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Ultrasound technology proves accurate in diagnosing cirrhosis from recurrent hepatitis C

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Researchers from the Mayo Clinic confirm that ultrasound-based transient elastography (TE) provides excellent diagnostic accuracy for detecting cirrhosis due to recurrent infection with hepatitis C virus (HCV) infection following liver transplantation. Findings from the study published in the March issue of *Liver Transplantation*, a journal of the American Association for the Study of Liver Diseases, suggest that detection of significant fibrosis is more accurate when comparing patients with chronic HCV of the native liver.

According to the World Health Organization (WHO), chronic HCV affects up to 170 million people worldwide and could lead to more severe liver diseases such as cirrhosis and liver cancer. Experts estimate that on average 6,000 liver transplants are performed in the U.S. each year. Medical evidence shows that following liver transplantation recipients who are HCV RNA-positive at the time of transplantation are at risk of reinfection with HCV. Moreover, studies have determined that fibrotic tissue can develop more quickly in the transplanted liver resulting in rapid progression of cirrhosis and graft failure.

"The current gold standard for determining liver disease severity and progression is liver biopsy," explains lead author Dr. Jayant Talwalkar with the Mayo Clinic in Rochester, Minnesota. "However, biopsy following liver transplantation may not accurately determine fibrosis severity and non-invasive imaging technology has advanced to more

accurately assess the severity of liver injury which includes an indirect assessment of elevated portal pressure." A prior study reported liver biopsy can understage cirrhosis in up to 30% of cases.

For the present study researchers reviewed studies of the diagnostic accuracy of ultrasound-based TE, a non-invasive technology used to assess fibrosis by measuring liver stiffness. The team analyzed the performance of TE compared to liver biopsy in detecting sever hepatic fibrosis caused by recurrent HCV post-transplantation. Compared to liver biopsy, TE is a reproducible diagnostic technique that is quick and painless for patients.

Six studies were identified, with five studies that evaluated significant fibrosis and cirrhosis. Analysis of the pooled estimates showed TE had a sensitivity and specificity of 83%, respectively for detecting fibrosis. Of the five studies analyzing TE for detecting cirrhosis, sensitivity estimates were 98% and specificity at 84%. "Ultrasound-based TE provides excellent diagnostic accuracy for identifying cirrhosis caused by recurrent HCV following liver transplantation," concludes Dr. Talwalkar. "Further studies that confirm our results could highlight the importance of TE as a diagnostic tool for liver transplant recipients infected with HCV."

More information: "Ultrasound-based Transient Elastography for the Detection of Hepatic Fibrosis in Patients with Recurrent HCV after Liver Transplantation: Systematic Review and Meta-analysis." Corlan O. Adebajo, Jayant A. Talwalkar, John J. Poterucha, W. Ray Kim, and Michael R. Charlton. *Liver Transplantation*; (DOI: 10.1002/lt.22460) Published online: February 24, 2012; Print Issue Date: March 2012.

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