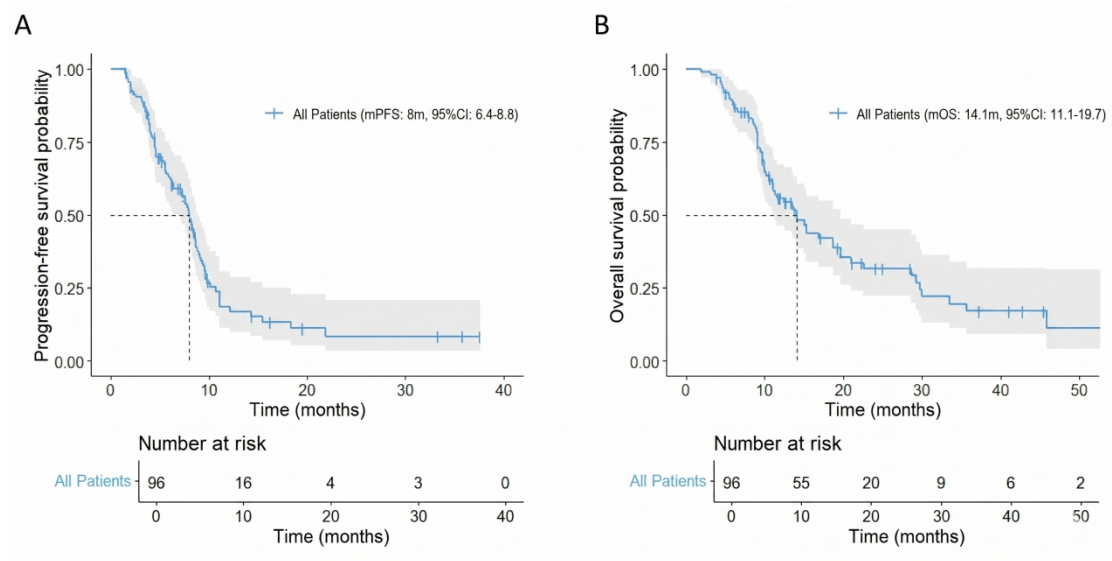


Figure S1. Kaplan-Meier analysis of PFS (**A**) and OS (**B**) in the entire cohort.

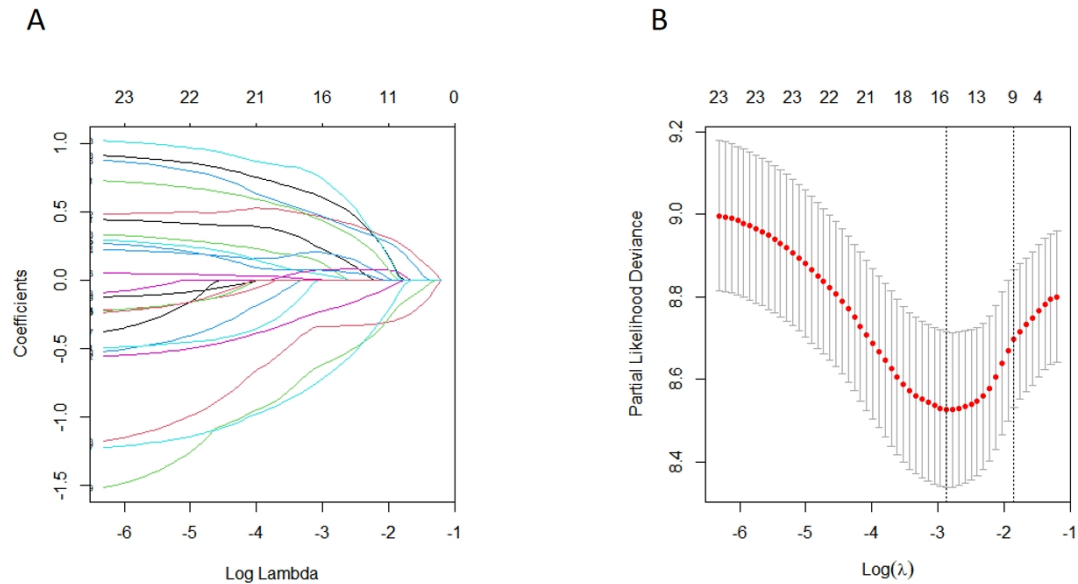


Figure S2. Selection of prognostic variables for PFS using LASSO regression. LASSO coefficient profiles of the candidate variables (**A**), and selection of the optimal tuning parameter (λ) via 10-fold cross-validation (**B**). The vertical dotted lines indicate the optimal λ value with the minimum error and the λ value within one standard error of the minimum.

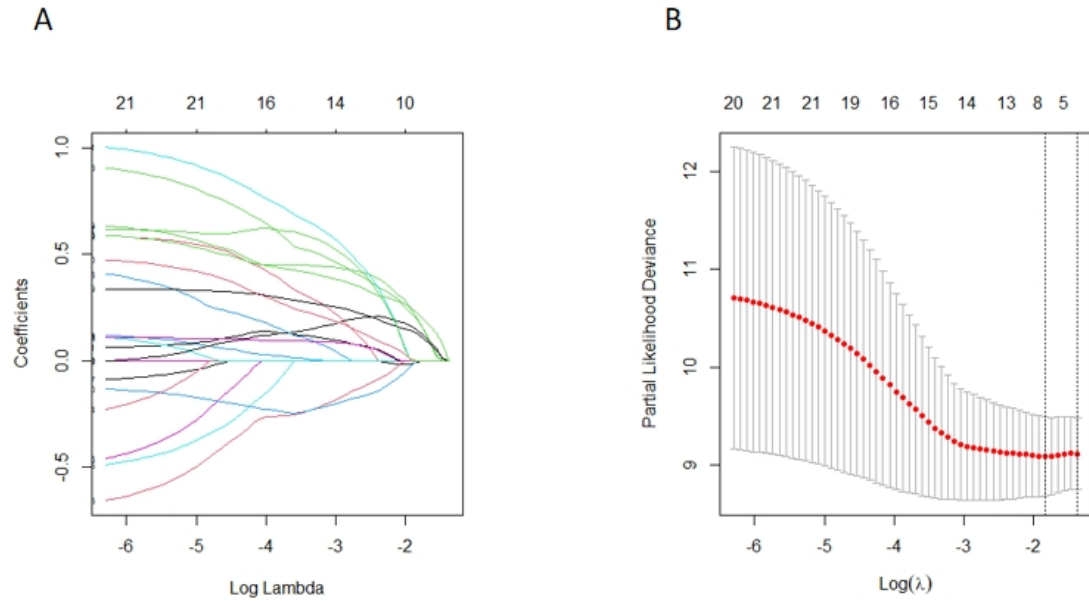


Figure S3. Selection of prognostic variables for OS using LASSO regression. LASSO coefficient profiles of the candidate variables **(A)**, and selection of the optimal tuning parameter (λ) via 10-fold cross-validation **(B)**. The vertical dotted lines indicate the optimal λ value with the minimum error and the λ value within one standard error of the minimum.

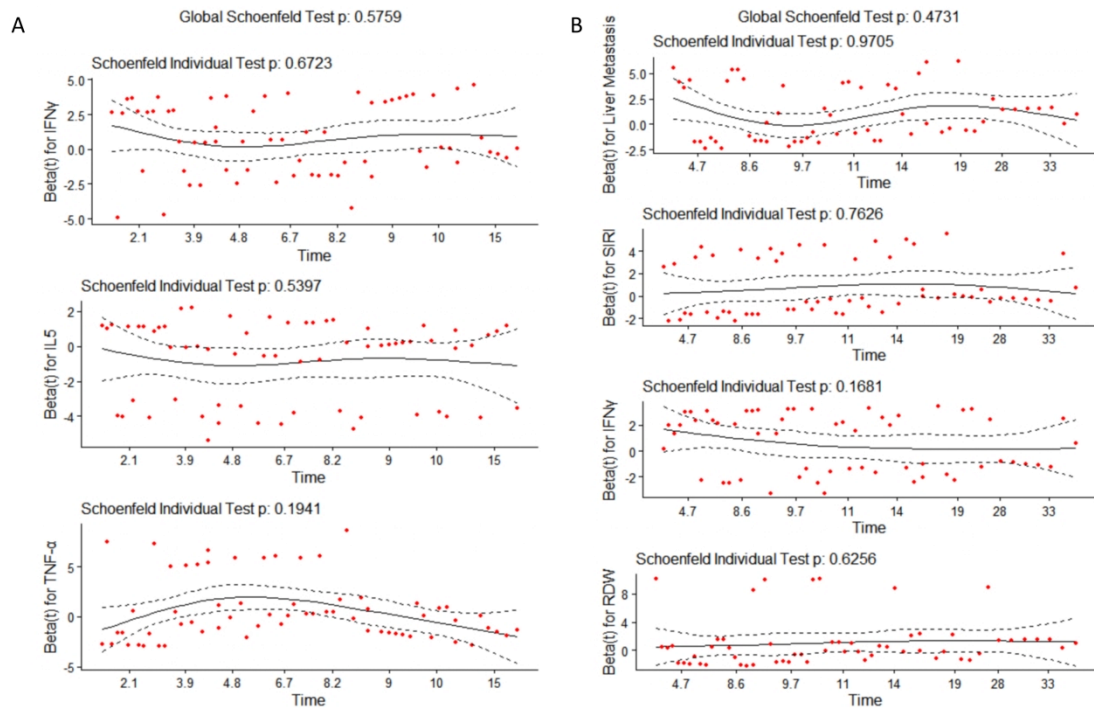


Figure S4. Schoenfeld residual plots for the proportional hazards assumption in the multivariable Cox models for PFS **(A)** and OS **(B)**.

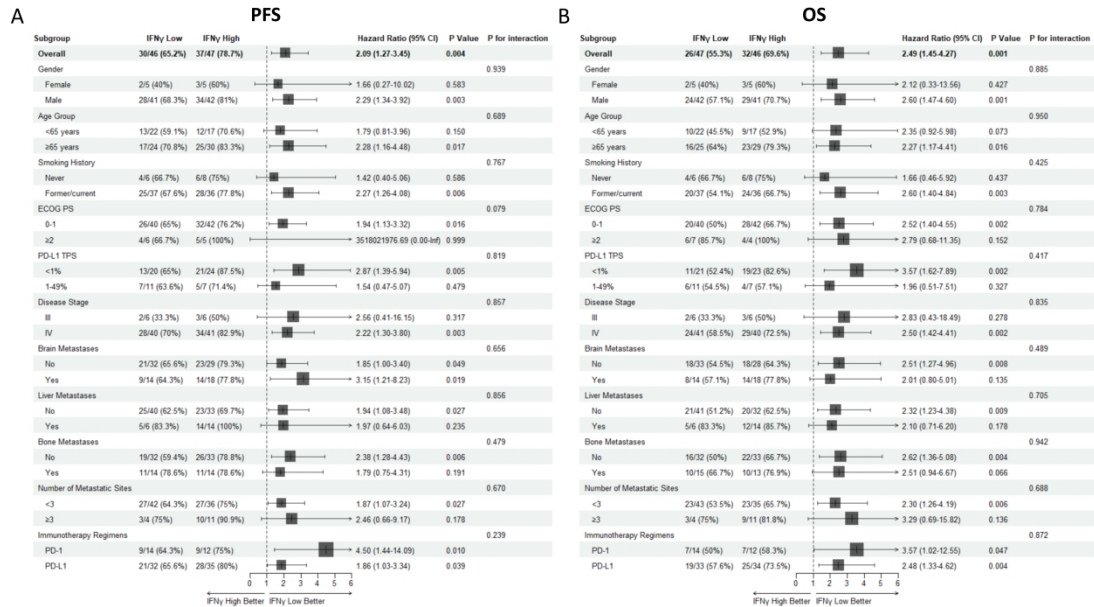


Figure S5. Subgroup analysis of the prognostic value of baseline IFN- γ level for PFS (A) and OS (B) across different clinical characteristics.

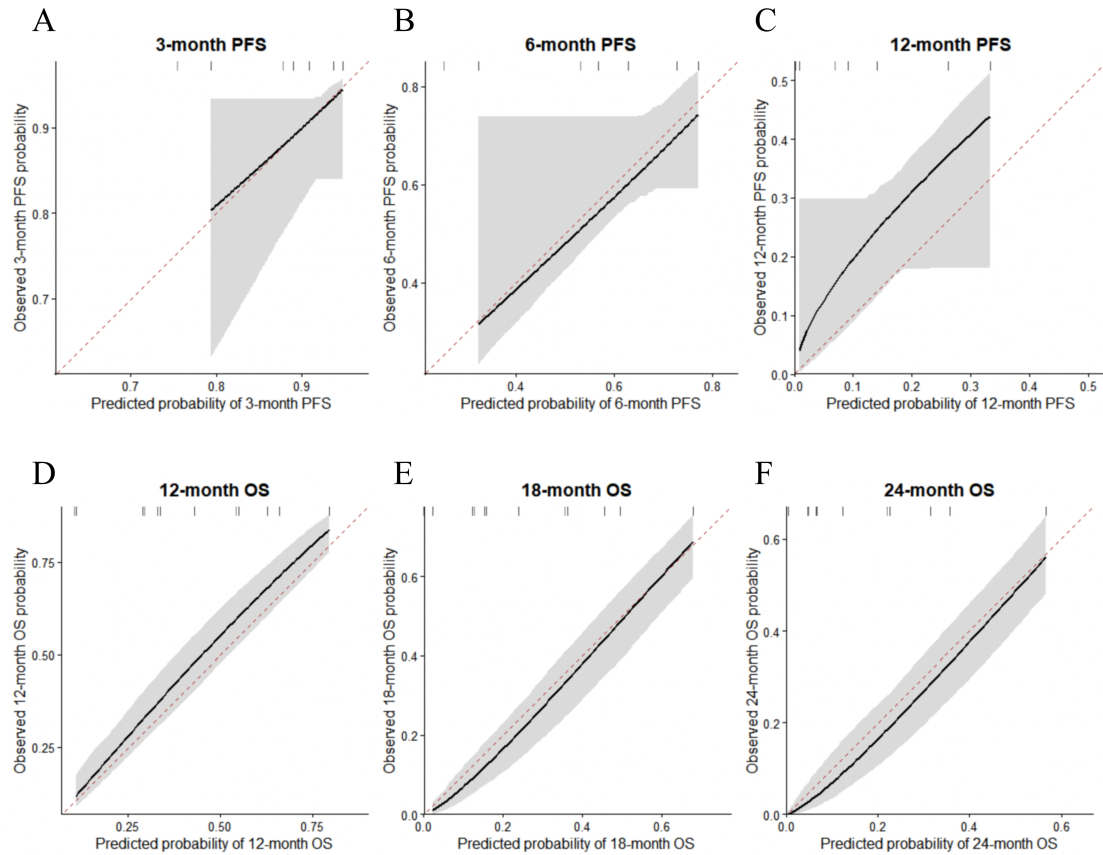


Figure S6. Calibration curves of the nomograms for predicting 3-month (A), 6-month (B), and 12-month (C) PFS and 12-month (D), 18-month (E), and 24-month (F) OS.

The X-axis represents the predicted survival probability, and the Y-axis represents the observed survival probability. The red dashed diagonal line indicates ideal calibration; the black solid line and grey shaded area indicate the calibration curve and its 95% bootstrap confidence interval, respectively. Vertical tick marks indicate the distribution of predicted survival probabilities.

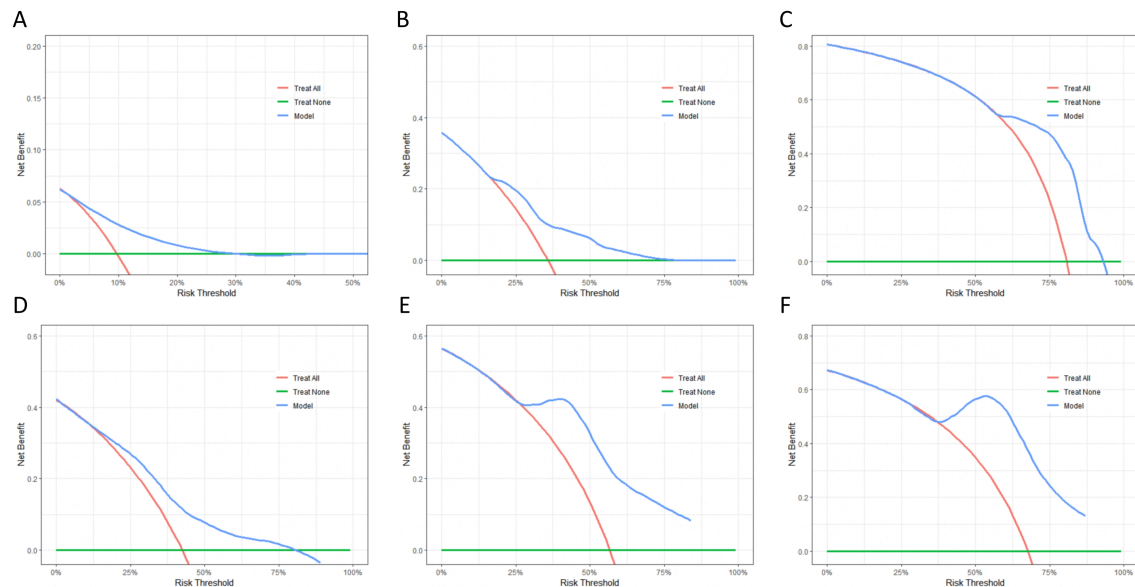


Figure S7. Decision curve analysis of the nomograms for predicting 3-month (A), 6-month (B), and 12-month (C) PFS and 12-month (D), 18-month (E), and 24-month (F) OS.

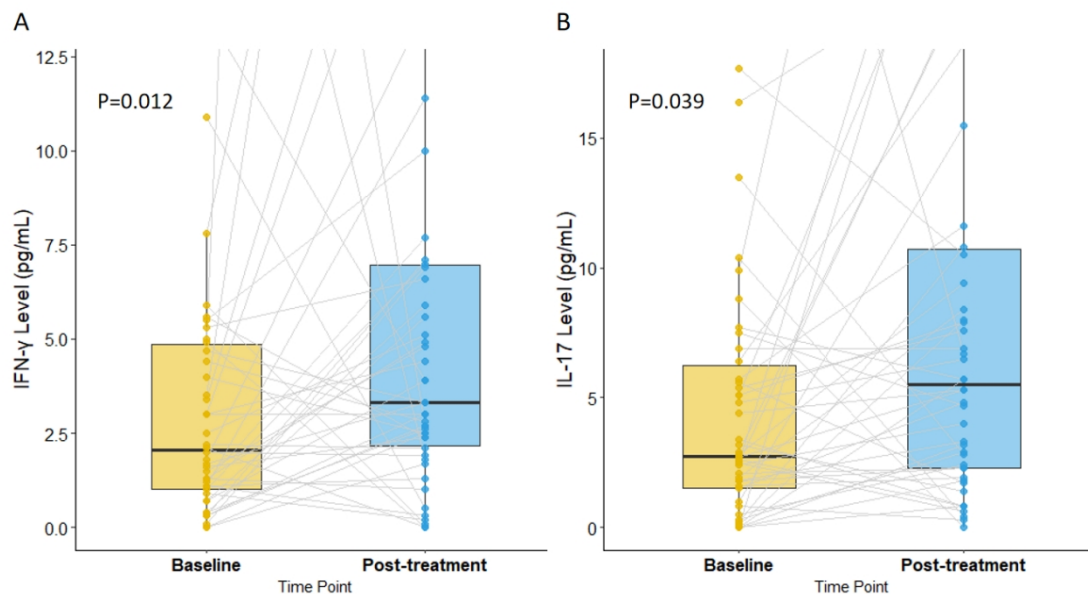


Figure S8. Dynamic changes in serum IFN- γ (A) and IL-17 (B) levels from baseline to post-treatment in the stage IV SCLC cohort (n=46). Gray lines connect paired samples from the same patient to illustrate individual changes.

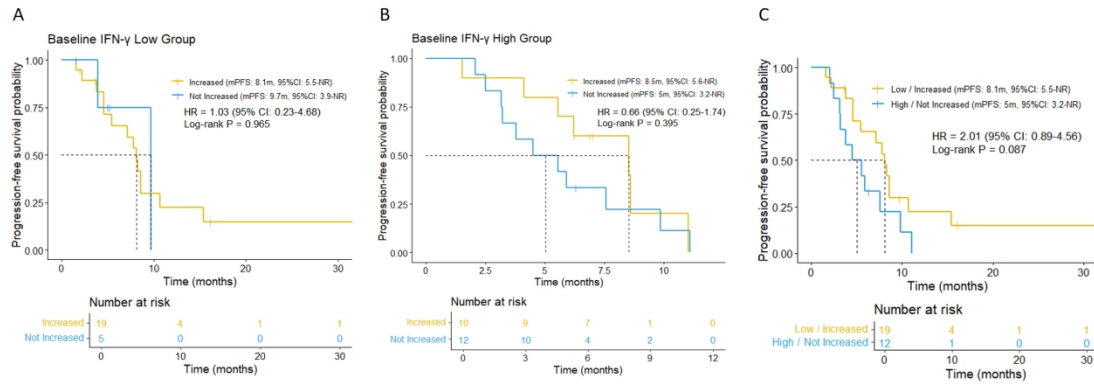


Figure S9. Kaplan-Meier survival analysis of PFS stratified by baseline IFN- γ levels and post-treatment dynamic changes. The plots display survival outcomes for patients in the baseline IFN- γ Low group (A) and High group (B) stratified by dynamic changes (Increased vs. Not Increased), as well as a direct comparison between the Low/Increased and High/Not Increased subgroups (C).

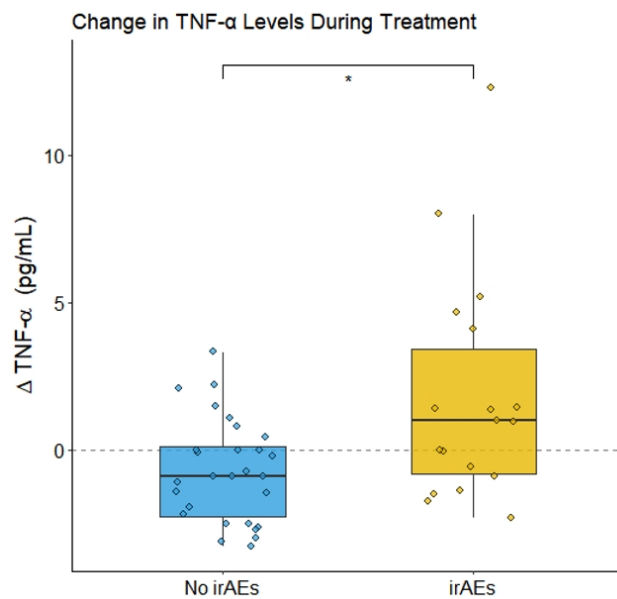


Figure S10. Comparison of dynamic changes (Δ) in serum TNF- α levels between patients with and without irAEs. The Δ value was defined as the post-treatment level minus the baseline level.

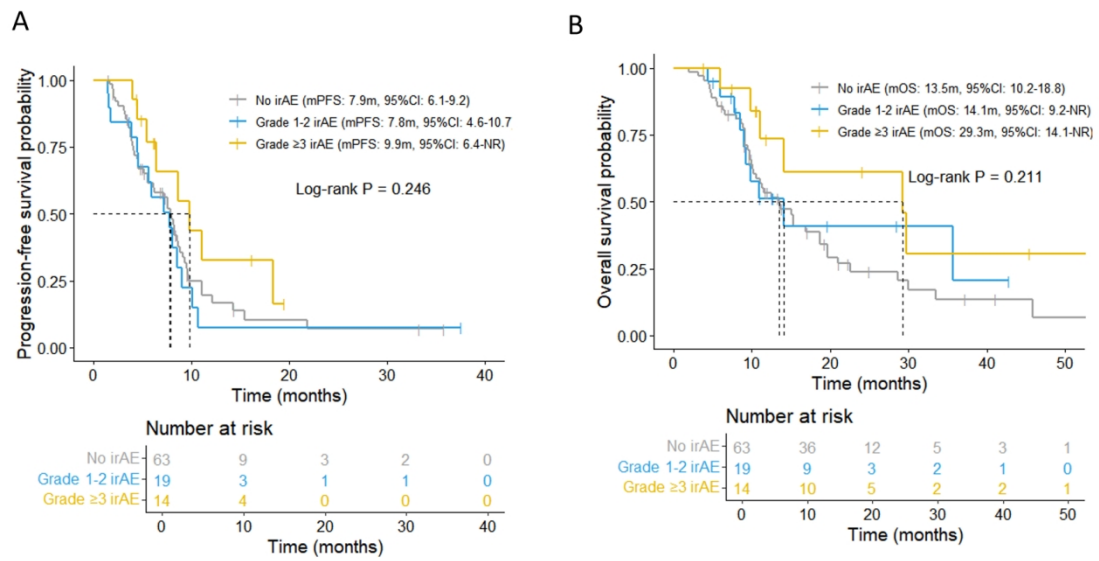


Figure S11. Kaplan-Meier survival analysis of PFS (**A**) and OS (**B**) stratified by the severity of irAEs.