Supplementary Data:

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						В						С					
ibgroup	Object 1	response rate (ORR)	p Value	Risk ratio (R	R)	Subgroup	М	edian PFS	Hazar	d Ratio	p Value	Subgroup	N	Icdian OS	Hazard	Ratio	
T	n	74 (95 % CI)		1	KR (95% CI)	Sav	month	95% CI	1	76 (95% CI)		Sev	montu	95% CI		% (25% CI)	
Male (n=15)	10	66.7 (41.7-84.8)	0.258		1.6 (0.75-3.42)	Male (n=15)	1.93	2.97-8.17		0.958 (0.396-2.318)	0.924	Male (n=15)	14.13	4.73-NE		0.871 (0.299-2.537)	'n.
Female (n=12)	5	41.7 (19.3-68.1)		1		Female (n=12)	6.07	1.83-NF				Female (n=12)	12.53	4.43-NE	7		
цо						Ase						Age					
<61 (n=12)	9	75.0 (46.87-91.1)	0.121		1.88 (0.93-3.78)	<61 (n=12)	6.07	2.67-NE	i	1.001(0.958-1.053)	0.865	<61 (n=12)	NR	4.60-NE	4	1.01(0.954-1.069)	ŝ
≥61 (n=15)	6	40.0 (19.8-64.3)		1		>61 (n=15)	4.93	2.97-7.93		100		≥61 (n=15)	8.63	4.67-NE	T		
tology				1		Histology						Histology					
BCA (n=5)	3	60.0 (23.1-88.2)				GBCA (n-5)	3.07	2.67-NE				GBCA (n=5)	8.50	5.03-NE			
stra-CCA (n=8)	3	37.5 (13.7-69.4)	0.061		1.6 (0.51-5.03)	Intra-CCA (n=8)	3.10	1.67-NE		0.731 (0.494-1.083)	0.118	Intra-CCA (n=8)	4.73	1.90-NE	_	0.674 (0.424-1.073	ŝ
erihiliar-CCA (n=5)	1	20.0 (3.6-62.5)			3 (0.45-19.93)	Perihiliar-CCA (n=5)	6.27	3.40-NE	1			Perihiliar-CCA (n=5)	14.13	6.67-NE			
histal-CCA (n-9)	8	88.9 (56.5-98.0)		- -	0.68 (0.32-1.43)	Distal-CCA (n=9)	11.00	3.53.NF				Distal-CCA (n=9)	NR	4.60-NE			
stment history				1		Instruct history						Treatment history					
io (u=4)	1	25.0 (4.6-69.9)	0.294		0.41 (0.07-2.31)	No (n=4)	2.97	1.83-NE		0.691 (0.202-2.371)	0.557	No (n=4)	5.00	1.90-NE		0.369 (0.099-1.373	,
es (n=23)	14	60.9 (40.8-77.8)				Yes (n=23)	6.27	3 53.8 17		0.077 (0.202 2.277)	0.001	Yes (n=23)	14.13	6.67-NE			
motherapy history						Chemotheruny history						Chemotheniny history					
o (n=21)	13	61.9 (40.9-79.2)	0.358		1.86 (0.57-6.05)	No (n=21)	6.27	3 10-11 00		1 331 (0 482-3 677)	0.582	No (n=21)	NR	5.03-NF		1 922 (0 64-5 769	ļ
cs (p=6)	2	33.3 (9.7-70.0)				Ver (null)	3.53	2.40-NE	1	1.01(0.020.007)	0.000	Yes (onti)	6.67	4.67.NF	-		ĺ
ery history						Sumery history	0.00	6. IV (11)				Surrory history	0.07	1.011142			
(m=9)	2	22.2 (6.3-54.7)	0.037		0.31 (0.09-1.08)	No (orth)	6.07	1 PT NE	_	0.811 /0.222 2.0415	0.657	No (emb)	9.63	1.90 NF		0.806/0.268-2.429	į
s (n=18)	13	72.2 (49.1-87.5)				Ver (n - 18)	4.03	3.40-11.00		0.011 (0.522-2.041)	0.007	Yes (n=18)	14.13	S 03-NE			
us at enrollment						Status at annollment	4.7.7					Status at enrollment	11.15				
nresectable (n-1)	1	100.0 (20.7-100.0)		_		Linesectable (n=1)	NIZ					Unesectable (n=1)	NR		=		
rimary (n-4)	1	40.0 (11.8-76.9)	0.294		0.42 (0.07-2.39)*	Primary (nml)	2.07	1.83.NF		1.445 (0.536-3.898)	0.467	Primary (n=4)	5.00	1.90-NE	i	1.015 (0.382-2.690	Ì
courrent (n=22)	13	59.1 (38.7-76.7)				Recurrent (n#22)	6.07	3.40.8.17				Recurrent (n=22)	14.13	5.03.NE			
.1 expression						PD-J L compasion	0.01					PD-L expression					
ot evaluable (n=6)	5	83.3 (43.7-97.0)				Not evaluable (n=6)	6.70	2.67.NF				Not evaluable (n=6)	NR	5.03-NE			
1% (n=11)	4	36.4 (15.2-61.6)	0.395		0.61 (0.24-1.54)	<1% (n=11)	1 33	2 97.7 93		0.426 (0.144-1.267)	0.125*	<1% (n=11)	12.53	4 67.NF		0.664 (0.202-2.175	2
% (n=10)	6	60 (31.3-83.2)		1		>1% (n=10)	6.27	1.67.NE				>1% (n=10)	8.63	1 SUNE			
rmelastases						Liner material or	0.21	Loren.				Liver metadam	0.00	1.50-142			
o (n-6)	4	66.7 (30.0-90.3)	0.662	-	1.27 (0.63-2.56)	No (n=6)	6.70	3.10-NE	+	0.993 (0.358-2.748)	0.989	No (n=6)	12.53	3.73.NF		1.015 (0.276-3.73)	
s (n=21)	11	52.4 (32.4-71.7)				Ver (n#71)	4.93	3.07.11.00		0.777 (0.550 2.1 m)	0.707	Yes (n=21)	8.63	5.03.NF	T		
g metastases						Lung metaclases	1000	0101 10100				Lung melastases					
a (n=23)	13	56.5 (36.8-74.4)	1.000		1.13 (0.4-3.21)	No (n=23)	4 93	3.40.8.17		0 789 (0 23.2 206)	0.706	No (n=73)	8.63	5.03.NF		 0.903 (0.198-4.124 	•
s (n=1)	2	50.0 (15.0-85.0)				Yes (mml)	7 22	310-NE		0.100 (0.2002.100)	0.100	Yes (n 4)	12.53	3.73.NE		0.000 (0.000 0.00	
uph node metastases						Temph node meteoreras	1.22	5.10-142				Lymph node metastarae	(and of				
lo (n=11)	7	63.6 (35.4-84.8)	0.696	+	1.27 (0.66-2.47)	No (n=11)	7.03	3.53.NF	- I -	2.03670.805-5.150	0.133	No.(n.11)	12.53	6.67-NE		- 1 723 (0 575-5 16)	į
es (n-16)	8	50.0 (2.08-72.0)				Ver (m=16)	4.20	2 67.7 33			0.100	Yes (n=16)	5.23	4.6-NF			
istatic sites						Matactatia citer	1.20	2.07-1.10				Metastatic sites					
n=12)	9	75.0 (46.8-91.1)		1		Areastade sites	6.70	2.62 N.F				L (n=12)	NP	1.67 NE			
n=12)	5	41.7 (19.3-68.1)	0.225	∔ ∎	1.8 (0.85-3.79)	1 (n=12)	6.07	3.33-INE		2.297 (1.061-4.975)	0.035	2 (n=12)	14.12	142.54		2.327 (0.993-5.45	9
n=3)	1	33.3 (6.2-79.2)			2.25 (0.44-11.52)	2 (11 12)	3.02	1.83-8.17				2 (u=12) 2 (u=2)	4 72	2.72 NE			
ment cycles						5 (u=5)	2.91	2.40-tNE				3 (0.3)	4.73	3,72-001			
(n-11)	6	54.5 (28.0-78.7)	1.000		0.97 (0.49-1.94)	rieannient cycles	2.07	1 02 1 22		0.252 (0.142.0.873)	0.024	riconnell cycles	6.22	1.42 NT		0.505 (0.202 0.20	i
(n 16)	9	56.3 (33.2-76.9)		T		~+ (n-11)	3.07	4.03 NE		0.555 (0.143-0.872)	0.024	>+(n-11) >d/m=16)	NP	\$ 50 NE		0.393 (0.398-0.89	l
patients (n=27)	15	56.7 (37.3-72.4)	100		-	≥1 (d=10)	6.00	1.95-NE				 (n=10) All anti-arts (n=27) 	74	o.nHVE			
•						An patients (n=27)	D.167	3.4-8.17			867	An patients (n=27)				-	

Figure S1: Multivariate analysis of the correlation between different variables and ORR (A), median PFS (B) and median OS (C).

Sample	MSI	TMB	TNB	Fitness	Heterogeneity	Group
Pt19	2.13	2.85	1.39	-15.789	NA	Respond
Pt30	1.82	2.96	1.12	-16.6964	0.2	Respond
Pt13	0.1	1.33	0.65	-4.37534	0.84	NonRespond
Pt4	2.67	4.65	2.03	-8.96791	0	Respond
Pt17	0.74	4.5	1.5	-14.869	0.16	NonRespond
Pt27	2.76	6.83	4.07	-7.33157	0.13	NA
Pt25	1.61	2.56	1.37	-2.16677	0.32	NonRespond
Pt8	0.7	3.24	1.36	-3.42382	NA	NonRespond
Pt24	0.71	0.94	0.25	-1.7125	NA	NonRespond
Pt10	3.12	0.87	0.52	-0.47016	0.28	NA
Pt6	0.71	1.91	0.5	-2.01753	0.47	NonRespond
Pt16	2.11	1.87	0.87	-11.7561	0.98	NA
Pt20	2.07	1.46	0.94	-6.9884	0.82	NonRespond
Pt31	1.19	3.37	1.63	-7.1236	NA	Respond
Pt28	1.43	1.63	0.53	-14.8748	0.25	Respond
Pt14	2.11	6.28	2.24	-1.47346	0.97	Respond
Pt7	2.82	4.46	2.26	-1.97912	0.3	NonRespond
Pt23	1.39	1.39	0.97	-13.5947	NA	Respond
Pt18	1.29	1.3	0.68	-5.94804	0.4	NonRespond
Pt2	2.1	2.94	1.23	-2.39602	0.12	Respond

Figure S2: Data of whole-exome sequencing.



Figure S3: Analysis of the association between clinical antitumor activity and the activation of peripheral T cells.

* : $P \le 0.05$. * * : $P \le 0.01$. R = responder. NR = non-responder.



Figure S4: Analysis of the association between clinical antitumor activity and the concentration of serum cytokines and chemokines

* : $P \le 0.05$. * * : $P \le 0.01$. T = total. R = responder. NR = non-responder.



Figure S5: A. Kaplan-Meier curves of progression free survival of patients with high TMB and other levels of TMB. B. Kaplan-Meier curves of overall survival of patients with high TMB and other levels of TMB. C. Kaplan-Meier curves of progression free survival of patients with high fitness and other levels of fitness. D. Kaplan-Meier curves of overall survival of patients with high fitness and other levels of fitness.



Figure S6: Analysis of correlation between serum IL-17a (A), IL-23 (B), TNF-a (C) and Granzyme B (D)and progression free survival and overall survival.

Figure S7

Patient 1 with SD





4-cycle after treatment

Baseline

Patient 4 with CR



Baseline



4-cycle after treatment

PET/CT confirmation







Baseline

2-cycle after treatment

Patient 5 with PR



Baseline



2-cycle after treatment

7

Feng K, et al. J Immunother Cancer 2020; 8:e000367. doi: 10.1136/jitc-2019-000367

Patient 6 with SD





Baseline

6-cycle after treatment

Patient 8 with PD



Baseline



2-cycle after treatment

Patient 11 with SD











4-cycle after treatment

2-cycle after treatment

Baseline

Patient 9 with PR



Baseline









Baseline Patient 13 with SD





2-cycle after treatment

Baseline

4-cycle after treatment

Patient 15 with PR



Baseline

Patient 18 with SD



6-cycle after treatment

Baseline PET/CT Baseline Patient 14 with CR







6-cycle after treatment PET/CT confirmation

Baseline

6-cycle after treatment

PET/CT confirmation

Patient 17 with SD





2-cycle after treatment

Patient 19 with CR

Baseline







Baseline Patient 20 with PD





2-cycle after treatment

2-cycle after treatment

Patient 22 with CR



Baseline

Patient 24 with SD







Baseline

Patient 23 with PR

Baseline PET/CT

Patient 21 with SD

Baseline

Baseline



2-cycle after treatment

Patient 25 with SD

10









6-cycle after treatment



6-cycle after treatment











Baseline
Patient 26 with PR



Baseline

2-cycle after treatment

2-cycle after treatment

Patient 30 with PR



Baseline



2-cycle after treatment

Patient 32 with PR





Baseline
Patient 28 with PR





2-cycle after treatment

Baseline

2-cycle after treatment

Patient 31 with PR



Baseline



2-cycle after treatment

Baseline 2-cycle after treatment