

MRI predicts liver fibrosis, study says

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Moderate to severe chronic liver disease can be predicted with the use of diffusion-weighted MRI (DWI), according to a recent study conducted by researchers at New York University Medical Center in New York, NY.

“Due to the increased incidence of chronic hepatitis in the United States, particularly hepatitis C, there is a strong need for non-invasive methods to replace or supplement liver biopsy, which is relatively invasive and limited by interobserver variability and sampling error,” said Bachir Taouli, MD, lead author of the study. “DWI appears promising in that purpose, although it needs validation in larger series,” he said.

The study included 23 patients with chronic hepatitis and 7 volunteers. The researchers compared apparent diffusion coefficients (ADCs) or the quantification of water diffusion in a tissue between patients who had stage 2 or greater versus stage 1 or less fibrosis and stage 3 or greater versus stage 2 or less fibrosis. In liver fibrosis and cirrhosis, decreased ADC (i.e. restricted water diffusion) is possibly related to increased collagen deposition and decreased perfusion. The study showed that hepatic ADC was a significant predictor of stage 2 or greater and stage 3 or greater liver fibrosis.

“At this point, this is an experimental method that needs to be tested in a larger series. It should also be compared with other methods such as FibroTest (a score based on a combination of basic serum markers) or FibroScan (an ultrasound based method to measure liver stiffness) in order to be validated,” said Dr. Taouli. “However, diffusion imaging

does show potential for decreasing the number of biopsies and decreasing the number of antifibrogenic drug trials,” he said.

“We did not expect to have such good results in terms of detection of significant fibrosis, partly because this is an investigational study and we did not have any prior experience with such application,” said Dr. Taouli.

“This preliminary study was funded by a grant from the Society of Gastrointestinal Radiologists and we are now in the process of applying for extramural funding from National Institutes of Health,” said Dr. Taouli. “The goal is to validate diffusion and perfusion imaging as a replacement of liver biopsy in chronic viral hepatitis,” he said.

Source: American Roentgen Ray Society

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