

Oral Communication Abstract

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Fibrotic burden in patients with hepatitis B virus-related cirrhosis is independently associated with adverse kidney outcomes

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Objectives: Liver cirrhosis and chronic kidney disease (CKD) are progressive chronic conditions that share important cardiometabolic risk factors and pathogenic mechanisms. We investigated whether differences in remaining fibrotic burdens, assessed using transient elastography (TE), were independently associated with adverse kidney outcomes in patients with hepatitis B virus (HBV)-related cirrhosis.

Methods: A total of 1,204 patients with HBV-related cirrhosis but without baseline CKD who underwent TE between March 2012 and August 2018 were selected. The study outcome was the composite of development of incident CKD, defined as the occurrence of estimated glomerular filtration rate (eGFR) below 60 mL/min/1.73m² or proteinuria ($\geq 1+$ on dipstick test) on two consecutive measurements during follow-up, 50% decline in eGFR or onset of end-stage kidney disease (initiation of chronic dialysis), or all-cause mortality.

Results: The mean age was 53.3 years and 711 (59.1%) patients were male. During 6,312 person-years of follow-up (median follow-up of 5.5 years), 32 patients (2.7%) developed adverse kidney outcomes. When stratified into TE-defined remaining fibrotic burden, multivariable Cox models revealed that risk of adverse kidney events was 4.58-fold (95% CI, 1.51-13.96, $P < 0.001$) higher in patients with cirrhosis (≥ 11.7 kPa), compared to patients with minimal liver fibrosis (< 7.9 kPa). These associations remained significant even after adjustment for potential confounding factors, including comorbidities of hypertension and diabetes, history of acute kidney injury, and use of potentially nephrotoxic antiviral agents.

Conclusions: Higher remaining fibrotic burden assessed using TE was independently associated with unfavorable long-term kidney outcomes in patients with HBV-related cirrhosis.

Figure 1. Cumulative incidence of adverse kidney events by TE-defined remaining fibrotic burden. Log-rank test $P < 0.001$. Abbreviations: TE, transient elastography.

