irAEs	Disease	Progression Free	<i>P</i> value	Odds Ratio					
	Progression	Survival		(95% CI)					
Overall			0.005	0.87 (0.79 to 0.96)	•	'			
Pyrexia	206	667	<0.001	1.34 (1.14 to 1.57)	:				
Pneumonitis	166	941	<0.001	0.74 (0.62 to 0.87)	⊢♦⊣				
Edema	86	273	0.016	1.35 (1.06 to 1.73)	:	<b> </b> ⊢⊸♦──	-		
Respiratory Failure	82	300	0.221	1.17 (0.91 to 1.49)	ŀ	+•			
GPHD	79	154	<0.001	2.21 (1.68 to 2.91)			•		
Neutropenia	39	369	<0.001	0.44 (0.32 to 0.62)	H H				
Thrombocytopenia	36	206	0.096	0.74 (0.52 to 1.06)	⊢.	+			
Stomatitis	33	85	0.013	1.66 (1.11 to 2.48)					
Dehydration	27	114	0.974	1.01 (0.66 to 1.54)		<b>↓</b>			
Peripheral Neuropathy	19	103	0.328	0.78 (0.48 to 1.28)	⊨¢¦	+			
Nephritis	13	179	<0.001	0.31 (0.17 to 0.54)	<b>⊷</b> → ¦				
ITP	10	61	0.286	0.70 (0.36 to 1.36)	<b>⊢</b>	<b> </b>			
Bone Marrow Failure	3	46	0.021	0.28 (0.09 to 0.89)	<b>⊢</b> ♦				
				. ,					
Abbreviations: GPHD,	general physic	cal health deteriora	tion:		· ·	1	I	1	
ITP, immune thromboc			uon,		0	1	2	3	4

Figure S1 The associations of immune-related adverse events (irAEs) with disease progression. Patients with tumor progression had a lower risk of pneumonitis, neutropenia, nephritis, and bone marrow failure.

irAEs	Comorbidity	non-Comorbidity	P value	Odds Ratio			
	Comorbiality			(95% CI)			
Overall			0.247	0.91 (0.78 to 0.07)	•		
Pneumonitis	68	1039	0.942	1.01 (0.78 to 1.30)	<b>⊢</b> ∔ <b>∮</b> —−1		
Respiratory Failure	38	344	0.001	1.73 (1.23 to 2.44)	;  ⊢◆	4	
Neutropenia	34	374	0.055	1.42 (0.99 to 2.02)	¦ <b>┝</b> ── <b>◆</b> ───┥		
Pyrexia	26	847	<0.001	0.46 (0.31 to 0.68)	→→ :		
Edema	25	334	0.485	1.16 (0.77 to 1.75)	r <mark>i   ♦</mark> i		
GPHD	12	221	0.545	0.84 (0.47 to 1.50)			
Thrombocytopenia	12	230	0.457	0.80 (0.45 to 1.44)			
Dehydration	12	129	0.228	1.44 (0.79 to 2.61)	····		
Nephritis	10	182	0.606	0.85 (0.45 to 1.60)	······		
Stomatitis	7	111	0.942	0.97 (0.45 to 2.09)	·		
Peripheral Neuropathy	7	115	0.869	0.94 (0.43 to 2.02)	<b>⊢</b>		
ITP	3	68	0.510	0.68 (0.21 to 2.16)	· · · · · · · · · · · · · · · · · · ·		
Bone Marrow Failure	3	46	0.993	1.01 (0.31 to 3.24)	<b>⊢</b>		
Abbreviations: GPHD,	general physic	al health deteriorat	tion <sup>.</sup>			1	
ITP, immune thromboc				0	) 1 2	3	4

**Figure S2** The associations of immune-related adverse events (irAEs) with comorbidity. Patients with comorbidity had lower risk of pyrexia. However, there was no statistical significance between comorbidity status with overall irAE risk.

irAEs	StageIV	non-StageIV	P value	Odds Ratio (95% CI)	
				(	
Overall			0.029	1.17 (1.02 to 1.35)	<b>⊢</b> ∲1
Neutropenia	67	341	<0.001	2.85 (2.18 to 3.73)	
Pneumonitis	51	1056	0.004	0.63 (0.49 to 0.88)	
Pyrexia	50	823	0.235	0.84 (0.63 to 1.12)	⊢ <b>◆</b> ∔•¦
Respiratory Failure	35	347	0.052	1.42 (1.00 to 2.02)	
Nephritis	28	164	<0.001	2.41 (1.61 to 3.62)	
Edema	23	336	0.821	0.95 (0.62 to 1.46)	
Thrombocytopenia	22	220	0.135	1.40 (0.90 to 2.18)	
Dehydration	17	124	0.011	1.92 (1.15 to 3.02)	↓ <u>↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ </u>
Peripheral Neuropathy	12	110	0.165	1.52 (0.84 to 2.78)	
GPHD	9	224	0.081	0.56 (0.28 to 1.09)	<b>⊢</b> ♦−−− <b>↓</b>
Stomatitis	7	111	0.737	0.88 (0.41 to 1.89)	
TP	5	66	0.909	1.06 (0.42 to 2.62)	▶ <b>───</b>
Bone Marrow Failure	4	45	0.682	1.24 (0.44 to 3.45)	·
Abbreviations: GPHD,	neneral n	uvsical health d	eteriorati	on. I	
ITP, immune thromboc	· ·		otonoruti	0	) 1 2 3 4

Figure S3 The associations of immune-related adverse events (irAEs) with stage. Patients with stage IV had increased overall irAE risk but reduced the risk of pneumonitis.

irAEs	Chemotherapy	non- Chemotherapy	<i>P</i> value	Odds Ratio (95% CI)							
Overall Neutropenia	266	142	<0.001 <0.001	1.51 (1.38 to 1.66) 10.73 (8.71 to 13.21)		•			F	•	
Pneumonitis	137	970	< 0.001	0.72 (0.60 to 0.86)	•						
Pyrexia	119	754	0.037	0.81 (0.66 to 0.99)							
Thrombocytopenia	76	166	<0.001	2.42 (1.84 to 3.18)		¦ ⊷•→					
Nephritis	56	136	<0.001	2.16 (1.58 to 2.96)		;⊷,					
Respiratory Failure	54	328	0.277	0.85 (0.64 to 1.14)	K						
GPHD	46	187	0.135	1.28 (0.93 to 1.77)		••••					
Edema	45	314	0.059	0.74 (0.54 to 1.01)	•	ł					
Peripheral Neuropathy	39	83	<0.001	2.46 (1.68 to 3.61)		;⊢, ●	-				
Dehydration	38	103	<0.001	1.93 (1.33 to 2.80)		⊢+					
Bone Marrow Failure	32	17	<0.001	9.88 (5.48 to 17.81)						<b></b>	$\rightarrow$
Stomatitis	31	87	0.003	1.86 (1.23 to 2.81)		┝┿╋━━┥					
ITP	18	53	0.035	1.77 (1.03 to 3.02)							
Abbreviations: GPHD, general physical health deterioration;					1		1	1	1	1	
ITP, immune thrombocytopenic purpura.					0	2	4	6	8	10	12

**Figure S4** The associations of immune-related adverse events (irAEs) with chemotherapy. Patients with tumor progression had a higher risk of neutropenia, thrombocytopenia, nephritis, neuropathy peripheral, dehydration, bone marrow failure, stomatitis, ITP.