**Suppl 1.** Comparing groups that received immune-checkpoint inhibitor therapy and transarterial radioembolization (TARE) in the study population

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|  | **All patients (n = 141)** | **ICI-No (n = 102)** | **ICI-Yes (n = 39)** | **P- value** |
| **Age Group** | | | | 0.683 |
| <65 | 69 (48.9%) | 51 (50.0%) | 18 (46.2%) |  |
| >=65 | 72 (51.1%) | 51 (50.0%) | 21 (53.8%) |  |
| **Race** | | | | 0.510 |
| White | 113 (80.1%) | 84 (82.4%) | 29 (74.4%) |  |
| African American/Black | 22 (15.6%) | 14 (13.7%) | 8 (20.5%) |  |
| Other | 6 (4.3%) | 4 (3.9%) | 2 (5.1%) |  |
| **History of Hepatitis C** | | | | 0.272 |
| No | 69 (48.9%) | 47 (46.1%) | 22 (56.4%) |  |
| Yes | 72 (51.1%) | 55 (53.9%) | 17 (43.6%) |  |
| **History of Liver Cirrhosis** | | | | 0.119 |
| No | 31 (22.0%) | 19 (18.6%) | 12 (30.8%) |  |
| Yes | 110 (78.0%) | 83 (81.4%) | 27 (69.2%) |  |
| **History of Metabolic Dysfunction-associated Steatohepatitis (MASH)** | | | | 0.780 |
| No | 124 (87.9%) | 89 (87.3%) | 35 (89.7%) |  |
| Yes | 17 (12.1%) | 13 (12.7%) | 4 (10.3%) |  |
| **History of Diabetes Mellitus** | | | | 0.265 |
| No | 91 (64.5%) | 63 (61.8%) | 28 (71.8%) |  |
| Yes | 50 (35.5%) | 39 (38.2%) | 11 (28.2%) |  |
| **Baseline\* Ascites** | | | | 0.889 |
| No | 106 (75.2%) | 77 (75.5%) | 29 (74.4%) |  |
| Yes | 35 (24.8%) | 25 (24.5%) | 10 (25.6%) |  |
| **Baseline\* Hepatic encephalopathy** | | | | 0.888 |
| No | 100 (70.9%) | 72 (70.6%) | 28 (71.8%) |  |
| Yes | 41 (29.1%) | 30 (29.4%) | 11 (28.2%) |  |
| **BMI, mean (sd)** | 29 (6.5) | 29 (6.6) | 28 (6.4) | 0.683 |
| **Active smoking** | | | | 0.187 |
| No | 89 (63.1%) | 61 (59.8%) | 28 (71.8%) |  |
| Yes | 52 (36.9%) | 41 (40.2%) | 11 (28.2%) |  |
| **Active alcohol** | | | | 0.645 |
| No | 91 (64.5%) | 67 (65.7%) | 24 (61.5%) |  |
| Yes | 50 (35.5%) | 35 (34.3%) | 15 (38.5%) |  |
| **Line of TARE used** | | | | 0.205 |
| First | 59 (41.8%) | 46 (45.1%) | 13 (33.3%) |  |
| > 1 | 82 (58.2%) | 56 (54.9%) | 26 (66.7%) |  |
| **History of Surgery** | | | | **0.044** |
| No | 123 (87.2%) | 93 (91.2%) | 30 (76.9%) |  |
| Yes | 18 (12.8%) | 9 (8.8%) | 9 (23.1%) |  |
| **History of Ablation** | | | | 0.419 |
| No | 101 (71.6%) | 75 (73.5%) | 26 (66.7%) |  |
| Yes | 40 (28.4%) | 27 (26.5%) | 13 (33.3%) |  |
| **History of Transcatheter Arterial Chemoembolization** | | | | 0.179 |
| No | 56 (39.7%) | 44 (43.1%) | 12 (30.8%) |  |
| Yes | 85 (60.3%) | 58 (56.9%) | 27 (69.2%) |  |
| **History of Stereotactic Body Radiation Therapy** | | | | **0.046** |
| No | 128 (90.8%) | 96 (94.1%) | 32 (82.1%) |  |
| Yes | 13 (9.2%) | 6 (5.9%) | 7 (17.9%) |  |
| **History of Tyrosine kinase inhibitors** | | | | 0.092 |
| No | 134 (95.0%) | 99 (97.1%) | 35 (89.7%) |  |
| Yes | 7 (5.0%) | 3 (2.9%) | 4 (10.3%) |  |
| **Number of Lesions** | | | | 0.994 |
| Single | 65 (46.1%) | 47 (46.1%) | 18 (46.2%) |  |
| Multiple | 76 (53.9%) | 55 (53.9%) | 21 (53.8%) |  |
| **Size of the lesions** | | | | 0.338 |
| <=3 cm | 56 (39.7%) | 43 (42.2%) | 13 (33.3%) |  |
| > 3cm or multiple | 85 (60.3%) | 59 (57.8%) | 26 (66.7%) |  |
| **History of portal vein tumor thrombus** | | | | 0.972 |
| None | 107 (75.9%) | 77 (75.5%) | 30 (76.9%) |  |
| Left portal vein | 4 (2.8%) | 3 (2.9%) | 1 (2.6%) |  |
| Main portal vein | 14 (9.9%) | 11 (10.8%) | 3 (7.7%) |  |
| Present but location is unclear | 7 (5.0%) | 5 (4.9%) | 2 (5.1%) |  |
| Right portal Vein | 9 (6.4%) | 6 (5.9%) | 3 (7.7%) |  |
| **Baseline\* total bilirubin, mean (sd)** | 1 (0.6) | 1 (0.5) | 1 (0.9) | 0.720 |
| **Baseline\* Albumin, mean (sd)** | 4 (0.6) | 4 (0.6) | 4 (0.7) | 0.683 |
| **Barcelona Clinic Liver Cancer staging at diagnosis** | | | | 0.606 |
| A | 105 (74.5%) | 77 (75.5%) | 28 (71.8%) |  |
| B | 34 (24.1%) | 24 (23.5%) | 10 (25.6%) |  |
| C | 2 (1.4%) | 1 (1.0%) | 1 (2.6%) |  |
| **Number of TAREs** | | | | 0.888 |
| Single | 122 (86.5%) | 88 (86.3%) | 34 (87.2%) |  |
| Multiple | 19 (13.5%) | 14 (13.7%) | 5 (12.8%) |  |
| **Total bilirubin post-TARE, mean (sd)** | 2 (2.3) | 2 (2.5) | 1 (1.7) | 0.051 |
| **Total Albumin post-TARE, mean (sd)** | 3 (0.6) | 3 (0.6) | 3 (0.5) | **0.002** |
| **Ascites post-TARE** | | | | 0.183 |
| No | 74 (52.5%) | 50 (49.0%) | 24 (61.5%) |  |
| Yes | 67 (47.5%) | 52 (51.0%) | 15 (38.5%) |  |
| **Hepatic Encephalopathy post-TARE** | | | | 0.912 |
| No | 93 (66.0%) | 67 (65.7%) | 26 (66.7%) |  |
| Yes | 48 (34.0%) | 35 (34.3%) | 13 (33.3%) |  |
| **Barcelona Clinic liver cancer at diagnosis post-TARE** | | | | **0.040** |
| A | 58 (41.1%) | 36 (35.3%) | 22 (56.4%) |  |
| B | 64 (45.4%) | 49 (48.0%) | 15 (38.5%) |  |
| C | 19 (13.5%) | 17 (16.7%) | 2 (5.1%) |  |
| **Tyrosine kinase inhibitors used in the life time** | | | | **<0.001** |
| No | 107 (75.9%) | 85 (83.3%) | 22 (56.4%) |  |
| Yes | 34 (24.1%) | 17 (16.7%) | 17 (43.6%) |  |

\*before TARE