KSN 2021
FULLY VIRTUAL MEETING
September 02 (Thu) - 05 (Sun)

Abstract Submission No. : 2245

Advanced liver fibrosis predicts chronic kidney disease development in patients with nonalcoholic fatty liver disease

Chan-Young Jung[1], Geun Woo Ryu[1], Hyung Woo Kim[1], Sang Hoon Ahn[2], Seung Up Kim[2], Beom Seok Kim[1]
[1]Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of
[2]Department of Internal Medicine-G-I/Hepatology, Severance Hospital, Korea, Republic of

Objectives: Nonalcoholic fatty liver disease (NAFLD) and chronic kidney disease (CKD) are progressive chronic conditions that share important cardiometabolic risk factors and pathogenic mechanisms. We investigated the association between liver fibrosis and the risk of incident CKD in patients with NAFLD.

Methods: A total of 5,983 participants with NAFLD (defined as controlled attenuation parameter >222 dB/m) but without CKD who underwent transient elastography (TE) between March 2012 and August 2018 were selected. The primary outcome was incident CKD, defined as the occurrence of estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m^2 or proteinuria (≥1+ on dipstick test) on two consecutive measurements during follow-up. The secondary outcome was a 25% decline in eGFR measured on two consecutive visits.

Results: The mean age was 51.8 years and 3,756 (62.8%) participants were male. During 17,801 person-years of follow-up (mean follow-up of 3.0 years), 62 participants (1.0%) developed incident CKD. When stratified into TE-defined fibrosis stages, multivariable Cox models revealed that risk of incident CKD was 3.63-fold (95% CI, 1.64-8.06, *P*<0.001) higher in the F3-4 group (≥9.5 kPa), compared to the F0 group (<5.5 kPa). During 17,577 person-years of follow-up (mean follow-up of 3.0 years), 201 participants (3.4%) experienced the secondary outcome, for which the F3-4 group had a 2.69-fold increased risk (95% CI, 1.70-4.27, *P*<0.001), compared to the F0 group.

Conclusions: In this large cohort of NAFLD patients without baseline CKD, advanced liver fibrosis measured by transient elastography was significantly associated with a higher risk of incident CKD.

Figure 1. Cumulative incidence of chronic kidney disease by TE-defined fibrosis stage.

Fig. 1

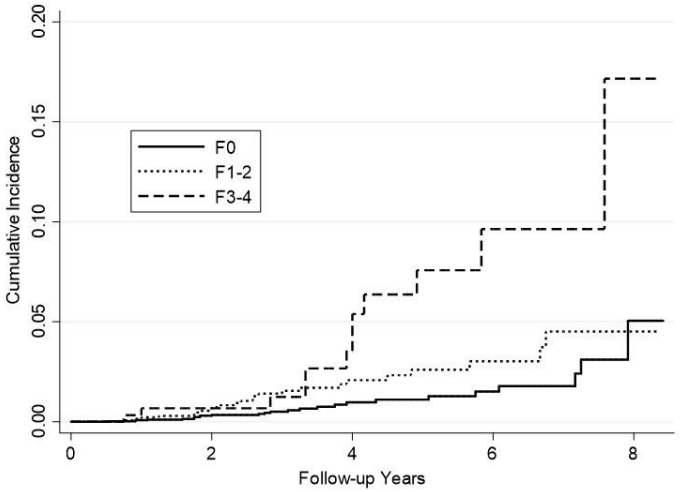

Figure 2. Cumulative incidence of 25% decline in eGFR by TE-defined fibrosis stage.

Fig. 2