**Supplementary material**

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**sFigure 1.** Overall and disease-free survival of patients with hepatocellular carcinoma included in the study (N=161)

**sTable 1.** Baseline characteristics of patients with low (≤ 1.715) and high (> 1.715) neutrophil-to-lymphocyte ratio (NLR)

|  |  |  |
| --- | --- | --- |
|  | NLR |  |
|  | **≤ 1.715** | **> 1.715** | **P** |
| Age (years)mean ± SDmedian (min-max) | 61 ± 963 (18-79) | 63 ± 1264 (20-86) | 0.209 |
| Gender (%)malefemale | 39 (60.9%)25 (39.1%) | 69 (71.1%) 28 (28.9%) | 0.230 |
| Cirrhosis (%)yesno | 5 (7.8%)59 (92.2%) | 15 (15.4%)82 (50.6%) | 0.122 |
| Portal hypertension (%)yesno | 34 (53.1%)30 (46.9%) | 49 (50.5%)48 (49.5%) | 0.748 |
| Esophageal varices (%)yes no | 9 (14.1%)55 (85.9%)  | 13 (13.4%)84 (86.6%) | 1 |
| Child-Pugh (%)†A5A6B7 | 49 (74.6%)14 (21.8%)1 (1.6%) | 62 (57.3%)30 (30.9%)5 (5.2%) | 0.117 |
| MELDmean ± SDmedian (quartile 25-75) | 8 ± 28 (7-9) | 9 ± 39 (7-10) | 0.159 |
| Bilirubin (g/dL)mean ± SDmedian (quartile 25-75) | 0.7 ± 0.10.6 (0.5-0.9) | 0.7 ± 0.30.6 (0.5-0.9) | 0.862 |
| Aspartate aminotransferase (AST. U/L)mean ± SDmedian (quartile 25-75) | 60 ± 4647 (29-72) | 62 ± 3242 (27-64) | 0.671 |
| Alanine aminotransferase (ALT. U/L)mean ± SDmedian (quartile 25-75) | 56 ± 5041 (30-69) | 51 ± 5135 (21-59) | 0.068 |
| Alpha-fetoprotein (ng/mL)mean ± SDmedian (quartile 25-75) | 382 ± 897.521.6 (5.1-227.7) | 3975.6 ± 1597522 (4.9-151) | 0.784 |
| Albumin (g/dL)mean ± SDmedian (quartile 25-75) | 4.2 ± 0.3 4.3 (4.1-4.6) | 4.0 ± 0.3 4.1 (3.7-4.5) | **0.028** |
| PLRmean ± SDmedian (quartile 25-75) | 89.9 ± 103 72.4 (53.7-93.2) | 134 ± 73.1 111.4 (91.2-160) | **<0.001** |
| MLRmean ± SDmedian (quartile 25-75) | 3.2 ± 3.93.1 (2-3.8) | 4.6 ± 3.3 4.4 (3.4-5.5) | **<0.001** |
| Tumor size (mm)mean ± SDmedian (quartile 25-75) | 39 ± 2635 (21-45) | 77 ± 57 58 (35-100) | **<0.001** |
| Vascular invasionyesno | 32 (50%)32 (50%) | 43 (44.3%)54 (55.6%) | 0.521 |

SD: standard deviation; MELD: Model for End-Stage Liver Disease; PLR: platelet-to-lymphocyte ratio; MLR: monocyte-to-lymphocyte ratio

† % of patients with cirrhosis

**sTable 2.** Baseline characteristics of patients with low (≤ 2.475) and high (> 2.475) neutrophil-to-lymphocyte ratio (NLR)

|  |  |  |
| --- | --- | --- |
|  | NLR |  |
|  | **≤ 2.475** | **> 2.475** | **P** |
| Age (years)mean ± SDmedian (min-max) | 62 ± 1164 (18-86) | 63 ± 1061 (19-79) | 0.773 |
| Gender (%)malefemale | 69 (63.3%)40 (36.7%) | 33 (78.6%) 9 (21.4%) | 0.083 |
| Cirrhosis (%)yesno | 91 (83.5%)18 (16.5%) | 36 (85.7%)6 (14.3%) | 0.122 |
| Portal hypertension (%)yesno | 28 (25.7%)57 (74.3%) | 11 (30.6%)25 (69.4%) | 0.835 |
| Esophageal varices (%)yes no | 15 (13.8%)94 (86.2%) | 7 (16.7%)35 (83.3%) | 0.617 |
| Child-Pugh (%)†A5A6B7 | 76 (84.6%)11 (12.1%)3 (3.3%) | 30 (88.3%)4 (11.1%)2 (5.6%) | 0.366 |
| MELDmean ± SDmedian (quartile 25-75) | 8 ± 28 (7-9) | 9 ± 38 (7-10) | 0.388 |
| Bilirubin (g/dL)mean ± SDmedian (quartile 25-75) | 0.6 ± 0.30.6 (0.5-0.7) | 0.8 ± 0.40.7 (0.5-0.9) | **0.020** |
| Aspartate aminotransferase (AST. U/L)mean ± SDmedian (quartile 25-75) | 59 ± 5944 (29-66) | 65 ± 6540 (24-74) | 0.470 |
| Alanine aminotransferase (ALT. U/L)mean ± SDmedian (quartile 25-75) | 56 ± 53 41 (27-64) | 53 ± 4738 (20-80) | 0.491 |
| Alpha-fetoprotein (ng/mL)mean ± SDmedian (quartile 25-75) | 2051.4 ± 9625.9 16.2 (4.6-141.4) | 2455 ± 7045.635.4 (4.7-424.3) | 0.338 |
| Albumin (g/dL)mean ± SDmedian (quartile 25-75) | 4.1 ± 0.6 4.1 (3.8-4.5) | 4.0 ± 0.6 4.0 (3.6-4.5) | 0.577 |
| PLRmean ± SDmedian (quartile 25-75) | 98 ± 87.5 82.3 (60-108) | 157 ± 81.9 147.2 (104.5-176) | **<0.001** |
| MLRmean ± SDmedian (quartile 25-75) | 2.5 ± 1.1 2.1 (1.6-3.3) | 4.4 ± 2.1 3.8 (3-5.2) | **<0.001** |
| Tumor size (mm)mean ± SDmedian (quartile 25-75) | 54 ± 44 40 (25-65) | 80 ± 58 67 (40-100) | **0.003** |
| Vascular invasionyesno | 51 (48.6%)54 (51.4%) | 24 (57.1%)18 (42.9%) | 0.367 |

SD: standard deviation; MELD: Model of End Stage Liver Disease; PLR: platelet-to-lymphocyte ratio; MLR: monocyte-to-lymphocyte ratio

† % of patients with cirrhosis

**sTable 3.** Baseline characteristics of patients with low (≤ 100.25) and high (> 100.25) platelet-to-lymphocyte ratio (PLR)

|  |  |  |
| --- | --- | --- |
|  | PLR |  |
|  | **≤ 100.25** | **> 100.25** | **P** |
| Age (years)mean ± SDmedian (min-max) | 63 ± 9 64 (18-81) | 60 ± 13 60 (19-86) | 0.112 |
| Gender (%)malefemale | 53 (63.1%)31 (36.9%) | 49 (73.1%) 18 (26.9%) | 0.223 |
| Cirrhosis (%)yesno | 75 (83.3%)9 (10.7%) | 52 (74.6%)15 (22.4%) | 0.072 |
| Portal hypertension (%)yesno | 25 (29.8%)59 (70.2%) | 14 (20.9%)53 (79.1%) | 0.431 |
| Esophageal varices (%)yes no | 14 (16.7%)70 (83.3%) | 8 (11.9%)59 (88.1%) | 0.490 |
| Child-Pugh (%)†A5A6B7 | 63 (84%)10 (13.3%)2 (2.7%) | 46 (88,5%)3 (5.8%)3 (5.8%) | 0.351 |
| MELDmean ± SDmedian (quartile 25-75) | 8 ± 2 8 (7-9) | 9 ± 3 8 (7-9) | 0.881 |
| Bilirubin (g/dL)mean ± SDmedian (quartile 25-75) | 0.7 ± 0.40.6 (0.4-0.8) | 0.8 ± 0.4 0.7 (0.5-0.9) | **0.004** |
| Aspartate aminotransferase (AST, U/L)mean ± SDmedian (quartile 25-75) | 63 ± 66 44 (29-68) | 59 ± 5340 (26-66) | 0.495 |
| Alanine aminotransferase (ALT. U/L)mean ± SDmedian (quartile 25-75) | 57 ± 4646 (28-67) | 53 ± 5834 (21-69) | 0.093 |
| Alpha-fetoprotein (ng/mL)mean ± SDmedian (quartile 25-75) | 489 ± 1782.7 18.8 (5.8-174.4) | 4278.8 ± 13149.5 19 (2.6-161) | 0.390 |
| Albumin (g/dL)mean ± SDmedian (quartile 25-75) | 4.1 ± 0.6 4.1 (3.8-4.5) | 4.1 ± 0.54.1 (3.7-4.5) | 0.889 |
| NLRmean ± SDmedian (quartile 25-75) | 1.6 ± 0.7 1.5 (1.1-2.0) | 3.2 ± 3.1 2.5 (1.9-3.6) | **<0.001** |
| MLRmean ± SDmedian (quartile 25-75) | 3.4 ± 2.43.1 (1.8-3.8) | 4.2 ± 1.64 (3-5.2) | **<0.001** |
| Tumor size (mm)mean ± SDmedian (quartile 25-75) | 41 ± 28 34 (22-45) | 86 ± 59 75 (40-125) | **<0.001** |
| Vascular invasionyesno | 34 (42%)47 (58%) | 41 (62.1%)25 (37.9%) | **0.020** |

SD: standard deviation; MELD: Model for End-Stage Liver Disease; NLR: neutrophil-to-lymphocyte ratio; MLR: monocyte-to-lymphocyte ratio

† % of patients with cirrhosis



**sFigure 2.** Overall survival of patients with hepatocellular carcinoma < 5 cm (Group 1) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)



**sFigure 3.** Disease-free survival of patients with hepatocellular carcinoma < 5 cm (Group 1) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)



**sFigure 4.** Overall survival of patients with hepatocellular carcinoma between 5 and 10 cm (Group 2) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)



**sFigure 5.** Disease-free survival of patients with hepatocellular carcinoma between 5 and 10 cm (Group 2) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)



**sFigure 6.** Overall survival of patients with hepatocellular carcinoma > 10 cm (Group 3) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)



**sFigure 7.** Disease-free survival of patients with hepatocellular carcinoma > 10 cm (Group 3) with low (blue) and high (red) neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lymphocyte ratio (MLR)