Noninvasive diagnostics may offer alternative to liver biopsy for assessing liver fibrosis

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Patients who are evaluated for liver diseases such as hepatitis C (HCV) are typically recommended for liver biopsy to determine the extent of disease progression. For patients who question whether less invasive testing is available, clinicians now have alternatives options to consider. Elastography and serum markers are two such diagnostic options reviewed in an editorial published in the June issue of *Hepatology*, a journal of the American Association for the Study of Liver Diseases.

Epidemiological studies report that approximately 150,000 individuals in the U.S. are diagnosed with chronic liver disease each year, and nearly 20% of these cases have cirrhosis at initial presentation. Complications from cirrhosis are determined by the extent and progression of fibrosis or scaring of the liver. Liver fibrosis, however, is not a linear process, but one that fluctuates with the influences of age, sex, race, alcohol exposure and obesity.

Liver biopsy remains the gold standard for determining activity and stage of fibrosis. However, this procedure has inherent limitations that include risk of pain or bleeding, inaccurate staging from sampling error, and variability of biopsy interpretation. With the increase in availability of sophisticated laboratory blood testing, the use of diagnostic liver biopsy is on the decline. "The drawbacks to liver biopsy have prompted researchers to investigate alternative, noninvasive markers for determining the severity of liver disease," said Dr. Jayant Talwalkar of

the Mayo Clinic in Rochester, MN and editorial co-author.

Noninvasive screening with serum markers, or indicators in the blood, can identify patients at risk for liver fibrosis. Fibrotest, an indirect serum marker panel, is the most widely used and validated serum marker panel used worldwide. A number of studies have confirmed this panel to be reliable in detecting stage 4 fibrosis (cirrhosis) in patients with chronic HCV. Additional studies are underway to analyze its viability in hepatitis B, alcoholic liver disease, and nonalcoholic fatty liver disease.

Imaging techniques such as ultrasound-based transient elastography (TE) and magnetic resonance elastography (MRE) are noninvasive procedures that measure liver stiffness. Prior studies have found TE to be up to 90% accurate in diagnosing cirrhosis, and 70%-80% accurate in detecting stage 2 to stage 4 fibrosis. Evaluations of MRE have shown up to 85% accuracy for detecting intermediate to severe fibrosis (F2-F4). Currently only MRE is approved for use in the U.S.

"Noninvasive diagnostics are more advantageous to the patient as there are no serious side effects and they may be more cost effective when compared to liver biopsy although this remains to be determined," Dr. Talwalkar concluded. "Fibrotest or elastography imaging are helpful to confirm cirrhosis or minimal to no fibrosis. Liver biopsy may still be necessary to determine stage of fibrosis in those patients where noninvasive techniques were indeterminate."

This study is published in *Hepatology*.

More information: Editorial: "Noninvasive Assessment of Liver Fibrosis." Doris Nguyen and Jayant A. Talwalkar. Hepatology; Published Online: May 25, 2011 (DOI: 10.1002/hep.24401); Print Issue Date: June 2011.