

**Supplementary Table 1.** Risk factors for HCC recurrence and mortality in all patients by univariate analysis

Variable	HCC recurrence		Mortality	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Female sex	0.778 (0.438–1.381)	0.391	1.234 (0.594–2.562)	0.574
Age	1.007 (0.984–1.030)	0.573	0.992 (0.961–1.024)	0.603
Anatomical resection	0.649 (0.422–0.998)	0.049	1.186 (0.679–2.071)	0.550
Operation extent, major	0.514 (0.305–0.866)	0.012	0.945 (0.538–1.661)	0.845
HCV RNA viremia	0.800 (0.457–1.402)	0.436	0.535 (0.239–1.200)	0.129
ICG-R15	0.996 (0.968–1.024)	0.782	1.011 (0.980–1.042)	0.494
Tumor size	1.012 (0.922–1.111)	0.794	1.106 (1.005–1.218)	0.039
Encapsulation, complete	0.503 (0.265–0.956)	0.036	0.570 (0.289–1.126)	0.106
Microvascular invasion	0.929 (0.594–1.454)	0.748	1.009 (0.569–1.789)	0.975
Free resection margin	0.992 (0.972–1.012)	0.431	0.992 (0.967–1.018)	0.528
Cirrhosis	1.597 (1.006–2.533)	0.047	1.378 (0.759–2.501)	0.292
Laparoscopic liver resection	0.457 (0.235–0.888)	0.021	0.494 (0.193–1.264)	0.141
Operation time	1.000 (0.997–1.002)	0.805	1.004 (1.001–1.007)	0.022
Intraoperative RBC transfusion	2.190 (0.664–7.226)	0.198	3.969 (1.118–14.092)	0.033
Estimated blood loss	1.000 (0.999–1.001)	0.553	1.001 (1.000–1.002)	0.064
Liver stiffness measurement	1.026 (0.975–1.080)	0.321	1.015 (0.968–1.065)	0.533
Hospitalization	0.996 (0.980–1.013)	0.644	1.026 (1.015–1.037)	<0.001
Antiviral therapy	0.522 (0.320–0.850)	0.009	0.226 (0.096–0.531)	0.001
FIB-4 grade				
1	1	0.182	1	0.419
2	1.137 (0.701–1.845)	0.603	1.040 (0.565–1.914)	0.899
3	1.733 (0.965–3.112)	0.066	1.589 (0.760–3.321)	0.218
APRI, >1	1.609 (1.045–2.477)	0.031	1.093 (0.636–1.876)	0.748
ALBI grade				
1	1	0.306	1	0.575
2	1.349 (0.856–2.124)	0.197	9.737 (0.417–1.302)	0.293
3	0.610 (0.148–2.515)	0.494	-	-
Tumor grade, 3 or 4	1.887 (1.074–3.315)	0.027	1.441 (0.765–2.717)	0.258
$\alpha$ -FP, >40 ng/mL	1.946 (1.212–3.123)	0.006	1.987 (1.079–3.660)	0.027
PIVKA-II, >75 mAU/mL	1.119 (0.653–1.917)	0.682	1.914 (0.910–4.025)	0.087

HCC, hepatocellular carcinoma; OR, odds ratio; CI, confidence interval; ICG-R15, indocyanine green retention rate at 15 minutes; FIB-4, fibrosis-4; APRI, AST-to-platelet ratio index; ALBI, albumin-bilirubin; PIVKA-II, protein induced by vitamin K absence II.