**Supplementary Table 2. Clinical characteristics of MAFLD defined by different criteria**

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| --- | --- | --- | --- | --- | --- |
| Variables | Normal | NAFLD | **MAFLD** | *Pa* for with ≥ 3 vs. ≥ 2 metabolic abnormalities | *Pa* for with ≥ 2 metabolic abnormalities vs. Normal |
| BMI ≥ 23.0(Obese-MAFLD) | With diabetes(Diabetes -MAFLD) | Thinner with≥ 2 metabolic abnormalities | Thinner with≥ 3 metabolic abnormalities |
| No. | 48 790 | 22 835 | 19 053 | 2 763 | 1 242 | 457 | - | - |
| Age, years | 43.04±15.54 | 48.60±14.42 | 48.26±14.29 | 58.80±12.56 | 55.98±13.71 | 58.28±12.63 | 0.002\*\* | <0.001\*\*\* |
| Male | 25 389 (52.04) | 15 975 (69.96) | 14 077 (73.88) | 2 001 (72.42) | 566 (45.57) | 171 (37.42) | 0.003\*\* | <0.001\*\*\* |
| Severity of fatty liver |  |  |  |  |  |  |  |  |
| Mild | 0 (0) | 13 316 (58.31) | 10 483 (55.02) | 1 280 (46.33) | 899 (72.38) | 310 (67.83) | 0.120 | <0.001\*\*\* |
| Moderate | 0 (0) | 9 293 (40.70) | 8 367 (43.91) | 1 435 (51.94) | 341 (27.46) | 146 (31.95) |
| Severe | 0 (0) | 226 (0.99) | 203 (1.07) | 48 (1.74) | 2 (0.16) | 1 (0.22) |
| BMI, Kg/m2 | 22.49±10.73 | 26.03±2.96 | 26.70±2.58 | 26.40±3.16 | 21.85±1.29 | 21.91±0.96 | 0.607 | <0.001\*\*\* |
| Diabetes | 1 953 (4.17) | 2 726 (12.12) | 2 344 (12.49) | 2 763 (100) | 207 (16.68) | 94 (20.57) | 0.063 | <0.001\*\*\* |
| Hypertension | 10 139 (20.78) | 10 171 (44.54) | 9 182 (48.19) | 1 895 (68.58) | 684 (55.07) | 309 (67.61) | <0.001\*\*\* | <0.001\*\*\* |
| Platelets, 109/L | 222.39±54.91 | 226.39±56.24 | 225.59±56.55 | 212.20±55.50 | 227.01±57.67 | 224.73±60.75 | 0.325 | 0.005\*\* |
| BUN, mmoL | 4.87±1.79 | 5.09±1.23 | 5.12±1.22 | 5.41±1.36 | 5.01±1.45 | 4.99±1.24 | 0.861 | 0.002\*\* |
| Creatinine, μmolL | 69.24±19.78 | 72.73±16.76 | 73.70±16.61 | 71.64±16.81 | 67.76±20.13 | 65.90±15.12 | 0.022\* | 0.010\* |
| TBIL, μmolL | 13.30±5.47 | 13.07±5.21 | 13.13±5.20 | 13.26±5.11 | 12.58±5.12 | 12.61±5.06 | 0.821 | <0.001\*\*\* |
| ALT, U/L | 20.62±19.30 | 33.47±24.68 | 35.00±25.65 | 33.14±22.17 | 26.82±17.90 | 28.10±20.36 | 0.291 | <0.001\*\*\* |
| AST, U/L | 22.15±11.43 | 26.27±15.82 | 26.70±16.26 | 26.94±14.56 | 25.55±14.94 | 26.98±20.70 | 0.321 | <0.001\*\*\* |
| GGT, U/L | 26.44±34.74 | 43.15±39.53 | 44.82±39.51 | 47.67±44.28 | 39.92±50.03 | 41.02±53.86 | 0.221 | <0.001\*\*\* |
| ALP, U/L | 74.58±22.36 | 81.55±22.07 | 81.54±21.87 | 84.82±23.31 | 85.49±23.84 | 87.91±25.05 | 0.115 | <0.001\*\*\* |
| LDH, U/L | 181.79±34.03 | 190.83±36.43 | 191.55±37.03 | 191.09±37.28 | 189.72±32.56 | 191.35±33.60 | 0.497 | <0.001\*\*\* |
| Albumin, g/L | 45.51±2.85 | 45.69±2.75 | 45.75±2.75 | 45.45±2.84 | 45.31±2.66 | 45.40±2.61 | 0.591 | 0.021\* |
| HbA1c, % | 5.53±0.62 | 5.83±0.87 | 5.84±0.86 | 7.09±1.28 | 6.00±0.97 | 6.32±1.26 | 0.006\*\* | <0.001\*\*\* |
| FPG, mmol/L | 5.18±0.90 | 5.66±1.37 | 5.68±1.38 | 8.26±2.36 | 5.87±1.49 | 6.08±1.53 | <0.001\*\*\* | <0.001\*\*\* |
| TC, mmol/L | 5.00±0.95 | 5.34±1.02 | 5.34±1.02 | 5.37±1.18 | 5.49±1.04 | 5.48±1.04 | 0.841 | <0.001\*\*\* |
| TG, mmol/L | 1.23±0.84 | 2.13±1.70 | 2.18±1.75 | 2.54±2.37 | 2.37±1.56 | 2.79±1.65 | <0.001\*\*\* | <0.001\*\*\* |
| LDL-C, mmol/L | 3.15±0.75 | 3.48±0.77 | 3.48±0.77 | 3.46±0.85 | 3.54±0.78 | 3.55±0.80 | 0.859 | <0.001\*\*\* |
| HDL-C, mmol/L | 1.41±0.32 | 1.22±0.26 | 1.20±0.25 | 1.19±0.26 | 1.24±0.29 | 1.16±0.24 | <0.001\*\*\* | <0.001\*\*\* |
| APRI score | 0.27±0.23 | 0.31±0.23 | 0.32±0.23 | 0.35±0.33 | 0.31±0.41 | 0.34±0.62 | 0.186 | <0.001\*\*\* |
| APRI score > 1.5 | 81 (0.20) | 58 (0.29) | 48 (0.28) | 15 (0.59) | 8 (0.70) | 4 (0.95) | 0.744 | <0.001\*\*\* |
| FIB-4 score | 1.13±1.09 | 1.15±0.68 | 1.14±0.66 | 1.48±0.83 | 1.40±0.91 | 1.51±1.10 | 0.033\* | <0.001\*\*\* |
| FIB-4 score > 1.3 | 11 531 (28.05) | 6 335 (31.16) | 5 145 (30.43) | 1 294 (50.71) | 528 (46.52) | 211 (50.00) | 0.222 | <0.001\*\*\* |
| AFP | 3.10±6.19 | 3.13±2.22 | 3.12±2.28 | 3.06±2.45 | 3.31±2.07 | 3.33±1.94 | 0.415 | 0.002\*\* |
| CEA | 2.05±5.51 | 2.21±3.33 | 2.23±3.03 | 2.98±6.98 | 2.18±1.51 | 2.16±1.38 | 0.796 | 0.010\* |

a Continuous variables were compared by Student’s *t*-test, Welch’s *t*-test, or Wilcoxon rank-sum test. Categorical variables were compared by the chi-square test Fisher's exact test. \*P < 0.05, \*\*P <0.01 and \*\*\*P <0.001. AFP, alpha fetoprotein; ALP, alkaline phosphatase; ALT, alanine aminotransferase; APRI, alanine aminotransferase -to-platelet ratio index; AST, aspartate aminotransferase; BMI, body mass index; BUN, blood urea nitrogen; CEA, carcinoembryonic antigen; FIB-4, Fibrosis-4 index; FPG, fasting plasma glucose; GGT, γ-glutamyl transferase; HbA1c, glycated haemoglobin; HDL-C, high-density lipoprotein-cholesterol; LDH, lactic dehydrogenase; LDL-C, low-density lipoprotein-cholesterol; MAFLD, metabolic associated fatty liver disease; NAFLD, non-alcoholic fatty liver disease; TBIL, total bilirubin; TC, total cholesterol; TG, triglyceride.