

Table SI. Post-lenvatinib therapy.

Treatment	8-week RDI <60% group patient, n=37	8-week RDI ≥60% group patient, n=29
Atezolizumab plus bevacizumab, n (%)	7 (18.9)	8 (27.6)
Ramucirumab, n (%)	5 (13.5)	3 (10.3)
Sorafenib, n (%)	2 (5.4)	5 (17.2)
Radiotherapy, n (%)	4 (10.8)	2 (6.9)
HAIC, n (%)	2 (5.4)	4 (13.8)
Cabozantinib, n (%)	2 (5.4)	0 (0)
RFA, n (%)	1 (2.7)	0 (0)
Regorafenib, n (%)	1 (2.7)	0 (0)

RDI, relative dose intensity; HAIC, Hepatic arterial infusion chemotherapy; RFA, Radiofrequency ablation.

Table SII. The details of TACE techniques.

A, RDI \geq60%				
Patient Number	TACE techniques	Amount of chemotherapy	Embolic agent	Super-selective cTACE
10	DEB-TACE	Epirubicin 43.75 mg	DEB (100-300 μ m)	No
16	cTACE	Epirubicin 40 mg in lipiodol 3 ml	Gelpart [®]	No
32	DEB-TACE	Epirubicin 14 mg	DEB (100-300 μ m)	No
38	DEB-TACE	Epirubicin 59.5 mg	DEB (100-300 μ m)	No
47	DEB-TACE	Epirubicin 70 mg	DEB (100-300 μ m) with Embosphere [®] (700-900 μ m)	No
55	cTACE	Epirubicin 40 mg in lipiodol 10 ml	Gelpart [®]	No
B, RDI <60%				
Patient Number	TACE techniques	Amount of chemotherapy	Embolic agent	Super-selective cTACE
8	DEB-TACE	Epirubicin 17.5 mg	DEB (100-300 μ m)	No
11	cTACE (IA-call [®])	Cisplatin fine powder 100 mg	Gelpart [®]	Yes
24	DEB-TACE	Epirubicin 35 mg	DEB (100-300 μ m) with Embosphere [®] (700-900 μ m)	No
26	cTACE	Epirubicin 40 mg in lipiodol 3 ml	Gelpart [®]	No
27	cTACE	Epirubicin 40 mg in lipiodol 2 ml	Gelpart [®]	Yes
58	DEB-TACE	Epirubicin 70 mg	DEB (100-300 μ m) with Embosphere [®] (700-900 μ m)	No
68	cTACE (IA-call [®])	Cisplatin fine powder 50 mg	-	No

TACE, transarterial chemoembolization; DEB, drug-eluting beads; cTACE, conventional transarterial chemoembolization.

Table SIII. AEs related to lenvatinib therapy.

AE	Any grade, n (%)		Grade \geq 3, n (%)	
	RDI <60%, n=37	RDI \geq 60%, n=29	RDI <60%, n=37	RDI \geq 60%, n=29
Total AEs	29 (78.4)	19 (65.5)	13 (35.1)	6 (20.7)
Fatigue	14 (37.8)	10 (34.5)	2 (5.4)	2 (6.9)
Thrombocytopenia	6 (16.2)	6 (20.7)	2 (5.4)	1 (3.4)
Hand-foot-skin reaction	6 (16.2)	3 (10.3)	2 (5.4)	1 (3.4)
Elevated aspartate aminotransferase	5 (13.5)	2 (6.9)	4 (10.8)	0 (0.0)
Diarrhea	1 (2.7)	3 (10.3)	0 (0.0)	1 (3.4)
Decreased appetite	4 (10.8)	0 (0.0)	0 (0.0)	0 (0.0)
Hypertension	2 (5.4)	2 (6.9)	0 (0.0)	0 (0.0)
Proteinuria	3 (8.1)	1 (3.4)	0 (0.0)	1 (3.4)
Hyperbilirubinemia	3 (8.1)	1 (3.4)	1 (2.7)	0 (0.0)

AEs, adverse events.

Table SIV. Changes in liver function before and after lenvatinib treatment among the 8-week RDI $\geq 60\%$ (A) and $< 60\%$ (B) group patients.

A, RDI $\geq 60\%$ group				
Variable	8-week RDI $\geq 60\%$ group patients, n=29			P-value
	Before LEN	After 8W-LEN	Mean difference value	
Albumin, g/dl	3.64	3.57	-0.07	0.0758
Total bilirubin, g/dl	0.86	1.05	0.19	0.9934
Prothrombin time, %	88.39	86.60	-1.79	0.2392
AFP, ng/ml	168.23	133.96	-34.28	0.0090
DCP, mAU/ml	634.41	932.07	297.66	0.9751
Child-Pugh score	5.62	5.62	0.00	0.6520
ALBI score	-2.343	-2.236	0.107	0.9650
B, RDI $< 60\%$ group				
Variable	8-week RDI $< 60\%$ group patients, n=37			P-value
	Before LEN	After 8W-LEN	Mean difference value	
Albumin, g/dl	3.30	3.10	-0.20	0.0023
Total bilirubin, g/dl	1.20	1.37	0.17	0.8302
Prothrombin time, %	84.18	82.79	-1.39	0.3951
AFP, ng/ml	20,093.20	3,000.24	-17,092.26	0.5725
DCP, mAU/ml	15,622.30	11,712.90	-3,909.40	0.6926
Child-Pugh score	6.54	6.73	0.19	0.6938
ALBI score	-1.974	-1.780	0.194	0.9965

RDI, relative dose intensity; AFP, α -fetoprotein; DCP, des- γ -carboxyprothrombin; ALBI, albumin-bilirubin; LEN, lenvatinib; 8W, 8 weeks.

Table SV. Changes in liver function before and after LEN-TACE treatment among the 8-week RDI $\geq 60\%$ (A) and $< 60\%$ (B) group patients.

A, RDI $\geq 60\%$ group				
Variable	8-week RDI $\geq 60\%$ group patients, n=6			P-value
	Before TACE	After 4W-TACE	Mean difference value	
Albumin, g/dl	3.37	3.08	-0.29	0.1250
Total bilirubin, g/dl	0.97	0.92	-0.05	0.3125
Prothrombin time, %	94.52	85.33	-9.19	0.0469
AFP, ng/ml	312.98	33.93	-279.05	0.4375
DCP, mAU/ml	10,691.00	11,296.30	605.30	0.4375
Child-Pugh score	6.00	6.17	0.17	0.5000
ALBI score	-2.081	-1.867	0.214	0.7969
B, RDI $< 60\%$ group				
Variable	8-week RDI $< 60\%$ group patients, n=7			P-value
	Before TACE	After 4W-TACE	Mean difference value	
Albumin, g/dl	3.50	3.24	-0.26	0.0391
Total bilirubin, g/dl	1.29	1.11	-0.18	0.1094
Prothrombin time, %	91.11	89.14	-1.97	0.2891
AFP, ng/ml	429.40	258.00	-171.40	0.3125
DCP, mAU/ml	146.75	54.25	-92.50	0.0625
Child-Pugh score	5.57	6.14	0.57	0.8750
ALBI score	-2.109	-1.941	0.168	0.9609

RDI, relative dose intensity; AFP, α -fetoprotein; DCP, des- γ -carboxy prothrombin; ALBI, albumin-bilirubin; TACE, transarterial chemoembolization; 4W, 4 weeks.