Supplemental material

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Table Supplement 1 Baseline Characteristics

Covariates	Before IPTW-adjustment			
	LT	LR	LA	P value
Number of patients	100	89	94	
Gender (male) (%)	87 (30.74)	68 (24.03)	71 (25.09)	0.069
Age (years)	52.33 (9.33)	55.20 (9.43)	58.79 (9.06)	< 0.001
BMI (kg/m^2)	25.03 (3.55)	24.91 (3.36)	24.33 (3.56)	0.275
Hypertension (%)	13 (4.59)	12 (4.24)	30 (10.60)	0.002
Diabetes mellitus (%)	20 (7.07)	11 (3.89)	19 (6.71)	0.280
Etiology (%)				0.091
HBV	75 (26.50)	72 (25.44)	77 (27.21)	
HCV	14 (4.95)	3 (1.06)	8 (2.83)	
Others	11 (3.89)	14 (4.95)	9 (3.18)	
ln(AFP) (ng/ml)	2.68 (1.92)	3.59 (2.16)	2.95 (1.84)	0.004
MELD score	10.31 (4.17)	8.12 (2.49)	8.93 (2.87)	< 0.001
Child-Pugh score	6.32 (1.43)	5.51 (0.88)	5.97 (1.14)	< 0.001
ALBI score	-2.25 (0.60)	-2.59 (0.58)	-2.36 (0.62)	< 0.001
ln(APRI score)	0.20 (1.03)	-0.41 (1.05)	0.00 (1.00)	< 0.001
Portal hypertension (%)	68 (24.03)	35 (12.37)	85 (30.04)	< 0.001
Ascites (%)	33 (11.66)	12 (4.24)	26 (9.19)	0.005
Cirrhosis (%)	100 (35.34)	68 (24.03)	90 (31.80)	< 0.001
BCLC staging (%)				0.399
0	9 (3.18)	7 (2.47)	4 (1.41)	
A	91 (32.16)	82 (28.98)	90 (31.80)	
Tumor characteristics (%)				0.672
Solitary 0-3 cm	35 (12.37)	29 (10.25)	38 (13.43)	
Multiple 0-3 cm	35 (12.37)	31 (10.95)	25 (8.83)	
Solitary 3-5 cm	30 (10.60)	29 (10.25)	31 (10.95)	
Tumor differentiation (%)				
Well	38 (13.43)	27 (9.54)	8 (2.83)	0.496
Moderate	55 (19.43)	50 (17.67)	10 (3.53)	
Poor	7 (2.47)	12 (4.24)	1 (0.35)	
Missing	0 (0.00)	0 (0.00)	75 (26.50)	
Microvascular Invasion (%)				0.839
Absent	86 (30.39)	75 (26.50)	0 (0.00)	
Present	14 (4.95)	14 (4.95)	0 (0.00)	
Missing	0 (0.00)	0 (0.00)	94 (33.22)	

Continuous variables were summarized by their means and standard deviations, and categorical variables were summarized by counts and

proportions.

LT, liver transplantation; LR, liver resection; LA, local ablation; IPTW, inverse probability of treatment weighting; BMI, body mass index;

HBV, hepatitis B virus; HCV, hepatitis C virus; AFP, α-fetoprotein; MELD, Model for End-stage Liver Disease; ALBI, Albumin-Bilirubin;
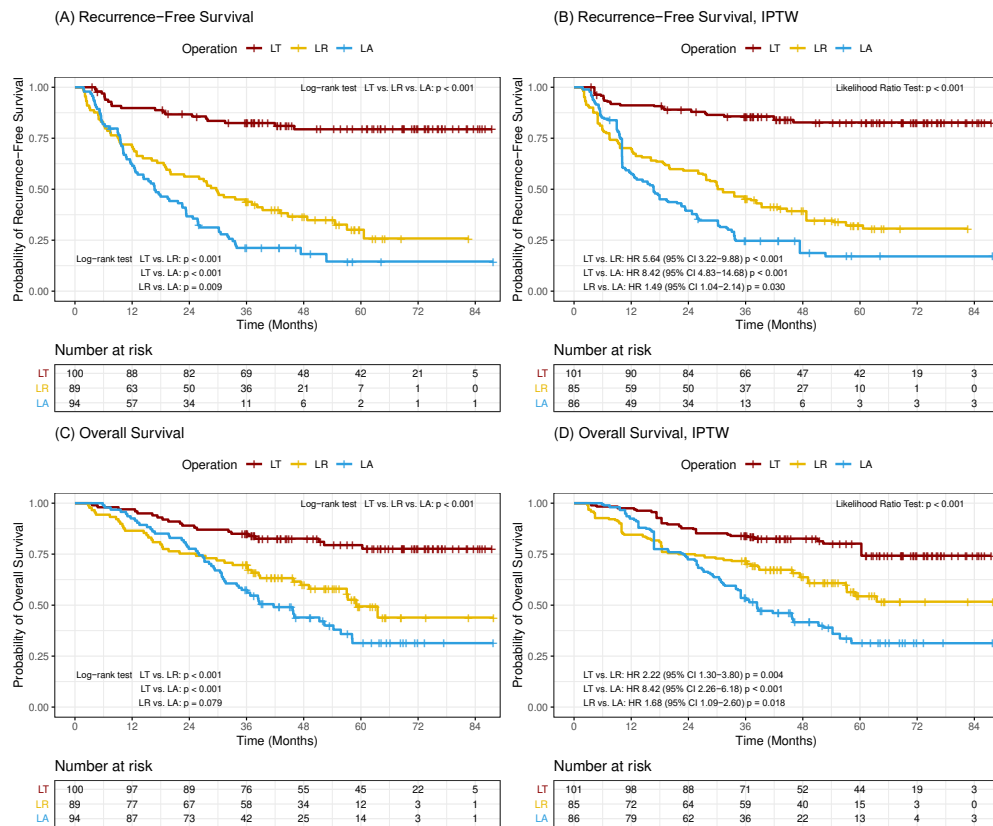
APRI, Aspartate aminotransferase-to-Platelet Ratio Index; BCLC, Barcelona Clinic Liver Cancer.

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Table Supplement 2 Baseline Characteristics after IPTW-adjustment

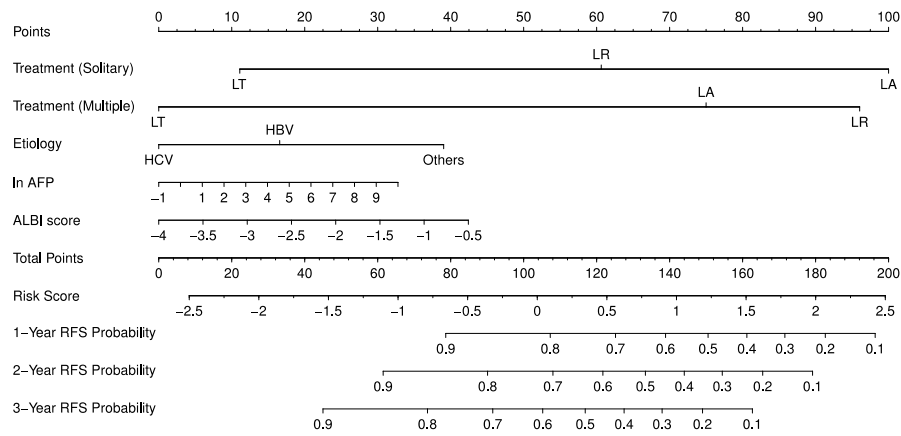| Covariates	After IPTW-adjustment			
	LT	LR	LA	P value
Number of patients	101	85	86	
Gender (male) (%)	82 (30.04)	65 (23.81)	68 (24.91)	0.638
Age (years)	54.93 (9.12)	55.22 (9.45)	55.97 (9.98)	0.743
BMI (kg/m^2)	25.05 (3.62)	24.55 (3.62)	24.69 (3.27)	0.595
Hypertension (%)	18 (6.64)	15 (5.54)	16 (5.90)	1.000
Diabetes mellitus (%)	20 (7.35)	15 (5.51)	17 (6.25)	0.947
In(AFP) (ng/ml)	3.24 (2.35)	3.16 (1.93)	2.65 (1.80)	0.111
MELD score	9.04 (3.62)	8.83 (2.88)	9.01 (2.88)	0.889
Child-Pugh score	6.00 (1.30)	5.80 (1.00)	5.94 (1.16)	0.489
ALBI score	-2.41 (0.55)	-2.41 (0.64)	-2.41 (0.65)	1.000
In(APRI score)	0.02 (0.94)	-0.04 (1.12)	0.02 (1.07)	0.889
Portal hypertension (%)	63 (23.25)	55 (20.30)	63 (23.25)	0.302
Ascites (%)	24 (8.86)	20 (7.38)	23 (8.49)	0.863
Tumor characteristics (%)				0.269
Solitary ≤3 cm	33 (12.18)	33 (12.18)	41 (15.13)	
Multiple ≤3 cm	39 (14.39)	31 (11.44)	23 (8.49)	
Solitary 3-5 cm	29 (10.70)	21 (7.75)	21 (7.75)	

Continuous variables were summarized by their means and standard deviations, and categorical variables were summarized by counts and proportions.

LT, liver transplantation; LR, liver resection; LA, local ablation; IPTW, inverse probability of treatment weighting; BMI, body mass index; AFP, α-fetoprotein; MELD, Model for End-stage Liver Disease; ALBI, Albumin-Bilirubin; APRI, Aspartate aminotransferase-to-Platelet Ratio Index; BCLC, Barcelona Clinic Liver Cancer.
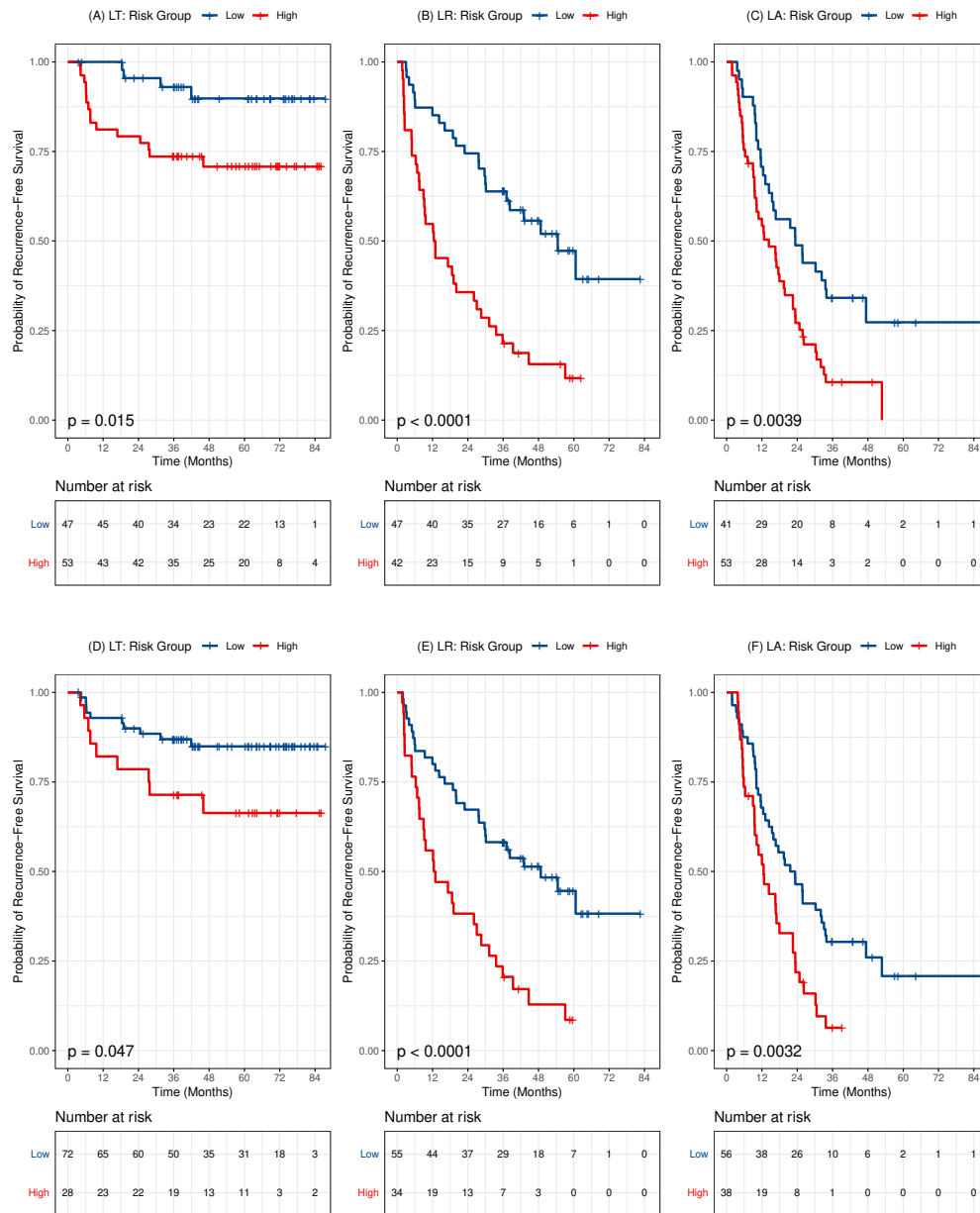
Figure Supplement 1 Comparison of RFS and OS among three treatment groups

Comparison of RFS among the three treatment groups before (A) and after IPTW-adjustment (B). Comparison of OS among the three treatment groups before (C) and after IPTW-adjustment (D).

LT, liver transplantation; LR, liver resection; LA, local ablation; IPTW, inverse probability of treatment weighting; RFS, recurrence-free survival; OS, overall survival; HR, hazard ratio; CI, confidence interval.

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Figure Supplement 2 Nomogram of recurrence prediction based on Model 2
LT, liver transplantation; LR, liver resection; LA, local ablation; HBV, hepatitis B virus; HCV, hepatitis C virus; AFP, α-fetoprotein; ALBI, Albumin-Bilirubin; RFS, recurrence-free survival.

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Figure Supplement 3 Kaplan-Meier curves of recurrence risk stratification for the three treatments

Kaplan-Meier curves of recurrence risk stratification for LT(A), LR(B), and LA(C) based on Model 1. Kaplan-Meier curves of recurrence risk stratification for LT(D), LR(E), and LA(F) based on Model 2.

LT, liver transplantation; LR, liver resection; LA, local ablation.