**Supplementary Table 4. The analysis for variables related to survival of patients with HCC using the Cox proportional hazards regression**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Univariate analysis |  | Multivariate analysis |  |
| Factors | Category | Hazard Ratio | *p*-value | 　 | Hazard Ratio | *p*-value | 　 |
| Age | ≧ 65 years | 1.0468 | (0.6782-1.6191) | 0.8370 |  |  |  |  |  |
| Etiology | viral | 0.6466 | (0.4664-0.8964) | 0.0089 | \* | 0.6009 | (0.3988-0.9054) | 0.0149 | \* |
| HCC treatment | RFA | 0.3468 | (0.2057-0.5845) | < 0.0001 | \* | 0.6423 | (0.3639-1.1338) | 0.1268 |  |
| BCLC staging | A | 0.3419 | (0.2381-0.4910) | < 0.0001 | \* | 0.5062 | (0.3273-0.7827) | 0.0022 | \* |
| Child-Pugh grade | A | 0.6322 | (0.3942-1.0127) | 0.0570 |  |  |  |  |  |
| FIB-4 index | ≧ Medium (3.45) | 1.4171 | (1.0294-1.9510) | 0.0326 | \* | 0.9431 | (0.6184-1.4382) | 0.7856 |  |
| ALBI  | ≧ Medium (-2.3) | 2.1883 | (1.5827-3.0257) | < 0.0001 | \* | 1.9710 | (1.2738-3.0499) | 0.0023 | \* |
| MELD-Na | ≧ Medium (7.45) | 1.2058 | (0.8766-1.6585) | 0.2500 |  |  |  |  |  |
| α-fetoprotein | ≧ Medium (7.85) | 1.5555 | (0.6363-3.8023) | 0.3327 |  |  |  |  |  |
| DCP | ≧ Medium (55) | 3.6235 | (2.4893-5.274) | < 0.0001 | \* | 2.4060 | (1.5000-3.8592) | 0.0003 | \* |
| BCAA | ≦ IQR (441.3) | 2.2960 | (1.6499-3.1952) | < 0.0001 | \* | 1.0968 | (0.7049-1.7065) | 0.6821 |  |
| Sarcopenia | Sarcopenia + | 1.6759 | (1.1951-2.3501) | 0.0028 | \* | 1.8361 | (1.2008-2.8075) | 0.0050 | \* |
| Total FAs | ≦ IQR (2413) | 1.1958 | (0.7810-1.8310) | 0.4106 |  |  |  |  |  |
| SFAs | ≦ IQR (772.3) | 1.1769 | (0.7683-1.8028) | 0.4541 |  |  |  |  |  |
| Relative amount | ≦ IQR (31.3) | 0.5429 | (0.3423-0.8612) | 0.0095 | \* | 0.8294 | (0.4932-1.3949) | 0.4807 |  |
| MUFAs | ≦ IQR (544) | 0.6784 | (0.4191-1.0981) | 0.1143 |  |  |  |  |  |
| Relative amount | ≦ IQR (21.45) | 0.4855 | (0.2937-0.8025) | 0.0048 | \* | 0.8697 | (0.4953-1.5271) | 0.6270 |  |
| n-3 PUFAs | ≦ IQR (171.6) | 1.6681 | (1.1083-2.5106) | 0.0142 | \* | 1.7159 | (1.0805-2.7248) | 0.0221 | \* |
| Relative amount | ≦ IQR (6.52) | 1.3374 | (0.8843-2.0228) | 0.1684 |  |  |  |  |  |
| n-6 PUFAs | ≦ IQR (835.1) | 1.7808 | (1.2038-2.6346) | 0.0039 | \* |  |  |  |  |
| Relative amount | ≦ IQR (31.84) | 1.9574 | (1.3272-2.8868) | 0.0007 | \* | 2.1207 | (0.3031-0.7336) | 0.0009 | \* |

HCC, hepatocellular carcinoma; RFA, radiofrequency ablation; FIB-4, fibrosis-4 score; ALBI, albumin-bilirubin; MELD, the model of end-stage liver disease; DCP, des-γ-carboxy prothrombin; BCAA, branched-chain amino acid; FA, fatty acid; SFA, saturated fatty acid; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid.

\*: *p*-value < 0.05