

Supplementary Table 1. Other clinical characteristics of patients with hepatobiliary cancer

(N = 187)

Variable	ICI cohort 1 (N=43)	ICI Cohort2 (N=108)	Non-ICI Cohort (N=36)
Etiology — no. (%)			
Hepatitis B	17(39.5)	46(42.6)	10(27.8)
Hepatitis C	0(0)	3(2.8)	2(5.6)
NAFLD	2(4.7)	6(5.6)	1(2.8)
AFLD	3(7.0)	4(3.7)	1(2.8)
Alcohol use	3(7.0)	8(7.4)	1(2.8)
Others	24(55.8)	53(49.0)	23(63.8)
Biliary stone — no. (%)			
Y	9(20.9)	27(25.0)	8(22.2)
N	32(74.4)	78(72.2)	24(66.7)
NA	2(4.7)	3(2.8)	4(11.1)
Macrovascular Invasion — no. (%)			
Y	6(14.0)	26(24.1)	3(8.3)
N	37(86.0)	82(75.9)	33(91.7)
TNM Stage — no. (%)			
I	0 (37.2)	2 (1.9)	4(11.1)
II	6(14.0)	9(8.3)	5(13.9)
III	10(23.3)	32(29.6)	10(27.8)
IV	27(62.8)	65(60.2)	17(47.2)
Distant metastasis — no. (%)			
Y	23(53.5)	50(46.3)	15(41.7)
N	20(46.5)	58(53.7)	21(58.3)
ALBI score — no. (%)			
1	30(69.8)	72(66.7)	21(58.3)
2	13(30.2)	33(30.6)	12(33.3)
3	0(0.0)	3(2.8)	3(8.3)
AFP>400ng/ml — no. (%)			
Y	3(7.0)	16(14.8)	4(11.1)
N	39(90.7)	88(81.5)	32(88.9)
NA	1(2.3)	4(3.7)	0(0.0)
CA19-9>100U/L — no. (%)			
Y	18(41.9)	42(38.9)	11(30.6)
N	24(55.8)	63(58.3)	25(69.4)
NA	1(2.3)	3(2.8)	0(0.0)
Maximum tumor diameter — no. (%)			
>=5 cm	25(58.1)	54(50.0)	11(30.6)

Variable	ICI cohort 1 (N=43)	ICI Cohort2 (N=108)	Non-ICI Cohort (N=36)
<5 cm	18(41.9)	54(50.0)	25(69.4)
Histological Grade — no. (%)			
Poorly differentiated (G3/G4)	14(32.6)	40(37.0)	9(25.0)
Moderately or well differentiated (G1/G2)	13(30.2)	34(31.5)	12(33.3)
NA	16(37.2)	34(31.5)	15(41.7)
PD-L1 expression — no. (%)			
TPS >=1%	4(9.3)	15(13.9)	3(8.3)
TPS <1%	22(51.2)	39(36.1)	17(47.2)
NA	17(39.5)	54(50.0)	16(44.4)
Best response rate — no. (%)			
PR	6(14.0)	18(16.7)	3(8.3)
SD	18(41.9)	62(57.4)	14(38.9)
PD	16(37.1)	24(22.2)	3(8.3)
NA	3(7.0)	4(3.7)	16(44.4)
Clinical benefit — no. (%)			
DCB	13(30.2)	54(50.0)	11(30.6)
NCB	30(69.8)	51(47.2)	10(27.8)
NA	0(0.0)	3(2.8)	15(41.7)
PFS — Median (95%CI) month			
PFS-All	4.16(2.84-5.47)	4.13(2.14-6.13)	6.03(3.87-8.17)
PFS-HCC	10.73(1.62-19.84)	6.63(3.77-9.49)	6.03(3.53-8.54)
PFS-BTC	3.06(1.26-4.88)	3.5(3.00-4.01)	4.93(3.54-6.32)
PFS-CHCC	2.66(2.51-2.83)	NA	NA
OS — Median (95%CI) month			
OS-All	13.53(8.10-19.0)	12.73(9.23-16.24)	10.07(6.96-13.17)
OS-HCC	NR	17.43(8.06-26.81)	8.33(7.79-8.88)
OS -BTC	10.13(6.56-13.71)	12.03(8.78-15.28)	9.79(3.51-41.96)
OS -CHCC	NA	NA	NA

Abbreviations: OS: overall survival, PFS: progression-free survival, CI: confidence interval, PR: partial response, SD: stable disease, PD: progressive disease, DCB: durable clinical benefit, NCB: no clinical benefit, NA: not available ,NR: not reach, NAFLD: Non-alcoholic fatty liver disease, AFLD: alcoholic fatty liver disease