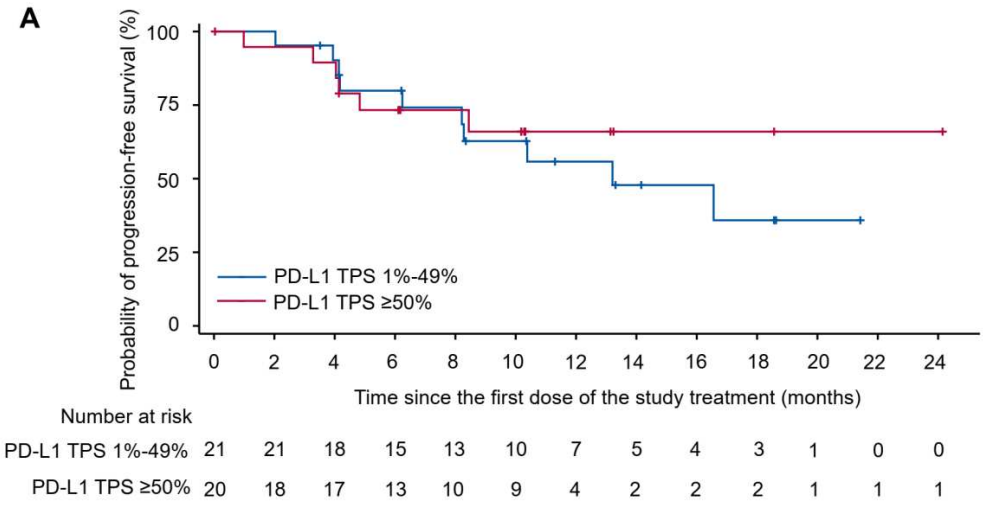
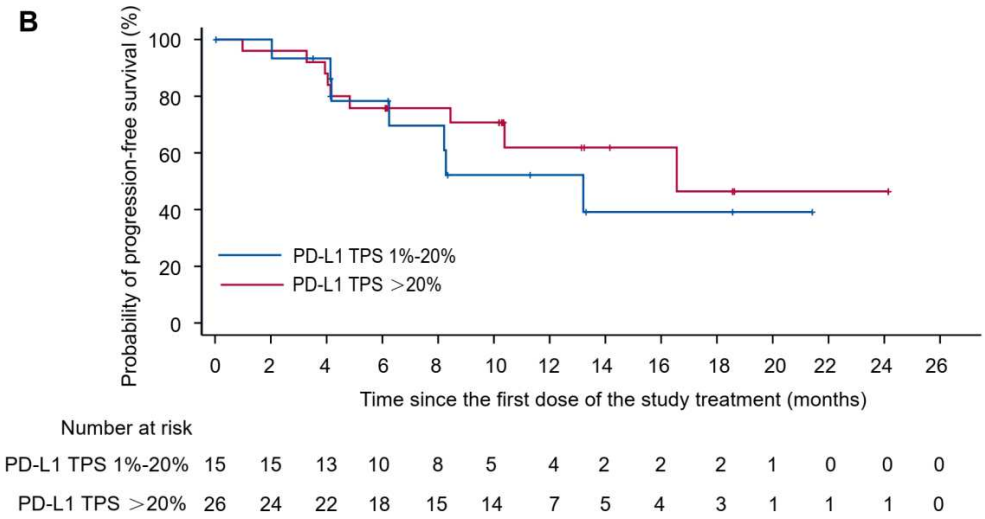
Online-only Supplementary Materials

Content

Figure S1. Kaplan–Meier estimates of PFS by PD-L1 TPS. (A) PFS in patients with PD-L1 TPS of 1-49% compared to those with PD-L1 TPS ≥50%; (B) PFS in patients with PD-L1 TPS of 1-20% versus those with PD-L1 TPS >20%. PFS, progression-free survival; PD-L1, programmed death-ligand 1; TPS, tumor proportion score.





28 **Table S1. Listing of participating institutions, principle investigators, patient numbers, and ethics committee approvals.**

Principal investigator	Institution	Number of patients	Ethics committee approval number/ID
Shengxiang Ren/Caicun Zhou	Shanghai Pulmonary Hospital, Tongji University	8	20149ZL-3
Xicheng Wang	The First Affiliated Hospital of Guangdong Pharmaceutical University	4	2020-(59)-02
Yufeng Cheng	Qilu Hospital of Shandong University	4	2020029 (3)
Baohui Han	Shanghai Chest Hospital	4	LS2122
Shanyong Yi	Zhengzhou Central Hospital	3	2020-011-05
Yalun Li	West China School of Medicine/West China Hospital of Sichuan University	3	2020 (76)
Jia Fan/Tianshu Liu	Zhongshan Hospital, Fudan University	2	2020-016 (5)
Jun Zhao	Beijing Cancer Hospital	2	2020YW54-ZY02

Jifeng Feng	Jiangsu Cancer Hospital	2	2020-015-03
Sheng Hu	Hubei Cancer Hospital	2	2021-45
Ying Cheng	Jilin Cancer Hospital	2	202009-060-03
Shanzhi Gu	Hunan Cancer Hospital	1	2021-66
Yueyin Pan	The First Affiliated Hospital of USTC, Anhui Provincial Hospital	1	2021-94
Shegan Gao	The First Affiliated Hospital of Henan University of Science and Technology	1	2021-040
Caigang Liu	Shengjing Hospital of China Medical University	1	2021PS037
Yongzhong Luo	Hunan Cancer Hospital & the Affiliated Cancer Hospital of Xiangya School of Medicine, Central South University	1	2021-481
Ying Liu	Henan Cancer Hospital	0	2020031804

29

5

Table S2. Basket trial design.

This is an open-label, multicenter, phase 2 clinical trial designed to evaluate the efficacy and safety of camrelizumab in combination with famitinib for patients with advanced solid tumors. The trial consists of 11 cohorts: cohorts 1 to 9 and 11 are designed as single-arm studies, while cohort 10 is designed as a randomized controlled trial. The cohorts are as follows:
• Cohort 1: head and neck squamous cell carcinoma; • Cohort 2 and Cohort 10: advanced or metastatic NSCLC with wild-type *EGFR* and *ALK*, had PD-L1 TPS ≥1%, and had not previously received systemic therapy for advanced or metastatic disease; • Cohort 3: gastric or gastroesophageal junction adenocarcinoma; • Cohort 4: hepatocellular carcinoma; • Cohort 5: colorectal cancer; • Cohort 6: castration-resistant prostate cancer; • Cohort 7: NSCLC patients who failed previous anti-PD-1/anti-PD-L1 antibody therapy; • Cohort 8: esophageal squamous cell carcinoma; • Cohort 9: nasopharyngeal carcinoma; • Cohort 11: gastric or gastroesophageal junction adenocarcinoma harboring *FGFR2* gene amplification.
In this study, patients in cohorts 1-9 and 11, as well as those in the combination therapy group of cohort 10, are administered a combination dose regimen. This regimen includes 20 mg of famitinib, given orally once daily, and a 200 mg fixed dose of camrelizumab, administered intravenously once every three weeks (Q3W). Each treatment cycle lasts for three weeks. Patients in the monotherapy group of cohort 10 will receive only the 200 mg fixed dose of camrelizumab, also administered intravenously on a Q3W schedule, for a 3-week treatment

cycle.
• The sample size for cohorts 1-4, 7-9, and 11 is calculated using the Simon two-stage method. Cohorts 1, 3, 4, and 11 will enroll 21-34 patients each; Cohort 2 will enroll 21-43 patients; and cohorts 7-9 will each enroll 19-27 patients. After completing stage 1 of enrollment and efficacy observation for these cohorts, the decision to include additional patients in stage 2 will be based on each cohort's efficacy results, as measured by the number of responses observed. • Cohorts 5-6 enroll 30 patients each, and if a certain cohort shows an ideal response rate, further expansion study should be discussed for the cohort. • Cohort 10 enrolls 120 patients, who are randomly assigned to receive either camrelizumab plus famitinib or camrelizumab monotherapy at a 1:1 ratio. Stratified factors include histological classification (non-squamous cell carcinoma vs squamous cell carcinoma) and the expression level of PD-L1 (TPS 1-49% vs TPS ≥50%).

PD-L1, programmed death-ligand 1; TPS, tumor proportion score.

Table S3. Key exclusion criteria.

Key exclusion criteria:
● Active or past history of autoimmune disease;
● Concurrent use of immunosuppressive agents or taking systemic corticosteroids at immunosuppressive doses;
● Untreated central nervous system (CNS) metastases*;
● Clinically significant cardiovascular disease;
● Uncontrolled hypertension;
● Bleeding tendency or concurrent use of anticoagulants;
● Radiographic detection of tumor invasion of a major blood vessel or an unclear boundary with a blood vessel, cavitation in lung lesions with bleeding risks as determined by the investigator;
● A history of pulmonary thrombosis, stroke, or deep vein thrombosis within the past six months;
● Active infection;
● Another malignancy within 5 years.

*According to the study protocol, patients with CNS metastases could be included if they had previously received systemic or radical treatment (surgery or radiotherapy) for brain or meningeal metastases and met all of the following conditions: 1) radiographic evidence confirming stable disease for a minimum of one month; 2) discontinuation of systemic corticosteroid therapy (at doses exceeding 10 mg/day of prednisone or its equivalent) for more than two weeks; 3) no current clinical symptoms associated with CNS metastases.

40 **Table S4. Principles for dose adjustments of camrelizumab and/or famitinib due to treatment-related adverse events.**

Treatment-related toxicity		**Grading**	**Whether to interrupt study treatment**		**Criteria for resumption**	**Dose modification for famitinib**	**Criteria for treatment discontinuation**
			Camrelizumab	**Famitinib**			
Camrelizumab- and famitinib- related toxicities	Hematologic toxicity	Grade 1-2	No	No	—	—	—
		Grade 3	No	Yes	Toxicity returns to ≤grade 2	Resume at original dose*	Discontinue famitinib if grade 3 or greater hematologic toxicities recur after two modifications
		Grade 4	Yes	Yes	Toxicity returns to ≤grade 2	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	

	ALT/AST and TBIL increased	Grade 2 increased ALT/AST (post-hepatoprotective treatment); Grade 2 increased bilirubin (post-hepatoprotective treatment)	Yes	Yes	Toxicity returns to ≤grade 1 or baseline levels	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	Camrelizumab should be permanently discontinued if dose interruption exceeded 12 weeks, and the toxicity could not be returned to baseline
		Grade 3/4 ALT/AST elevation (first onset) Grade 3 TBIL elevation (first onset)	Yes	Yes	Toxicity returns to ≤grade 1or baseline	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	1. Discontinue camrelizumab treatment after >12 weeks of interruption without return to baseline levels; 2. Discontinue camrelizumab

							treatment if grade 3 ALT/AST elevation recurs.
Camrelizumab-related toxicity	Non-hematologic toxicity (immune-related)	Grade 1	No	No	—	—	—
		Grade 2 (lasting for ≥7 days)	Yes	Yes	Toxicity returns to ≤grade 1	Resume at original dose	Camrelizumab should be permanently discontinued if dose interruption exceeded 12 weeks and the toxicity could not be returned to ≤grade 1
		Grade 3	Yes	Yes	Toxicity returns to ≤grade 1	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	
	RCCEP	Grade 3	Yes	No	Toxicity returns to	Resume at original dose	Camrelizumab should be permanently

					≤grade 2		discontinued if dose interruption exceeded 12 weeks
	Immune-related pneumonia	Grade 2	Yes	Yes	Toxicity returns to ≤grade 1	First onset: Resume at original dose Second onset: Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	Camrelizumab should be permanently discontinued if dose interruption exceeded 12 weeks and the toxicity could not be returned to ≤grade 1

Famitinib-related toxicity	Hypertension	Grade 3 (after corrective therapy)	No	Yes	Toxicity returns to ≤grade 1	First onset: Resume at original dose; Second onset: Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	Discontinue famitinib treatment if grade 3 hypertension recurs after re-modification
		Hypertensive crisis	Yes	Yes	Toxicity returns to ≤grade 1	Permanently discontinue famitinib treatment	Discontinue famitinib treatment
	Proteinuria	Grade 3 (24 h protein	No	Yes	Toxicity	Reduce the dose	Discontinue famitinib

	(without significant increase in blood creatinine)	urine quantification)			returns to ≤grade 2	to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	treatment if grade 3 proteinuria recurs after re-modification
	PPE syndrome	Grade 3	No	Yes	Toxicity returns to ≤grade 1	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	Discontinue famitinib treatment if grade 3 PPE syndrome recurs after 2 modifications
	Non-hematologic toxicity	Grade 3	No	Yes	Toxicity returns to ≤grade 1	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days	Discontinue famitinib treatment if the event recurs after re-modification

						off	
		Grade 4	Yes	Yes	Toxicity returns to ≤grade 1	Reduce the dose to 15 mg once daily, or treat at 15 mg 14 days on and 7 days off	

[*]For the first onset of grade 3 decreased platelet count, the dose of famitinib should be reduced to 15 mg after the toxicity returns to grade ≤2; if grade 3 platelet count decreased recurs, famitinib administration should be discontinued.

ALT, alanine aminotransferase; AST, aspartate aminotransferase; TBIL, total bilirubin; PPE, palmar-plantar erythrodysesthesia; RCCEP, reactive cutaneous capillary endothelial proliferation.

Table S5. Subsequent antitumor therapies that were initiated after the last dose of the study treatment.

	Patients (N=41)
Any subsequent therapy, n (%)	11 (26.8)
Systemic antitumor treatment	10 (24.4)
Targeted therapy	6 (14.6)
Chemotherapy	6 (14.6)
Immunotherapy	3 (7.3)
Traditional Chinese medicine	3 (7.3)
Radiotherapy	1 (2.4)

Percentage were calculated with the number of patients in the full analysis set as denominator.

49 **Table S6. Objective response rates by subgroups.**

Variables	Subgroups	Number of responders	ORR, % (95% CI)
Sex	Male (n=35)	21	60.0 (42.1-76.1)
	Female (n=6)	1	16.7 (0.4-64.1)
Age	<65 years (n=21)	9	42.9 (21.8-66.0)
	≥65 years (n=20)	13	65.0 (40.8-84.6)
Smoking status	Never (n=12)	4	33.3 (9.9-65.1)
	Current (n=24)	14	58.3 (36.6-77.9)
	Former (n=4)	13	75.0 (19.4-99.4)
ECOG performance status	0 (n=5)	3	60.0 (14.7-94.7)
	1 (n=35)	18	51.4 (34.0-68.6)
Histologic type	Non-squamous carcinoma (n=30)	16	53.3 (34.4-71.7)
	Squamous carcinoma (n=11)	6	54.5 (23.4-83.3)
Liver metastases	Yes (n=3)	2	66.7 (9.4-99.2)
	No (n=38)	20	52.6 (35.8-69.0)
Brain metastases	Yes (n=1)	1	100.0 (2.5-100.0)
	No (n=40)	21	52.5 (36.1-68.5)
PD-L1 TPS	1-49% (n=21)	10	47.6 (25.7-70.2)
	≥50% (n=20)	12	60.0 (36.1-80.9)
tTMB	<10 muts/Mb (n=15)	7	46.7 (21.3-73.4)

	≥ 10 muts/Mb (n=12)	7	58.3 (27.7-84.8)

ECOG, Eastern Cooperative Oncology Group; PD-L1, programmed death-ligand 1; ORR, objective response rate; TPS, tumor proportion score; tTMB, tissue tumor mutational burden; muts/Mb, mutations per megabase.

Table S7. Tumor responses and survival data in never smokers and current or former smokers.

Variables	**Never smokers (n=12)**	**Current or former smokers (n=28)**
Best overall response, n (%)		
Partial response	4 (33.3)	17 (60.7)
Stable disease	7 (58.3)	9 (32.1)
Progressive disease	0	1 (3.6)
Not evaluable	1 (8.3)	1 (3.6)
ORR, % (95% CI)	33.3 (9.9-65.1)	60.7 (40.6-78.5)
Duration of response, months, median (95% CI)	NR	NR (9.1-NR)
Progression-free survival, months, median (95% CI)	10.4 (4.1-NR)	16.6 (8.3-NR)
Overall survival, months, median (95% CI)	NR (10.3, NR)	20.4 (13.2, NR)

ORR, objective response rate; CI, confidence interval; DCR, disease control rate; NR, not reached.

58 **Table S8. Tumor responses and survival data in patients categorized by PD-L1 TPS: 1-49% vs. ≥50% and 1-20% vs. >20%.**

Variables	PD-L1 TPS category		PD-L1 TPS category	
	1-49% (n=21)	**≥50%** (n=20)	**1-20%** (n=15)	**>20%** (n=26)
Best overall response, n (%)				
Partial response	10 (47.6)	12 (60.0)	6 (40.0)	16 (61.5)
Stable disease	10 (47.6)	6 (30.0)	8 (53.3)	8 (30.8)
Progressive disease	1 (4.8)	0	1 (6.7)	0
Not evaluable	0	2 (10.0)	0	2 (7.7)
ORR, % (95% CI)	47.6 (25.7-70.2)	60.0 (36.1-80.9)	40.0 (16.3-67.7)	61.5 (40.6-79.8)
Duration of response, months, median (95% CI)	14.5 (6.2-NR)	NR (6.4-NR)	NR (6.2-NR)	NR (14.5-NR)
Progression-free survival, months, median (95% CI)	13.2 (6.2-NR)	NR (4.8-NR)	13.2 (4.2-NR)	16.6 (8.4-NR)

Overall survival, months, median (95% CI)	20.4 (11.5, NR)	NR	20.4 (6.7, NR)	NR

PD-L1, programmed death-ligand 1; TPS, tumor proportion score; ORR, objective response rate; CI, confidence interval; NR, not reached.

Table S9. Impact of relative dose intensity of camrelizumab plus famitinib on tumor responses and survival data[*].

Variables	RDI ≥ 80% (n=23)	RDI < 80% (n=18)
Duration of camrelizumab exposure, month, median (IQR)	8.2 (4.2-11.2)	12.4 (6.2-15.2)
Duration of famitinib exposure, month, , median (IQR)	8.2 (4.0-11.2)	10.7 (4.0-12.9)
ORR, % (95% CI)	47.8 (26.8-69.4)	61.1 (35.7-82.7)
Progression-free survival, months, median (95% CI)	8.3 (4.2-NR)	NR (10.4-NR)
Overall survival, months, median (95% CI)	20.4 (11.5, NR)	NR (NR-NR)

ORR, objective response rate; IQR, interquartile range; CI, confidence interval; RDI, relative dose intensity; NR, not reached.

[*]Patients with an RDI less than 80% for either camrelizumab or famitinib were classified into the RDI < 80% category. Those with an RDI of 80% or higher for both drugs were classified in the RDI ≥ 80% category. The relative dose intensity is calculated by dividing the actual dose intensity received by the planned dose intensity.

Table S10. Treatment-related SAEs

SAEs, n (%)	Patients (N=41)	
	Any grade	Grade ≥3
Any	14 (34.1)	11 (26.8)
Alanine aminotransferase increased	5 (12.2)	3 (7.3)
Aspartate aminotransferase increased	5 (12.2)	1 (2.4)
Vomiting	2 (4.9)	2 (4.9)
Platelet count decreased	1 (2.4)	1 (2.4)
Electrocardiogram ST segment elevation	1 (2.4)	1 (2.4)
Diarrhea	1 (2.4)	1 (2.4)
Ileus paralytic	1 (2.4)	1 (2.4)
Hemoptysis	1 (2.4)	1 (2.4)
Pyrexia	1 (2.4)	1 (2.4)
Diabetes mellitus	1 (2.4)	1 (2.4)
Immune-mediated hepatitis	1 (2.4)	1 (2.4)
Cerebral infarction	1 (2.4)	1 (2.4)
Blood creatinine increased	1 (2.4)	0
Cholecystitis	1 (2.4)	0
Atrial fibrillation	1 (2.4)	0

SAE, serious adverse event.

71 **Table S11. TRAEs leading to dose modification**

TRAEs, n (%)	Patients (N=41)	
	Any grade	Grade ≥3
TRAEs leading to interruption of camrelizumab	9 (22.0)	5 (12.2)
Alanine aminotransferase increased	4 (9.8)	1 (2.4)
Aspartate aminotransferase increased	3 (7.3)	0
Immune-mediated lung disease	2 (4.9)	0
Hypokalemia	1 (2.4)	1 (2.4)
Hyponatremia	1 (2.4)	1 (2.4)
Pyrexia	1 (2.4)	1 (2.4)
Diarrhea	1 (2.4)	1 (2.4)
Immune-mediated hepatitis	1 (2.4)	1 (2.4)
Vomiting	1 (2.4)	1 (2.4)
Anemia	1 (2.4)	1 (2.4)
Diabetes mellitus	1 (2.4)	1 (2.4)
Electrocardiogram ST segment elevation	1 (2.4)	1 (2.4)
Atrial fibrillation	1 (2.4)	0
Hyperthyroidism	1 (2.4)	0
Ventricular extrasystoles	1 (2.4)	0
Platelet count decreased	1 (2.4)	0

TRAEs leading to interruption of famitinib	26 (63.4)	14 (34.1)
Hypertension	10 (24.4)	4 (9.8)
Alanine aminotransferase increased	6 (14.6)	3 (7.3)
Aspartate aminotransferase increased	5 (12.2)	1 (2.4)
Proteinuria	5 (12.2)	1 (2.4)
Neutrophil count decreased	4 (9.8)	2 (4.9)
Diarrhea	3 (7.3)	1 (2.4)
White blood cell count decreased	3 (7.3)	0
Platelet count decreased	3 (7.3)	0
Abdominal distension	2 (4.9)	2 (4.9)
Vomiting	2 (4.9)	1 (2.4)
Asthenia	2 (4.9)	0
PPE syndrome	2 (4.9)	0
Constipation	1 (2.4)	1 (2.4)
Hypokalemia	1 (2.4)	1 (2.4)
Hyponatremia	1 (2.4)	1 (2.4)
Pyrexia	1 (2.4)	1 (2.4)
Hypertriglyceridemia	1 (2.4)	1 (2.4)
Immune-mediated hepatitis	1 (2.4)	1 (2.4)
Anemia	1 (2.4)	1 (2.4)

Diabetes mellitus	1 (2.4)	1 (2.4)
Electrocardiogram ST segment elevation	1 (2.4)	1 (2.4)
Gamma-glutamyltransferase increased	1 (2.4)	0
Cholecystitis	1 (2.4)	0
Abdominal pain	1 (2.4)	0
Hypoesthesia	1 (2.4)	0
Hyperthyroidism	1 (2.4)	0
Hemoptysis	1 (2.4)	0
Mouth hemorrhage	1 (2.4)	0
Mouth ulceration	1 (2.4)	0
Circumoral swelling	1 (2.4)	0
Rash	1 (2.4)	0
Occult blood positive	1 (2.4)	0
Abdominal pain upper	1 (2.4)	0
Insomnia	1 (2.4)	0
Duodenal ulcer	1 (2.4)	0
Decreased appetite	1 (2.4)	0
Electrocardiogram ST segment abnormal	1 (2.4)	0
Drug-induced liver injury	1 (2.4)	0
TRAEs leading to dose reduction of famitinib	22 (53.7)	15 (36.6)

Alanine aminotransferase increased	6 (14.6)	3 (7.3)
Hypertension	6 (14.6)	3 (7.3)
Aspartate aminotransferase increased	6 (14.6)	2 (4.9)
Proteinuria	4 (9.8)	3 (7.3)
Platelet count decreased	4 (9.8)	3 (7.3)
Vomiting	2 (4.9)	2 (4.9)
PPE syndrome	2 (4.9)	1 (2.4)
Neutrophil count decreased	2 (4.9)	1 (2.4)
Gamma-glutamyltransferase increased	1 (2.4)	0
Asthenia	1 (2.4)	0
Abdominal distension	1 (2.4)	0
Protein urine present	1 (2.4)	0
Anemia	1 (2.4)	0
Abdominal pain upper	1 (2.4)	0
Decreased appetite	1 (2.4)	0
Blood alkaline phosphatase increased	1 (2.4)	0
Hematuria	1 (2.4)	0
TRAEs leading to modification in dose frequency of famitinib	12 (29.3)	4 (9.8)
Vomiting	2 (4.9)	2 (4.9)
Neutrophil count decreased	2 (4.9)	1 (2.4)

Proteinuria	1 (2.4)	1 (2.4)
Alanine aminotransferase increased	1 (2.4)	0
Abdominal distension	1 (2.4)	0
Protein urine present	1 (2.4)	0
Abdominal pain upper	1 (2.4)	0
Aspartate aminotransferase increased	1 (2.4)	0
Hematuria	1 (2.4)	0
Platelet count decreased	1 (2.4)	0
PPE syndrome	1 (2.4)	0

72 TRAEs, treatment-related adverse events; PPE, palmar-plantar erythrodysesthesia.

73

Table S12. Immune-mediated adverse events regardless of attribution to study treatment

AEs, n (%)	Patients (N=41)	
	Any grade	Grade ≥3
Any	9 (22.0)	3 (7.3)
Hypothyroidism	2 (4.9)	0
Blood creatinine increased	2 (4.9)	0
Immune-mediated lung disease	2 (4.9)	0
Alanine aminotransferase increased	1 (2.4)	1 (2.4)
Hypokalemia	1 (2.4)	1 (2.4)
Diabetes mellitus	1 (2.4)	1 (2.4)
Immune-mediated hepatitis	1 (2.4)	1 (2.4)
Diarrhea	1 (2.4)	1 (2.4)
Hyperthyroidism	1 (2.4)	0
Aspartate aminotransferase increased	1 (2.4)	0
Blood bilirubin increased	1 (2.4)	0
Lipase increased	1 (2.4)	0
Occult blood positive	1 (2.4)	0
Neutrophil count decreased	1 (2.4)	0
Hyperglycemia	1 (2.4)	0
Skin reaction	1 (2.4)	0

Rash	1 (2.4)	0
Proteinuria	1 (2.4)	0
Anemia	1 (2.4)	0

AE, adverse event.