

S1 Table. Patient characteristics according to risk group in the investigation dataset

Characteristic	Investigation dataset	Risk group			p-value
	Total (n=340)	Low (n=147)	Intermediate (n=145)	High (n=43)	
Age (yr)					
< 67	163 (47.9)	75 (51)	67 (46.2)	18 (41.9)	0.505
≥ 67	177 (52.1)	72 (49)	78 (53.8)	25 (58.1)	
Sex					
Male	201 (59.1)	86 (58.5)	83 (57.2)	28 (65.1)	0.651
Female	139 (40.9)	61 (41.5)	62 (42.8)	15 (34.9)	
Disease status					
Recurrent	117 (34.4)	71 (48.3)	37 (25.5)	6 (14)	< 0.001
Metastatic	223 (65.6)	76 (51.7)	108 (74.5)	37 (86)	
ECOG					
0-2	296 (87.1)	147 (100)	144 (99.3)	0	< 0.001
3-4	44 (12.9)	0	1 (0.7)	43 (100)	
Primary site					
Intrahepatic CC	87 (25.6)	30 (20.4)	37 (25.5)	18 (41.9)	
Hilar CC	56 (16.5)	24 (16.3)	23 (15.9)	7 (16.3)	
Non-hilar CC	61 (17.9)	28 (19)	25 (17.2)	7 (16.3)	
Gallbladder cancer	103 (30.3)	47 (32)	45 (31)	11 (25.6)	
Ampullary cancer	33 (9.7)	18 (12.2)	15 (10.3)	0	
BMI					
≥ 18.5	309 (92.0)	140 (96.6)	131 (90.3)	35 (81.4)	0.004
< 18.5	27 (8.0)	5 (3.4)	14 (9.7)	8 (18.6)	
WBC count (/μL)					
Normal (<10,800)	262 (77.3)	134 (91.2)	117 (80.7)	9 (20.9)	< 0.001
Abnormal (≥10,800)	77 (22.7)	13 (8.8)	28 (19.3)	34 (79.1)	
Hemoglobin (g/dL)					
Normal (≥12)	278 (82.0)	144 (98.0)	112 (77.2)	20 (46.5)	< 0.001
Abnormal (<12)	61 (18.0)	3 (2.0)	33 (22.8)	23 (53.5)	
Platelet (×10 ³ /μL)					
Normal (≥150)	182 (53.7)	99 (67.3)	71 (49)	12 (27.9)	< 0.001
Abnormal (<150)	157 (46.3)	48 (32.7)	74 (51)	31 (72.1)	
Protein (g/dL)					
Normal (≥ 6.9)	189 (55.8)	96 (65.3)	74 (51)	17 (39.5)	0.003
Abnormal (< 6.9)	150 (44.2)	51 (34.7)	71 (49)	26 (60.5)	
Albumin (g/dL)					
Normal (≥ 3.4)	300 (88.5)	139 (94.6)	124 (85.5)	34 (79.1)	0.004

Abnormal (< 3.4)	39 (11.5)	8 (5.4)	21 (14.5)	9 (20.9)	
BUN (mg/dL)					
Normal (< 23)	143 (42.2)	87 (59.2)	50 (34.5)	5 (11.6)	< 0.001
Abnormal (≥ 23)	196 (57.8)	60 (40.8)	95 (65.6)	38 (88.4)	
AST (IU/L)					
Normal (< 30)	134 (39.5)	75 (51.0)	49 (33.8)	8 (18.6)	< 0.001
Abnormal (≥ 30)	205 (60.5)	72 (49.0)	96 (66.2)	35 (81.4)	
ALT (IU/L)					
Normal (< 33)	177 (52.2)	91 (61.9)	66 (45.5)	17 (39.5)	0.004
Abnormal (≥ 33)	162 (47.8)	56 (38.1)	79 (54.5)	26 (60.6)	
Bilirubin (mg/dL)					
Normal (< 1.2)	212 (62.7)	112 (76.2)	82 (56.9)	15 (34.9)	< 0.001
Abnormal (≥ 1.2)	126 (37.3)	35 (23.8)	62 (43.1)	28 (65.1)	
ALP (IU/L)					
Normal (< 123)	304 (89.7)	132 (89.8)	132 (91.0)	37 (86.0)	0.629
Abnormal (≥ 123)	35 (10.3)	15 (10.2)	13 (9.0)	6 (14.0)	
Cholesterol (mg/dL)					
Normal (< 139)	95 (28.1)	35 (23.8)	37 (25.7)	21 (48.8)	0.004
Abnormal (≥ 139)	243 (71.9)	112 (46.2)	107 (74.3)	22 (51.2)	
CEA (ng/mL)					
< 9	231 (69)	119 (81)	102 (70.3)	10 (23.3)	<0.001
≥ 9	104 (31)	28 (19)	43 (29.7)	33 (76.7)	
CA19-9 (U/mL)					
< 120	153 (45.1)	147 (100)	4 (2.8)	0	< 0.001
≥ 120	186 (54.9)	0	141 (97.2)	43 (100)	
NLR					
< 3	140 (41.3)	104 (70.7)	25 (17.2)	11 (25.6)	< 0.001
≥ 3	199 (58.7)	43 (29.3)	120 (82.8)	32 (74.4)	
PLR					
< 150	156 (46.3)	89 (60.5)	64 (44.1)	3 (7)	< 0.001
≥ 150	181 (53.7)	58 (39.5)	81 (55.9)	44 (93)	
Palliative Tx					
No	106 (31.2)	29 (19.7)	49 (33.8)	25 (58.1)	< 0.001
Gem/Cis	120 (35.3)	56 (38.1)	53 (36.6)	10 (23.3)	
Others ^{a)}	114 (33.5)	62 (42.2)	43 (29.7)	8 (18.6)	

ECOG, Eastern Cooperative Oncology Group; CC, cholangiocarcinoma; BMI, body mass index; WBC, white blood cell; BUN, blood urea nitrogen; AST, aspartate aminotransferase; ALT, alanine aminotransferase; ALP, alkaline phosphatase; CEA, carcinoembryonic antigen; CA 19-9, carbohydrate antigen 19-9; NLR, neutrophil-lymphocyte ratio; PLR, platelet-lymphocyte ratio; Tx, treatment; Gem/Cis, combination chemotherapy with cisplatin and gemcitabine. ^{a)}Fluorouracil or gemcitabine-based (excluding Gem/Cis) chemotherapy.