Table S1 The univariate and multivariate Cox analysis of PFS in the KRAS group

Variables	Univariate analysis			Multivariate analysis		
	HR	95% CI	P	HR	95% CI	P
Age (years)						
<65 (n=47) *vs.* ≥65 (n=36)	1.191	0.729–1.946	0.484	1.476	0.875–2.491	0.144
ECOG						
0-1 (n=79) *vs.* ≥2 (n=4)	0.234	0.082–0.666	0.007	0.089	0.025–0.313	<0.0001
Gender						
Male (n=72) *vs.* female (n=11)	1.093	0.539–2.217	0.805	0.885	0.379–2.07	0.779
PD-L1 expression						
≥1% (n=19) *vs.* <1% (n=64)	0.342	0.192–0.608	<0.0001	0.265	0.121–0.580	0.001
Treatment line						
1 (n=51) *vs.* ≥2 (n=32)	0.828	0.507–1.351	0.449	1.297	0.705–2.387	0.403
Treatment method						
Combined (n=27) *vs.* monotherapy (n=56)	0.424	0.254–0.707	0.001	0.428	0.246–0.746	0.003
Mutation subtype						
G12C (n=30) *vs.* non-G12C (n=53)	0.563	0.337–0.942	0.029	0.456	0.262–0.794	0.006
Smoking status						
Current/former (n=49) *vs.* never (n=34)	0.860	0.528–1.401	0.545	1.81	0.933–3.510	0.079

PFS, progression-free survival; HR, hazard ratio; 95% CI, 95% confidence interval; ECOG, Eastern Cooperative Oncology Group; PD-L1, programmed death ligand 1.

Table S2 The univariate and multivariate Cox analysis of OS in the KRAS group

Variables	Univariate analysis			Multivariate analysis		
	HR	95% CI	P	HR	95% CI	P
Age (years)						
<65 (n=47) *vs.* ≥65 (n=36)	1.376	0.738–2.563	0.315	1.259	0.649–2.442	0.495
ECOG						
0-1 (n=79) *vs.* ≥2 (n=4)	0.234	0.083–0.666	0.006	0.22	0.062–0.777	0.019
Gender						
Female (n=72) *vs.* male (n=11)	0.921	0.386–2.194	0.852	1.106	0.372–3.288	0.857
PD-L1 expression						
≥1% (n=19) *vs.* <1% (n=64)	0.207	0.106–0.402	<0.0001	0.271	0.109–0.677	0.005
Treatment line						
1 (n=51) *vs.* ≥2 (n=32)	0.397	0.216–0.731	0.003	0.618	0.280–1.364	0.234
Treatment method						
Combined (n=27) *vs.* monotherapy (n=56)	0.822	0.425–1.591	0.561	0.711	0.339–1.491	0.367
Mutation subtype						
G12C (n=30) *vs.* non-G12C (n=53)	0.285	0.126–0.642	0.002	0.324	0.139–0.756	0.009
Smoking status						
Current/former (n=49) *vs.* never (n=34)	0.774	0.423–1.416	0.406	1.317	0.559–3.101	0.529

OS, overall survival; HR, hazard ratio; 95% CI, 95% confidence interval; ECOG, Eastern Cooperative Oncology Group; PD-L1, programmed death ligand 1.

Table S3 The univariate analysis of PFS and OS in the HER2 group

Variables	PFS			OS		
	Median PFS (months)	95% CI	P	Median OS (months)	95% CI	P
Gene subtype						
20Ins (n=31)	6.8	4.3–9.3	0.584	20.5	18.5–22.6	0.832
Amplification (n=11)	5.1	3.9–6.4		19	6.1–31.9	
Line of immunotherapy						
First-line (n=22)	7.6	3.7–11.4	0.037	24.7	16.7–29.8	0.026
≥second-line (n=20)	4.9	1.1–8.8		17.4	13.9–20.9	
ICI treatment regimen						
Monotherapy (n=10)	2.2	1.5–3.0	0.083	16.1	13.1–19.1	0.137
Combination therapy (n=32)	6.8	4.9–8.7		21.5	18.9–24.2	
PD-L1 status						
PD-L1<1% (n=12)	4.9	3.2–6.6	0.102	19.6	17.8–21.4	0.813
PD-L1≥1% (n=18)	5.9	3.8–8.1		18.8	14.1–23.5	
PD-L1 expression						
PD-L1<50% (n=21)	5.1	4.7–5.4	0.006	19	15.2–22.8	0.148
PD-L1≥50% (n=9)	21.8	–		33.8	11.6–55.9	
Smoking						
Never smoker (n=29)	6.2	3.5–8.9	0.521	20.5	18.5–22.5	0.762
Current/former smoker (n=13)	5.2	0–11.5		19	11.0–27.0	
Gender						
Female (n=20)	5.1	2.9–7.2	0.153	20.4	16.2–24.6	0.359
Male (n=22)	6.2	3.3–9.0		21.5	17.1–25.9	
ECOG score						
0-1 (n=42)	5.9	4.1–7.8	–	20.4	18.3–22.5	–
≥2[a]	–	–		–	–	
Age (years)						
<65 (n=29)	6.8	3.6–10.0	0.367	20.4	17.3–23.5	0.639
≥65 (n=13)	5.2	2.7–7.6		20.5	17.6–23.4	

[a], no patient had an ECOG score of 2 or greater. PFS, progression-free survival; OS, overall survival; 20Ins, exon 20 insertion; ICI, immune checkpoint inhibitor; PD-L1, programmed death ligand 1; ECOG, Eastern Cooperative Oncology Group.

Table S4 The univariate analysis of PFS and OS in the BRAF group

Variables	PFS			OS		
	Median PFS (months)	95% CI	P	Median OS (months)	95% CI	P
Gene subtype						
V600E (n=8)	3.9	0.3–7.5	0.558	21.3	2.0–40.6	0.441
Non-V600E (n=14)	7.7	1.4–14.0		23.7	20.7–26.7	
Line of immunotherapy						
First-line (n=15)	7.7	4.7–10.7	0.453	23.7	17.3–30.1	0.739
≥second-line (n=7)	6.7	2.6–10.8		21.9	5.1–38.7	
ICI treatment regimen						
Monotherapy (n=5)	2	0.8–3.2	0.953	NR	–	–
Combination therapy (n=17)	7.7	5.6–9.9		21.9	18.8–25.0	
PD-L1 status						
PD-L1<1%[a] (n=1)	–	–	–	–	–	–
PD-L1≥1% (n=17)	6.7	4.6–8.8		21.9	18.9–24.9	
PD-L1 expression						
PD-L1<50% (n=12)	5.2	1.7–8.7	0.126	21.3	18.2–24.4	0.273
PD-L1≥50% (n=6)	10.4	4.9–16.0		27.8	15.8–39.8	
Smoking						
Never smoker (n=12)	6.1	4.0–8.2	0.419	21.3	17.4–25.2	0.276
Current/former smoker (n=10)	10.4	2.9–18.0		35.3	19.0–51.5	
Gender						
Female (n=5)	5.2	2.7–7.6	0.931	21.3	5.8–36.8	0.659
Male (n=17)	8.5	5.2–11.8		23.7	20.1–27.3	
ECOG score						
0-1 (n=22)	6.7	4.6–8.8	–	21.9	18.9–24.9	–
≥2 (n=0)	–	–		–	–	
Age (years)						
<65 (n=11)	13.1	0.1–26.1	0.299	NR	–	–
≥65 (n=11)	6.7	5.0–8.4		21.7	17.5–25.9	

[a], no patient had a PD-L1 expression less 1%. PFS, progression-free survival; OS, overall survival; ICI, immune checkpoint inhibitor; PD-L1, programmed death ligand 1; ECOG, Eastern Cooperative Oncology Group.

Table S5 The univariate analysis of PFS and OS in the MET group

Variables	PFS			OS		
	Median PFS (months)	95% CI	P	Median OS (months)	95% CI	P
Gene subtype						
Amplification (n=13)	7.5	3.9–11.1	0.115	24.1	11.2–37.0	0.876
Exon 14 skipping (n=8)	4.6	0.5–8.6		20.9	15.3–26.5	
Line of immunotherapy						
First-line (n=12)	6.1	3.4–8.7	0.298	NR	–	0.040
≥second-line (n=9)	5.3	1.6–9.0		17.5	12.2–22.7	
ICI treatment regimen						
Monotherapy (n=7)	2.4	1.5–3.4	0.202	17.5	13.4–21.5	0.067
Combination therapy (n=14)	6	4.7–7.2		NR	–	
PD-L1 status						
PD-L1<1% (n=3)	3.1	1.7–4.4	0.153	12.1	3.4–20.8	0.004
PD-L1≥1% (n=17)	6.0	4.7–7.2		21.6	15.5–27.6	
PD-L1 expression						
PD-L1<50% (n=11)	3.1	0.2–6.0	0.574	17.5	8.6–26.3	0.383
PD-L1≥50% (n=9)	6.0	4.1–7.8		21.6	19.6–23.5	
Smoking						
Never smoker (n=9)	5.3	5.2–5.4	0.567	–	–	0.102
Current/former smoker (n=12)	5.3	0–12.0		18.7	14.0–23.5	
Gender						
Female (n=4)	5.3	3.9–6.7	0.432	21.6	–	0.354
Male (n=17)	5.3	0–10.9		18.7	12.5–24.9	
ECOG score						
0-1 (n=18)	6.0	5.0–7.0	0.017	24.1	18.3–29.9	0.005
≥2 (n=3)	1.7	0.5–3.0		15	13.3–16.6	
Age (years)						
<65 (n=7)	5.3	0–11.2	0.943	24.1	10.7–37.5	0.745
≥65 (n=14)	5.3	4.0–6.6		20.9	17.8–24.0	

PFS, progression-free survival; OS, overall survival; ICI, immune checkpoint inhibitor; PD-L1, programmed death ligand 1; ECOG, Eastern Cooperative Oncology Group.

Table S6 The univariate analysis of PFS and OS in the ALK, RET, or ROS1 rearrangement group

Variables	PFS			OS		
	Median PFS (months)	95% CI	P	Median OS (months)	95% CI	P
Line of immunotherapy						
First-line (n=12)	3.1	1.9–4.2	0.802	13.8	1.5–26.1	0.621
≥second-line (n=24)	3.9	2.1–5.8		15.4	13.8–17.0	
ICI treatment regimen						
Monotherapy (n=13)	2	1.7–2.3	0.011	12.4	9.2–15.6	0.013
Combination therapy (n=23)	4.1	3.6–4.7		23.7	11.4–36.1	
PD-L1 status						
PD-L1<1% (n=6)	2.2	0–5.4	0.861	14.5	13.0–16.0	0.945
PD-L1≥1% (n=18)	3.7	1.1–6.3		15.4	7.0–21.1	
PD-L1 expression						
PD-L1<50% (n=16)	2.7	0.2–5.1	0.924	14.5	10.6–18.4	0.311
PD-L1≥50% (n=8)	4.1	0.4–7.9		22.2	0–47.3	
Smoking						
Never smoker (n=25)	3.5	2.1–4.9	0.504	14.5	12.1–17.0	0.302
Current/former smoker (n=11)	4.1	2.2–6.1		22.2	16.3–28.1	
Gender						
Female (n=17)	3.1	1.1–5.0	0.049	13.8	11.7–15.9	0.206
Male (n=19)	4.1	3.3–4.9		22.2	15.8–28.6	
ECOG score						
0-1 (n=34)	3.5	1.9–5.0	0.301	15.7	12.1–19.3	0.788
≥2 (n=2)	3.9	–		15	–	
Age (years)						
<65 (n=25)	3.5	2.1–4.8	0.507	15.4	12.2–18.6	0.467
≥65 (n=11)	3.9	2.1–5.8		15.7	13.0–18.4	

PFS, progression-free survival; OS, overall survival; ICI, immune checkpoint inhibitor; PD-L1, programmed death ligand 1; ECOG, Eastern Cooperative Oncology Group.