Non-alcoholic fatty liver disease is associated with low-grade albuminuria in men without diabetes mellitus

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Objectives: An additional study on a Korean population would be helpful to identify the association between non-alcoholic fatty liver disease (NAFLD) and low-grade albuminuria (LGA). The aim of our study was to evaluate the relationship between the two variables in men without diabetes mellitus.

Methods: Our study used the database from a representative sample. There were 3867 men in this survey. Our study included only men without diabetes mellitus, with a urinary albumin/creatinine ratio (UACR) < 30 mg/g (n = 1390). LGA was defined as the UACR of the highest quartile. Fatty liver index (FLI) was calculated in accordance with Bedogni’s equation. We defined the NAFLD group as that with an FLI of ≥ 60.

Results: In the multivariate analysis, the UACR in the non-NAFLD and NAFLD groups was 3.05 ± 0.14 and 5.19 ± 0.42, respectively (P < 0.001). The correlation coefficients between the FLI and UACR were 0.124 in the Pearson’s correlation test and 0.084 in the Partial correlation test (P < 0.001 for Pearson’s correlation and P = 0.002 for Partial correlation). Linear regression analysis showed a positive association between the FLI and UACR in multivariate analysis. Logistic regression analysis showed that the OR for LGA with NAFLD was 2.31 (95% CI, 1.47–3.61; P < 0.001) in the multivariate analysis. Subgroup analyses according to the presence of metabolic syndrome or age (< 50 or ≥ 50 years) showed that the association between NAFLD and UACR was better in the participants without metabolic syndrome and in those aged < 50 years.

Conclusions: NAFLD was associated with LGA in the men without DM in this study. Therefore, participants with relatively high FLI’s or NAFLD should be closely monitored for LGA, especially if men do not have MetS.