**Supplementary table 1 Comparison of patient characteristics according to MCP and ALBI grades, n (%)**

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| **Variables** | **MCP grade** | **ALBI grade** |
| 1 (*n* = 110) | 2 (*n* = 52) | 3 (*n* = 42) | ***χ*2** | ***P* value** | 1 (*n* = 136) | 2 (*n* = 66) | 3 (*n* = 2) | ***χ*2** | ***P* value** |
| Sex |  |  |  | 6.389 | 0.038 |  |  |  | 2.051 | 0.424 |
| Male | 100 (90.9) | 42 (80.8) | 32 (76.2) |  |  | 119 (87.5) | 52 (80.3) | 2 (100.0) |  |  |
| Age, yr |  |  |  | 2.116 | 0.364 |  |  |  | 1.934 | 0.414 |
| > 50 | 51 (46.4) | 30 (57.7) | 23 (54.8) |  |  | 65 (47.8) | 38 (57.6) | 1 (50.0) |  |  |
| BMI, kg/m2 |  |  |  | 9.546 | 0.008 |  |  |  | 0.558 | 0.884 |
| ≥ 24 | 55 (50.0) | 15 (28.8) | 12 (28.6) |  |  | 56 (41.2) | 25 (37.9) | 1 (50.0) |  |  |
| Cause of hepatitis |  |  |  | 7.817 | 0.106 |  |  |  | 6.262 | 0.213 |
| HBV | 93 (84.5) | 46 (88.5) | 35 (83.3) |  |  | 119 (87.5) | 54 (81.8) | 1 (50.0) |  |  |
| Prealbumin, mg/L |  |  |  | 138.456 | < 0.001 |  |  |  | 40.958 | < 0.001 |
| > 170 | 110 (100.0) | 17 (32.7) | 4 (9.5) |  |  | 108 (79.4) | 22 (33.3) | 1 (50.0) |  |  |
| Albumin, g/L |  |  |  | 75.917 | < 0.001 |  |  |  | 64.717 | < 0.001 |
| > 35 | 110 (100.0) | 49 (94.2) | 21 (50.0) |  |  | 136 (100.0) | 44 (66.7) | 0 (0.0) |  |  |
| Bilirubin, μmol/L |  |  |  | 25.643 | < 0.001 |  |  |  | 30.218 | < 0.001 |
| <51 | 110 (100.0) | 52 (100.0) | 34 (81.0) |  |  | 136 (100) | 60 (90.9) | 0 (0.0) |  |  |
| PT, s |  |  |  | 33.645 | < 0.001 |  |  |  | 24.885 | < 0.001 |
| ≤ 14.5 | 101 (91.8) | 35 (67.3) | 21 (50.0) |  |  | 119 (85.7) | 37 (56.1) | 1 (50.0) |  |  |
| ALT, U/L |  |  |  | 7.375 | 0.026 |  |  |  | 4.784 | 0.061 |
| ≤40 | 76 (69.1) | 32 (61.5) | 18 (45.2) |  |  | 90 (66.2) | 37 (56.1) | 1 (50.0) |  |  |
| AFP, ng/mL |  |  |  | 2.751 | 0.263 |  |  |  | 0.676 | 0.888 |
| < 400 | 76 (69.1) | 34 (65.4) | 23 (54.8) |  |  | 90 (66.2) | 42 (63.6) | 1 (50.0) |  |  |
| INR |  |  |  | 5.926 | 0.060 |  |  |  | 9.245 | 0.012 |
| < 1.3 | 108 (98.2) | 51 (98.1) | 38 (90.5) |  |  | 134 (98.5) | 62 (93.9) | 1 (50.0) |  |  |
| PLT, 109/L |  |  |  | 0.400 | 0.824 |  |  |  | 0.560 | 0.848 |
| ≥ 100 | 82 (74.5) | 28 (73.1) | 33 (78.6) |  |  | 103 (75.7) | 48 (72.7) | 1 (100.0) |  |  |
| Child-Pugh grade |  |  |  | 47.253 | < 0.001 |  |  |  | 35.640 | < 0.001 |
| A | 110 (100.0) | 51 (98.1) | 26 (69.1) |  |  | 135 (99.3) | 52 (78.8) | 0 (0.0) |  |  |
| Number of tumors |  |  |  | 3.123 | 0.224 |  |  |  | 8.435 | 0.008 |
| ≥ 2 | 20 (18.2) | 10 (19.2) | 13 (31.0) |  |  | 23 (16.9) | 18 (27.3) | 2 (100.0) |  |  |
| Tumor size, cm |  |  |  | 4.876 | 0.090 |  |  |  | 5.022 | 0.049 |
| < 5 | 78 (70.9) | 32 (61.5) | 22 (52.4) |  |  | 95 (69.9) | 36 (54.5) | 1 (50.0) |  |  |
| Blood transfusion |  |  |  | 6.337 | 0.045 |  |  |  | 8.945 | 0.006 |
| Yes | 36 (32.7) | 12 (23.1) | 20 (47.6) |  |  | 37 (27.2) | 29 (43.9) | 2 (100.0) |  |  |
| Surgical bleeding, mL |  |  |  | 8.020 | 0.019 |  |  |  | 4.449 | 0.070 |
| ≤ 400 | 37 (33.6) | 17 (32.4) | 24 (57.1) |  |  | 47 (34.6) | 29 (43.9) | 2 (100.0) |  |  |
| Types of liver resection (Minor/Major) |  |  |  | 4.537 | 0.110 |  |  |  | 8.549 | 0.011 |
| Minor resection | 87 (79.1) | 44 (84.6) | 28 (66.7) |  |  | 112 (82.4) | 47 (71.2) | 0 (0.0) |  |  |
| Intraoperative adiotherapy and/or chemotherapy |  |  |  | 3.164 | 0.208 |  |  |  | 0.562 | 0.863 |
| Yes | 34 (30.9) | 15 (28.8) | 7 (16.7) |  |  | 39 (28.7) | 17 (25.8) | 0 (0.0) |  |  |
| PVTT (yes/no) |  |  |  | 4.998 | 0.084 |  |  |  | 3.513 | 0.135 |
| Yes | 11 (10.0) | 9 (17.3) | 10 (23.8) |  |  | 17 (12.5) | 12 (18.2) | 1 (50.0) |  |  |
| Capsule formation (yes/no) |  |  |  | 0.067 | 0.967 |  |  |  | 0.258 | 1 |
| Yes | 14 (12.7) | 7 (13.5) | 6 (14.3) |  |  | 18 (13.2) | 9 (13.6) | 0 (0.0) |  |  |
| Differentiation |  |  |  | 1.774 | 0.414 |  |  |  | 1.781 | 0.423 |
| Poor | 63 (57.3) | 31 (59.6) | 29 (69.0) |  |  | 50 (36.8) | 30 (45.5) | 1 (50.0) |  |  |
| PH |  |  |  | 3.856 | 0.153 |  |  |  | 2.595 | 0.225 |
| Yes | 20 (18.2) | 16 (30.8) | 12 (28.6) |  |  | 28 (20.6) | 20 (30.3) | 0 (0.0) |  |  |
| Liver cirrhosis (yes/no) |  |  |  | 4.178 | 0.127 |  |  |  | 0.454 | 0.884 |
| Yes | 58 (52.7) | 36 (69.2) | 26 (61.9) |  |  | 79 (58.1) | 40 (60.6) | 1 (50.0) |  |  |

BMI: body mass index; PH: portal hypertension; C-P: Child-Pugh; BCLC: Barcelona Clinic Liver Cancer; PVTT: portal vein tumour thrombus; MCP: modified Child-Pugh; ALBI: Albumin-Bilirubin; type of liver resection: minor ≤ 3 liver segments; major ≥ 4 liver segments; intraoperative radiotherapy: implanted with radiation particles I125 or I131; intraoperative chemotherapy: implanted with a chemotherapy pump.