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Liver fibrosis assessed by transient elastography is associated with chronic kidney disease and diabetes

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Objectives: Existing studies have suggested an association between nonalcoholic fatty liver disease (NAFLD) and metabolic diseases. We investigated the relationship of diabetes and chronic kidney disease (CKD) with liver fibrosis using transient elastography (TE).

Methods: We conducted a retrospective cohort study of apparently healthy individuals who underwent liver Fibroscan during health screening tests between January 2018 and December 2018.

Results: Among the 2,112 subjects (mean age 54.7 years, 84.8% male), 53 (2.5%) subjects showed CKD and 291 (13.8%) subjects had diabetes. In the multivariate analysis, the highest liver stiffness measurement (LSM) tertile was significantly associated with risk of CKD and diabetes compared to the lowest LSM tertile (Odds ratio [OR]: 2.25, 95% confidence interval [CI] 1.03–4.91 and OR: 2.39, 95% CI: 1.65–3.45, respectively). The highest LSM tertile was associated with increased risk of CKD in non-obese group (OR: 3.15, 95% CI: 1.03–9.67). The highest LSM tertile was associated with increased the risk of diabetes in both non-obese and obese group (OR: 2.10, 95% CI: 1.26–3.50 and OR: 2.89, 95% CI: 1.62–5.13, respectively).

Conclusions: TE-measured LSM, a widely used technique for quantifying liver fibrosis, was associated with increased risk of CKD and diabetes. Thus, LSM by TE can be helpful to identify individuals who are at risk of having CKD or diabetes.