

**Table S1** Relationship between peripheral blood parameters and the severity of checkpoint inhibitor-related pneumonitis

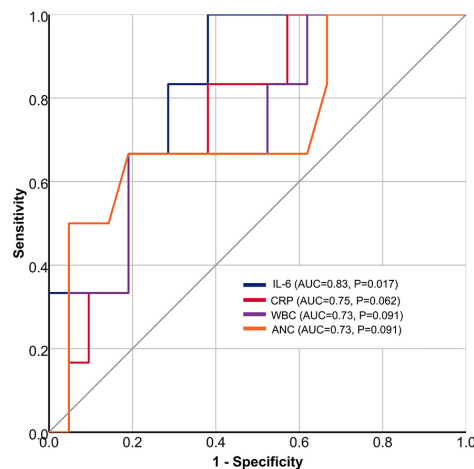
Variable	ALB (g/L)		KL-6 (U/mL)		ALC (K/ $\mu$ L)		AEC (K/ $\mu$ L)		ANC (K/ $\mu$ L)		NLR	
	$r_s$	P value	$r_s$	P value	$r_s$	P value	$r_s$	P value	$r_s$	P value	$r_s$	P value
Grade 3–5	-0.37	<0.001	0.41	0.001	-0.51	<0.001	-0.25	0.14	0.19	0.053	0.46	<0.001

ALB, albumin; KL-6, Krebs von den Lungen-6; ALC, absolute lymphocyte count; AEC, absolute eosinophil count; ANC, absolute neutrophil count; NLR, neutrophil-to-lymphocyte ratio;  $r_s$ , Spearman's rank correlation coefficient.

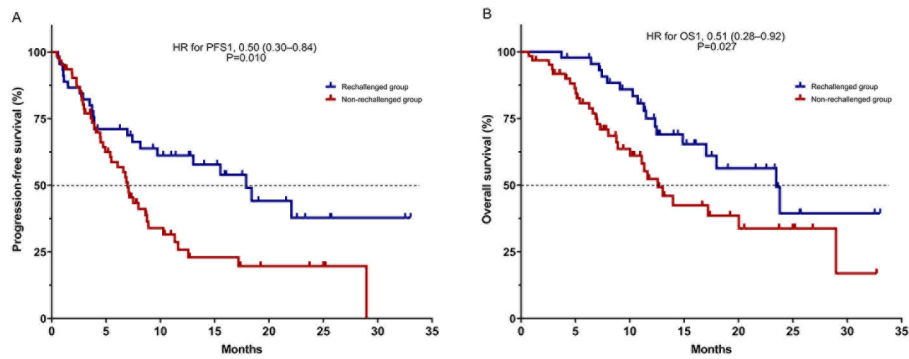
**Table S2** Factors associated with rechallenge of immunotherapy

Variable	Univariate analysis		Multivariable analysis	
	OR (95% CI)	P value	OR (95% CI)	P value
Age $\geq$ 65 years	0.85 (0.39-1.84)	0.67	-	-
Male vs. Female	0.59 (0.20-1.76)	0.34	-	-
Monotherapy vs. Combination	0.31 (0.10-0.90)	0.031*	0.24 (0.05-1.20)	0.094
Grade 3-5 CIP	0.09 (0.03-0.26)	<0.001*	0.16 (0.04-0.73)	0.018*
ECOG PS ( $\geq$ 2 vs. 0-1) at initial CIP	0.15 (0.06-0.38)	<0.001*	-	-
GGO vs. non-GGO	0.32 (0.14-0.74)	0.007*	0.27 (0.09-0.86)	0.027*
Clinical types				
Pure	Reference		Reference	
Induced	0.29 (0.08-1.08)	0.065	3.65 (0.39-34.10)	0.26
Mixed	0.23 (0.10-0.56)	0.001*	0.98 (0.28-3.49)	0.98
Progression of disease at initial CIP	0.15 (0.04-0.57)	0.005*	0.20 (0.04-1.05)	0.057
Recovery/improved	7.36 (2.03-26.65)	0.002*	1.95 (0.38-10.10)	0.43

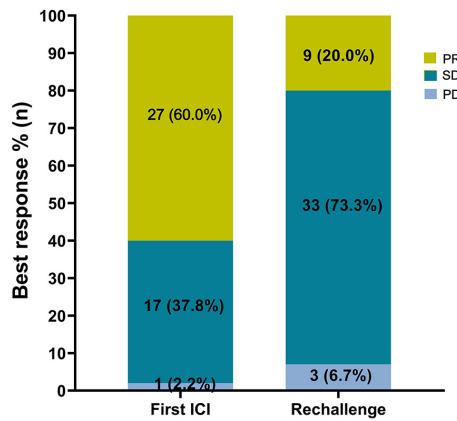
\*,  $P < 0.05$ . Variables with P values  $< 0.1$  in univariate analysis were analyzed in multivariate logistic regression analysis. Eastern Cooperative Oncology Group performance status (ECOG PS) was excluded from the multivariate analysis due to its high correlation with grade of CIP (Spearman's rank correlation:  $P < 0.001$ ). CI, confidence interval; CIP, checkpoint inhibitor-related pneumonitis; GGO, ground glass opacities; OR, odds ratio.



**Figure S1** ROC curves for predicting pneumonitis recurrence. AUC and P values were calculated and are shown in brackets. The unit for IL-6 is pg/mL; the unit for CRP is mg/mL; the unit for WBC and ALC both are K cells/mL. IL-6, interleukin-6; CRP, C-reactive protein; WBC, absolute white blood cell count; ANC, absolute neutrophil count; ROC, receiver operating characteristic; AUC, area under the curve.



**Figure S2** Kaplan-Meier survival curve analysis for (A) progression-free survival (PFS1) and (B) overall survival (OS1).



**Figure S3** Bar graph showing best response with first ICI and ICI rechallenge. PR, partial response; SD, stable disease; PD, disease progression; ICI, immune checkpoint inhibitor.