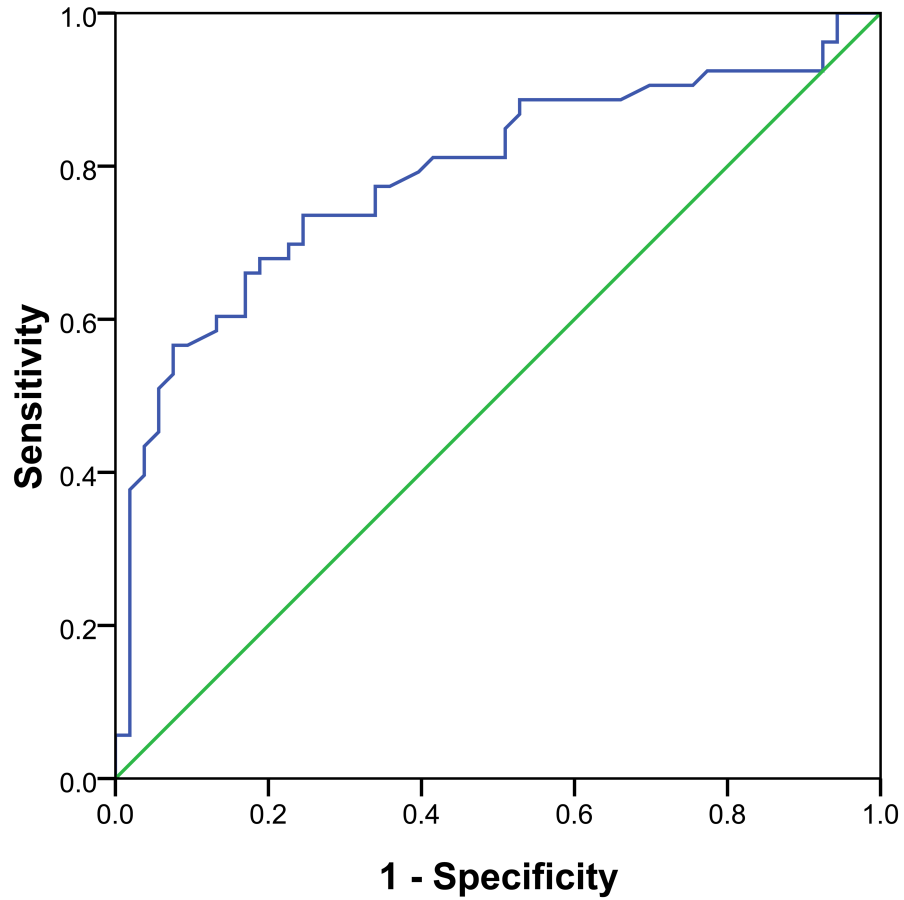
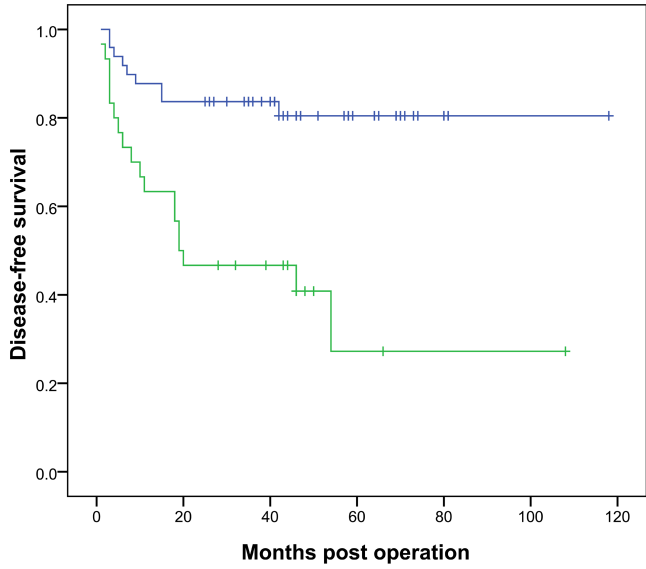


ROC Curve

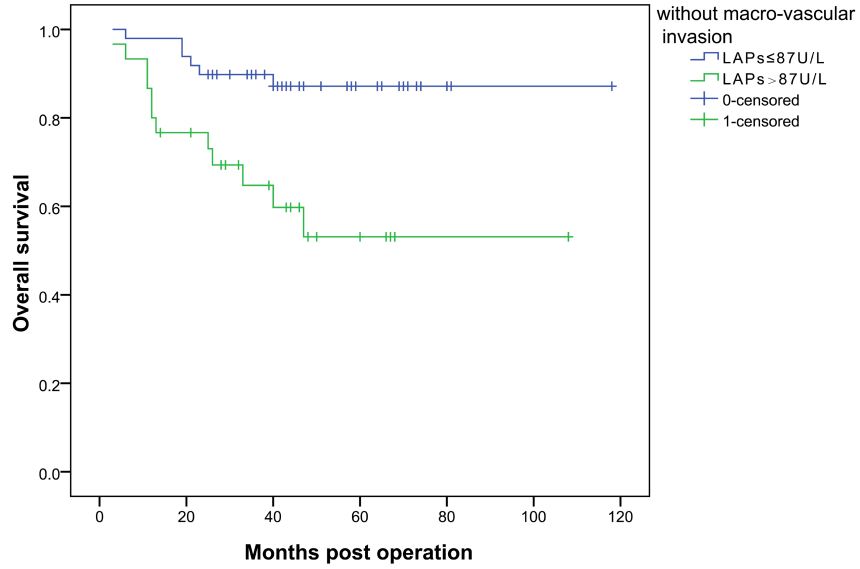


Supplement Figure 1. ROC curve used for determination of cutoff value for serum LAPs.

Survival Functions

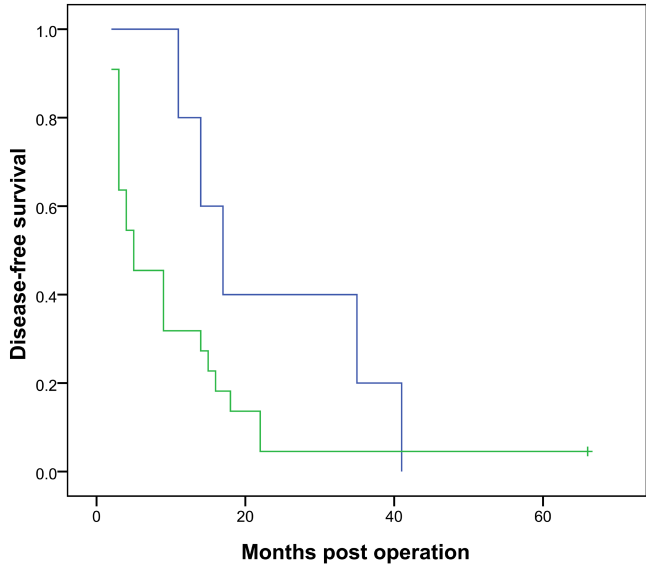


Survival Functions

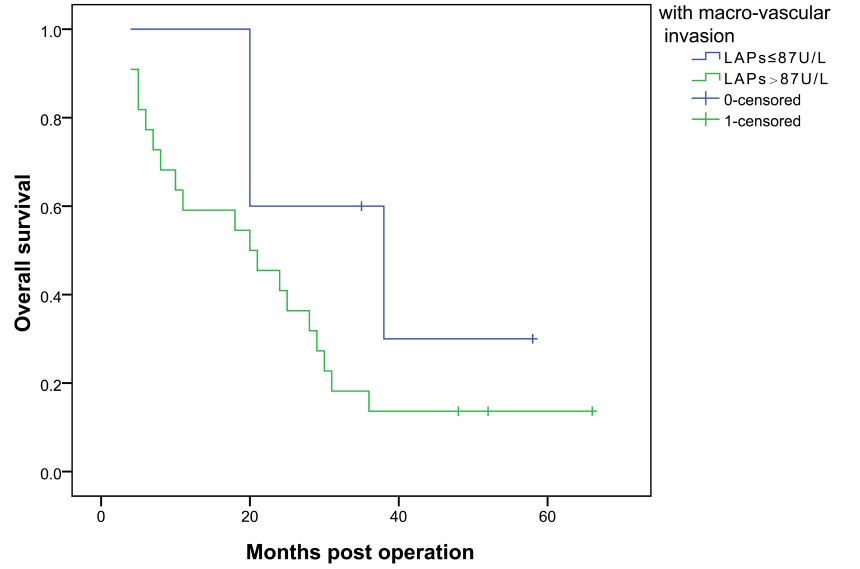


without macro-vascular invasion
— LAPs ≤ 87 U/L
— LAPs > 87 U/L
+ 0-censored
+ 1-censored

Survival Functions



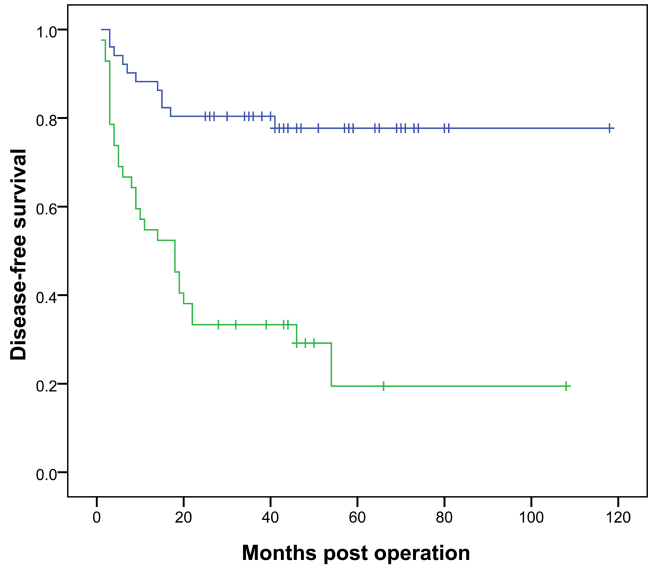
Survival Functions



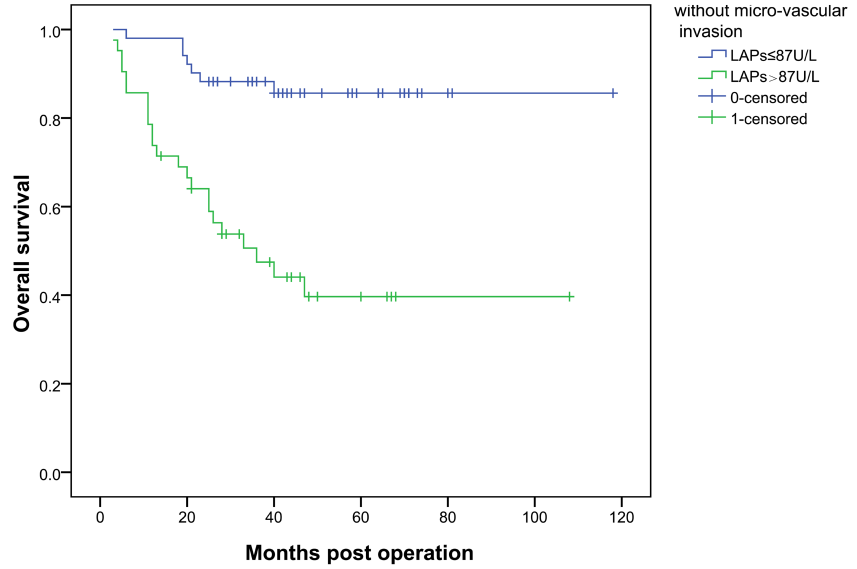
with macro-vascular invasion
— LAPs ≤ 87 U/L
— LAPs > 87 U/L
+ 0-censored
+ 1-censored

Supplement Figure 2. DFS and OS for HCC patients underwent liver transplantation with and without macro-vascular invasion grouped by serum LAPs level.

Survival Functions

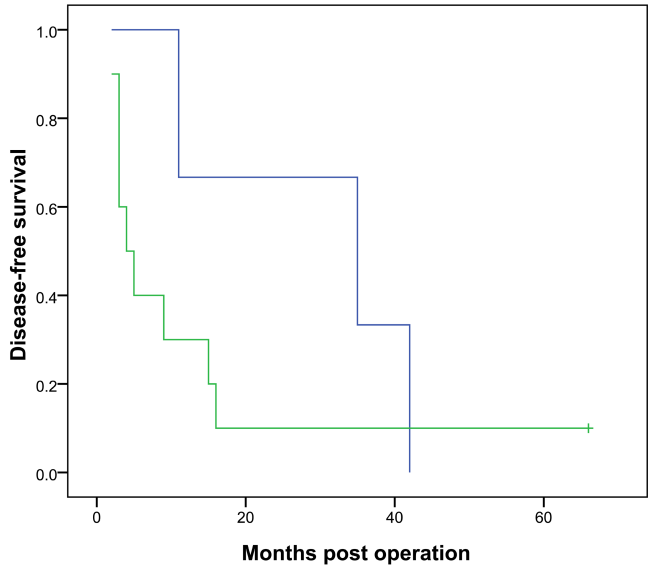


Survival Functions

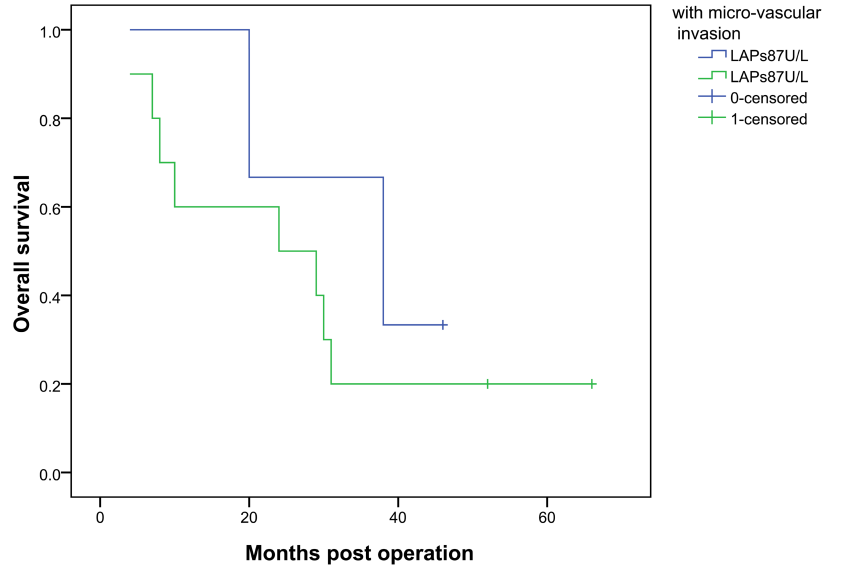


without micro-vascular invasion
— LAPs $\leq 87\text{U/L}$
— LAPs $> 87\text{U/L}$
+ 0-censored
+ 1-censored

Survival Functions



Survival Functions



with micro-vascular invasion
— LAPs $\leq 87\text{U/L}$
— LAPs $> 87\text{U/L}$
+ 0-censored
+ 1-censored

Supplement Figure 3. DFS and OS for HCC patients underwent liver transplantation with and without micro-vascular invasion grouped by serum LAPs level.

Supplementary Table 1. Clinicopathological characteristics of HCC patients underwent liver transplantation enrolled in research.

Category	Subcategory	Cases
Gender	Male	100
	Female	6
HBsAg	Positive	101
	Negative	5
Child-Pugh stage	A	67
	B	29
	C	10
Preoperative therapy	Yes	49
	No	57
Edmonson-Steiner grading	I-II	67
	III-IV	39
Milan criteria	Within	37
	Beyond	69
UCSF criteria	Within	56
	Beyond	50
Hangzhou criteria	Within	66
	Beyond	40

Supplement Table 2. Detailed information for preoperative therapies of HCC patients underwent liver transplantation.

Patient code	Preoperative therapy
63	chemotherapy
13	chemotherapy, radiotherapy
3	liver resection
11	liver resection
25	liver resection
26	liver resection
32	liver resection
58	liver resection
88	liver resection
91	liver resection
10	liver resection, chemotherapy
94	liver resection, chemotherapy, TACE
102	liver resection, MWA, TACE
8	liver resection, RFA
15	liver resection, RFA
2	liver resection, RFA, TACE
5	liver resection, TACE
60	liver resection, TACE
77	liver resection, TACE
18	RFA
23	RFA
27	RFA
29	RFA
31	RFA
33	RFA
34	RFA
41	RFA
57	RFA
65	RFA
69	RFA
74	RFA
6	TACE
28	TACE
36	TACE
44	TACE
46	TACE
47	TACE
56	TACE
59	TACE
64	TACE

70	TACE
99	TACE
101	TACE
103	TACE
104	TACE
106	TACE
35	TACE, RFA
83	TACE, RFA
118	TACE, RFA

MWA, microwave ablation.

Supplementary Table 3. Prognosis of HCC patients underwent liver transplantation

based on different grouping strategy.

Variables	n	DFS				OS			
		1-yr	3-yr	5-yr	P	1-yr	3-yr	5-yrs	P
LAPs(U/L)									
≤ 87	54	87.0%	77.5%	72.1%		87.1%	87.0%	82.3%	
> 87	52	50.0%	28.8%	19.2%	<0.001	72.1%	41.6%	35.8%	<0.001
AFP≤ 400 ng/ml									
LAPs ≤ 87 U/L	44	88.6%	79.2%	72.5%		100%	88.6%	85.8%	
LAPs > 87 U/L	25	72.0%	52.0%	24.7%	0.017	80.0%	62.1%	56.5%	0.009
AFP>400 ng/ml									
LAPs ≤ 87 U/L	27	80.0%	70.0%	70.0%		90.0%	80.0%	68.6%	
LAPs > 87 U/L	10	29.6%	7.4%	3.7%	< 0.001	70.4%	21.5%	17.2%	0.009
The largest tumor size≤5 cm									
LAPs ≤ 87 U/L	41	90.2%	87.8%	80.7%		97.6%	95.1%	95.1%	
LAPs > 87 U/L	20	80.0%	50.0%	50.0%	0.007	95.0%	64.9%	56.8%	0.001
The largest tumor size>5 cm									
LAPs ≤ 87 U/L	13	76.9%	46.2%	46.2%		97.6%	95.1%	95.1%	
LAPs > 87 U/L	32	31.2%	15.6%	7.8%	0.008	95.0%	64.9%	56.8%	0.095
Tumor number ≤ 3									
LAPs ≤ 87 U/L	43	93.0%	83.4%	79.8%		97.7%	90.7%	84.8%	
LAPs > 87 U/L	31	61.3%	45.2%	26.3%	< 0.001	71.0%	60.2%	49.4%	< 0.001
Tumor number > 3									
LAPs ≤ 87 U/L	11	63.6%	54.5%	40.9%		100%	72.7%	72.7%	
LAPs > 87 U/L	21	33.3%	4.8%	4.8%	0.010	74.4%	15.4%	15.4%	0.006

Without macro - vascular invasion									
LAPs ≤ 87 U/L	49	87.8%	83.7%	80.5%		98.0%	89.8%	87.2%	
LAPs > 87 U/L	30	63.3%	46.7%	27.2%	< 0.001	80.0%	64.7%	53.1%	0.002
With macro - vascular invasion									
LAPs ≤ 87 U/L	5	80.0%	20.0%	0%		100%	60.0%	30.0%	
LAPs > 87 U/L	22	31.8%	4.5%	0%	0.136	59.1%	13.6%	0%	0.162
Without micro - vascular invasion									
LAPs ≤ 87 U/L	51	88.2%	80.4%	77.7%		98.0%	80.4%	77.7%	
LAPs > 87 U/L	42	54.8%	33.3%	29.2%	< 0.001	73.8%	47.5%	39.7%	< 0.001
With micro - vascular invasion									
LAPs ≤ 87 U/L	3	66.7%	33.3%	0%		100%	66.7%	33.1%	
LAPs > 87 U/L	10	30.0%	10.0%	10.0%	0.292	60.0%	20.0%	20.0%	0.425
Within Milan criteria					Beyond	≤ 87 U/L	24	> 87 U/L	45
LAPs ≤ 87 U/L	30	96.7%	96.7%	91.3%		75.0%	53.5%	47.5%	
LAPs > 87 U/L	7	71.4%	57.1%	57.1%	0.007	46.7%	24.4%	14.0%	0.010
Within UCSF criteria					Beyond	≤ 87 U/L	15	> 87 U/L	35
LAPs ≤ 87 U/L	39	94.9%	86.8%	82.7%		66.7%	53.3%	44.4%	
LAPs > 87 U/L	17	82.4%	70.6%	70.6%	0.188	34.3%	8.6%	2.9%	0.002
Within Hangzhou criteria					Beyond	≤ 87 U/L	9	> 87 U/L	31
LAPs ≤ 87 U/L	45	88.9%	86.7%	83.2%		77.8%	33.3%	16.7%	
LAPs > 87 U/L	21	76.2%	61.9%	41.3%	0.015	32.3%	6.5%	3.2%	0.034

For patients within and beyond the selection criteria, only the DFS was calculated.