

Supplementary Table 1 Formulas of inflammation indexes

Index	Formula
NLR	Neutrophil / lymphocyte
PLR	Platelet / lymphocyte
LMR	Lymphocyte / monocyte
GPR	GGT / platelet ($10^9/L$)
PNI	Albumin (g/L) + $5 \times$ lymphocyte ($10^9/L$)
SII	Platelet ($10^9/L$) $\times$ neutrophil / lymphocyte
SIRI	Neutrophil $\times$ monocyte / lymphocyte
APRI	AST (U/L) / platelet ($10^9/L$)
ANRI	AST (U/L) / neutrophil ($10^9/L$)
ALRI	AST (U/L) / lymphocyte ($10^9/L$)
ALBI	$0.66 \times \log_{10}(\text{bilirubin}) (\mu\text{mol/L}) - 0.085 \times \text{albumin (g/L)}$
FIB-4	$[\text{Age (yr)} \times \text{AST (U/L)}] / [\text{platelet (} 10^9/L) \times \text{ALT(U/L)}^{1/2}]$
S-index	$1000 \times \text{GGT} / [\text{platelet (} 10^9/L) \times \text{albumin (g/L)}^2]$
AAR	AST (U/L) / ALT (U/L)

NLR: neutrophil to lymphocyte ratio; PLR: platelet to lymphocyte ratio; LMR: lymphocyte to monocyte ratio; GPR: gamma-glutamyl transpeptidase to platelet ratio; PNI: prognostic nutritional index; SII: systemic immune-inflammation index; SIRI: systemic inflammation response index; APRI: aspartate aminotransferase to platelet ratio index; ANRI: aspartate aminotransferase to neutrophil ratio index; ALRI: aspartate aminotransferase to lymphocyte ratio index; ALBI: albumin-bilirubin index; FIB-4: fibrosis index based on four factors; AAR: aspartate aminotransferase to alanine aminotransferase ratio.

Supplementary Table 2 Distribution and defined cutoff values of inflammation indexes

Parameters	Median (IQR)	Cutoff value	High/low, count (%)
NLR	1.76 (1.33-2.31)	1.71	341 (52.5)/309 (47.5)

PLR	88.07 (66.8-114.5)	71.66	447 (68.8)/203 (31.2)
LMR	3.97 (3.00-5.16)	4.83	198 (30.5)/452 (69.5)
GPR	0.31 (0.18-0.57)	0.31	329 (50.6)/321 (49.4)
PNI	49.53 (45.55-53.08)	49.65	319 (49.1)/331 (50.9)
SII	252.72 (160.24-377.08)	323.51	234 (36.0)/416 (64.0)
SIRI	0.73 (0.50-1.10)	0.99	199 (30.6)/451 (69.4)
APRI	0.22 (0.15-0.35)	0.27	239 (36.8)/411 (63.2)
ANRI	10.64 (7.73-16.81)	12.81	263 (40.5)/387 (59.5)
ALRI	19.22 (13.26-28.60)	22.16	252 (38.8)/398 (61.2)
ALBI	-2.73 (-2.96--2.47)	-2.58	215 (33.1)/435 (66.9)
FIB-4	1.92 (1.27-3.10)	1.67	383 (58.9)/267 (41.1)
S-index	0.19 (0.10-0.37)	0.14	405 (62.3)/245 (37.7)
AAR	0.96 (0.76-1.20)	0.87	391 (60.2)/259 (39.8)

NLR: neutrophil to lymphocyte ratio; PLR: platelet to lymphocyte ratio; LMR: lymphocyte to monocyte ratio; GPR: gamma-glutamyl transpeptidase to platelet ratio; PNI: prognostic nutritional index; SII: systemic immune-inflammation index; SIRI: systemic inflammation response index; APRI: aspartate aminotransferase to platelet ratio index; ANRI: aspartate aminotransferase to neutrophil ratio index; ALRI: aspartate aminotransferase to lymphocyte ratio index; ALBI: albumin-bilirubin index; FIB-4: fibrosis index based on four factors; AAR: aspartate aminotransferase to alanine aminotransferase ratio.

Supplementary Table 3 Univariate Cox analyses of inflammation indexes for early recurrence of hepatitis B virus-related hepatocellular carcinoma $\leq$ 5cm in the training cohort

Parameters	Early recurrence		
	B	HR (95%CI)	P
NLR (>1.71)	-0.259	0.772 (0.551-1.081)	0.132
PLR (>71.66)	-0.307	0.736 (0.517-1.048)	0.089
LMR (>4.83)	-0.166	0.847 (0.589-1.219)	0.371

GPR (>0.31)	0.513	1.670 (1.191-2.341)	0.003
PNI (≤49.65)	0.506	1.658 (1.181-2.328)	0.003
SII (≤323.51)	0.234	1.264 (0.882-1.811)	0.202
SIRI (>0.99)	0.054	1.056 (0.728-1.531)	0.775
APRI (>0.27)	0.372	1.450 (1.026-2.050)	0.035
ANRI (>12.81)	0.381	1.464 (1.043-2.054)	0.027
ALRI (>22.16)	0.495	1.641 (1.166-2.309)	0.005
ALBI (>-2.58)	0.481	1.618 (1.146-2.284)	0.006
FIB-4 (>1.67)	0.115	1.121 (0.798-1.576)	0.509
S-index (>0.14)	0.497	1.645 (1.148-2.356)	0.007
AAR (>0.87)	0.293	1.341 (0.938-1.916)	0.108

NLR: neutrophil to lymphocyte ratio; PLR: platelet to lymphocyte ratio; LMR: lymphocyte to monocyte ratio; GPR: gamma-glutamyl transpeptidase to platelet ratio; PNI: prognostic nutritional index; SII: systemic immune-inflammation index; SIRI: systemic inflammation response index; APRI: aspartate aminotransferase to platelet ratio index; ANRI: aspartate aminotransferase to neutrophil ratio index; ALRI: aspartate aminotransferase to lymphocyte ratio index; ALBI: albumin-bilirubin index; FIB-4: fibrosis index based on four factors; AAR: aspartate aminotransferase to alanine aminotransferase ratio; HBV: hepatitis B virus; HCC: hepatocellular carcinoma; HR: hazard ratio; CI: confidence interval.

Supplementary Table 4 Variance inflation factors of incorporated variables in training and validation cohorts

Variable	VIF	
	Training cohort	Validation cohort
GPR	1.234	1.227
PNI	1.587	1.742
ALBI	1.303	1.519
ALRI	1.453	1.603

VIF: variance inflation factor; GPR: gamma-glutamyl transpeptidase to platelet ratio; PNI: prognostic nutritional index; ALRI: aspartate aminotransferase to lymphocyte ratio index; ALBI: albumin-bilirubin index.