Supplementary Material

**Supplementary Table 1 Formulas in the Study**

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|  | Formulas | References |
| **HOMA-IR** | Ins (mU/L) × FPG (mmol/L)/22.5  | 1 |
| **NFS** | −1.675 + 0.037 × age (years) + 0.094 × BMI (kg/m2) + 1.13 × IFG/diabetes (yes = 1, no = 0) + 0.99 × AST/ALT– 0.013 × platelet (×109/L) – 0.66 × albumin (g/dL) | 2 |
| **APRI** | [AST/AST (ULN)]/ platelet (×109/L) | 3 |
| **FIB-4** |  (Age (years) × AST (U/L))/ ((PLT [109/L]) × (ALT (U/L))1/2) | 4 |

HOMA-IR, homeostasis model assessment-insulin resistance. NFS, NAFLD fibrosis score. APRI, AST-to-platelet ratio index. FIB-4, Fibrosis-4 index. ULN, upper limit normal.

**Supplementary Table 2 Coefficients of selected variables in LASSO Cox regression model for all-cause mortality of participants**

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| --- | --- |
| Variables | Coefficients |
| Age | 1.0934  |
| SBP | 0.1695  |
| CRP | 0.1599  |
| HbA1c | 0.1340  |
| Male | 0.1261  |
| FIB-4 | 0.0553  |
| TG | 0.0112  |
| ALP | 0.0019  |
| Waist circumference | 0.0015  |
| Fasting insulin | 0.0011  |
| NFS score | 0.0004  |

Partial likelihood deviance in the LASSO Cox regression model to analyze overall mortality among participants with complete covariates (N=12279). The variables were chosen by ten-fold cross-validation with minimum mean error.



**Supplementary Figure 1 Subgroup analysis for the cardiovascular mortality in participants with MAFLD.**

The model was adjusted by adjusted by age, sex and race-ethnicity. MAFLD, metabolic dysfunction-associated fatty liver disease, compared with non-MAFLD participants. BMI, body mass index. HR, hazard ratio. CI, confidence internal. Significance was determined as p<0.005 (Bonferroni correction applied).

**Supplementary Figure 2 Subgroup analysis for the neoplasm mortality in participants with MAFLD.** The model was adjusted by adjusted by age, sex and race-ethnicity. MAFLD, metabolic dysfunction-associated fatty liver disease, compared with non-MAFLD participants. BMI, body mass index. HR, hazard ratio. CI, confidence internal. Significance was determined as p<0.005 (Bonferroni correction applied).

**References**

1. Matthews DR, Hosker JP, Rudenski AS, Naylor BA, Treacher DF, Turner RC. Homeostasis model assessment: insulin resistance and β-cell function from fasting plasma glucose and insulin concentrations in man. *Diabetologia*. 1985;28:412–419.

2. Angulo P, Hui JM, Marchesini G, et al. The NAFLD fibrosis score: a noninvasive system that identifies liver fibrosis in patients with NAFLD. *Hepatology*. 2007;45:846–854.

3. Wai C-T, Greenson JK, Fontana RJ, et al. A simple noninvasive index can predict both significant fibrosis and cirrhosis in patients with chronic hepatitis C. *Hepatology*. 2003;38:518–526.

4. Vallet‐Pichard A, Mallet V, Nalpas B, et al. FIB‐4: an inexpensive and accurate marker of fibrosis in HCV infection. comparison with liver biopsy and fibrotest. *Hepatology*. 2007;46:32–36.