

Supplementary material

The formulas of prognostic scores used in this study.

GLOBE score = $0.044378 \times \text{age at start of UDCA} + 0.93982 \times \ln(\text{Tbil1 year UDCA/ULN}) + 0.335648 \times \ln(\text{ALP1 year UDCA/ULN}) - 2.266708 \times \text{ALB1 year UDCA/LLN} - 0.002581 \times \text{PLT1 year UDCA} + 1.216865$ [12]

UK-PBC score = $1 - 0.982 \times \exp(0.0287854 \times (\text{ALP1 year UDCA/ULN} - 1.722136304)) - 0.0422873 \times ((\text{AST1 year UDCA/ULN}/10)^{-1}) - 8.675729006 + 1.4199 \times (\ln(\text{Tbil1 year UDCA/ULN}/10) + 2.709607778) - 1.960303 \times (\text{ALBat start of UDCA/LLN} - 1.17673001) - 0.4161954 \times (\text{PLTat start of UDCA/LLN} - 1.873564875)$ [28]

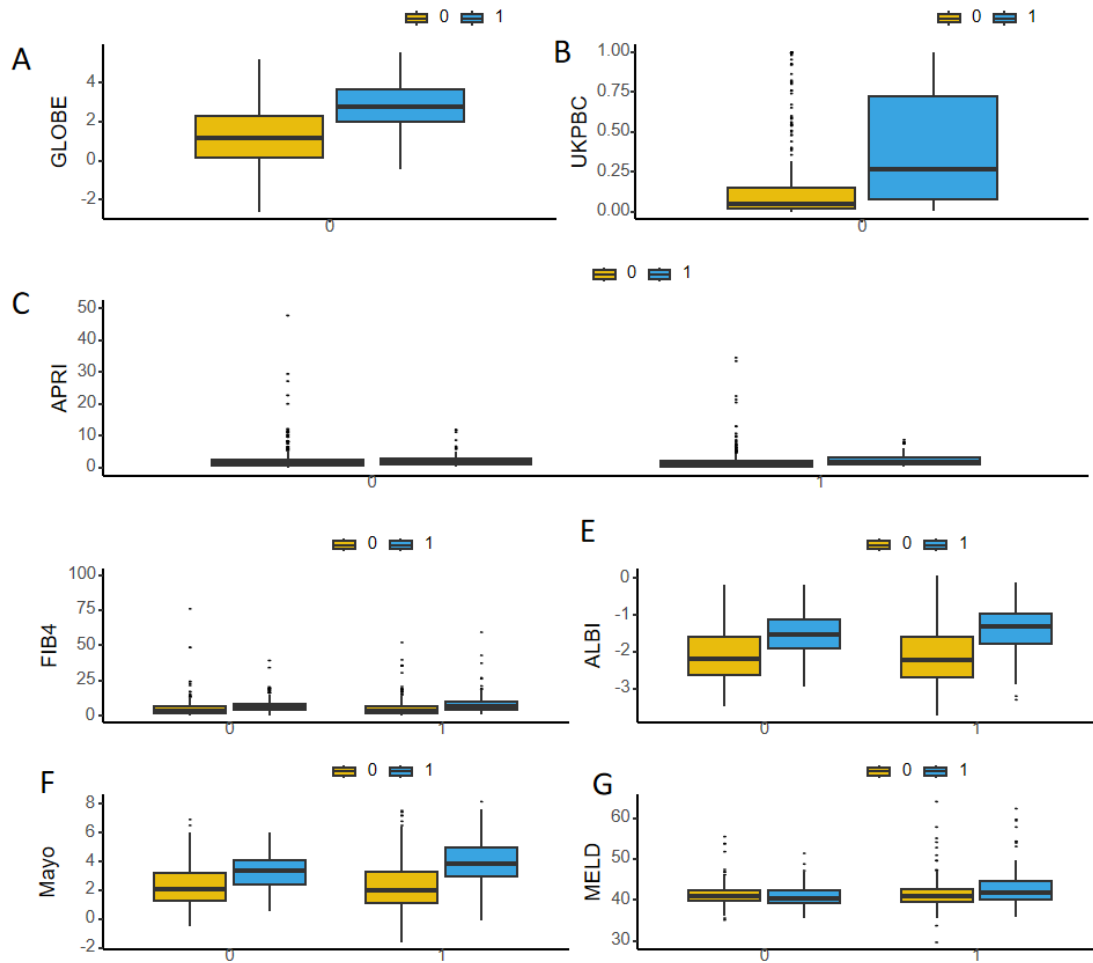
Mayo score = $0.039 \times \text{age} + 0.871 \times \ln(\text{Tbil(mg/dL)}) - 2.53 \times \ln(\text{ALB(mg/dL)}) + 2.38 \times \ln(\text{PT(sec)}) + 0.859 \times \text{ascites(have=1, none=0)}$ [8]

APRI score = $((\text{AST/ULN}) \times 100) / \text{PLT}$ [11]

FIB-4 score = $(\text{age} \times \text{AST}) / (\text{PLT} \times \text{ALT} / 2)$ [11]

ALBI score = $(\log_{10} \text{Tbi1} \times 0.66) + (\text{ALB} \times (-0.085))$ [14]

Notes: The superscript number after the formula is the reference source which is corresponding with the main text.



Supplementary Figure 1 Boxplots comparing the risk score values for patients that did and did not experience a clinical endpoint (alive is "0", death or liver transplantation(LT) is "1") based on predictive score values at baseline or after UDCA treatment for 1 year.

Supplementary Table 1 Statistical differences in score values when using different scores to predict liver-related death or LT at baseline and following UDCA treatment for 1 year

Scores X	C-statistic	SE	Scores Y	C-statistic	SE	Z	P value
APRI	0.592	0.03	APRI-1	0.347	0.03	6.37	<0.001
FIB4	0.648	0.03	FIB4-1	0.68	0.03	-0.8	0.42
ALBI	0.705	0.03	ALBI-1	0.725	0.03	-0.5	0.6
Mayo	0.702	0.03	Mayo-1	0.74	0.03	-1.1	0.29
ALBI	0.705	0.03	APRI	0.592	0.03	3	0
ALBI	0.705	0.03	FIB4	0.648	0.03	1.5	0.13
ALBI	0.705	0.03	Mayo	0.702	0.03	0.09	0.93
GIOBE-1	0.731	0.03	UK-PBC-1	0.727	0.03	0.11	0.91
GIOBE-1	0.731	0.03	APRI-1	0.347	0.03	10.5	<0.001
GIOBE-1	0.731	0.03	FIB4-1	0.68	0.03	1.38	0.17
GIOBE-1	0.731	0.03	ALBI-1	0.725	0.03	0.16	0.87
GIOBE-1	0.731	0.03	Mayo-1	0.74	0.03	-0.3	0.8

UKPBC-	0.727	0.0	APRI-1	0.347	0.0	10.5	<0.001
1		3			3		
UKPBC-	0.727	0.0	FIB4-1	0.68	0.0	1.29	0.2
1		3			3		
UKPBC-	0.727	0.0	ALBI-1	0.725	0.0	0.05	0.96
1		3			3		
UKPBC-	0.727	0.0	Mayo-1	0.74	0.0	-0.4	0.71
1		3			3		

(Note: scores marked with a -1 indicate the scores after UDCA treatment for 1 year)

Supplementary Table 2 Cox regression analyses and the combined discriminatory performance of prognostic scores calculated at 1 year following UDCA treatment

Multivariable analyses					
Prognostic score	HR	95%CI	P	C-statistic	95%CI
GIOBE	1.8	1.39-2.33	<0.001	0.73	0.68-0.78
UKPBC	0.77	0.28-2.16	0.622		
GIOBE	1.77	1.52-2.06	<0.001	0.73	0.68-0.78
APRI	0.94	0.87-1.03	0.181		
GIOBE	1.72	1.48-1.99	<0.001	0.73	0.68-0.78
FIB4	1	0.98-1.01	0.582		
GIOBE	1.53	1.10-2.12	0.0104	0.73	0.68-0.78
ALBI	1.25	0.68-2.28	0.4703		
GIOBE	1.53	1.04-2.25	0.0292	0.73	0.68-0.78
Mayo	1.1	0.80-1.50	0.5655		
UKPBC	7.44	4.06-13.66	<0.001	0.72	0.67-0.78
APRI	0.95	0.87-1.03	0.193		
UKPBC	6.2	3.53-10.93	<0.001	0.72	0.67-0.77
FIB4	1	0.99-1.01	0.715		
UKPBC	1.46	0.60-3.55	0.399	0.73	0.67-0.78
ALBI	2.23	1.49-3.35	<0.001		
UKPBC	1.07	0.38-2.98	0.904	0.74	0.69-0.79
Mayo	1.49	1.23-1.81	<0.001		
APRI	0.98	0.944-1.03	0.48	0.64	0.57-0.70
FIB4	1.01	1.00-1.02	0.099		
APRI	0.97	0.91-1.04	0.402	0.73	0.68-0.78
ALBI	2.62	2.00-3.43	<0.001		
APRI	0.96	0.89-1.03	0.26	0.74	0.69-0.79

Mayo	1.53	1.37-1.72	<0.001		
FIB4	1	0.99-1.01	0.804	0.73	0.67-0.78
ALBI	2.56	1.96-3.34	<0.001		
FIB4	1	0.98-1.01	0.628	0.74	0.69-0.79
Mayo	1.51	1.35-1.69	<0.001		
ALBI	1.49	0.79-2.82	0.2209	0.74	0.69-0.79
Mayo	1.29	0.98-1.69	0.0724		
