

## ESPS PEER-REVIEW REPORT

**Name of journal:** World Journal of Gastroenterology

**ESPS manuscript NO:** 29836

**Title:** Magnetic Resonance Elastography is Accurate in Detecting Advanced Fibrosis in Autoimmune Hepatitis

**Reviewer's code:** 03476921

**Reviewer's country:** United States

**Science editor:** Ze-Mao Gong

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CLASSIFICATION	LANGUAGE EVALUATION	SCIENTIFIC MISCONDUCT	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> The same title	<input type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> Duplicate publication	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	<input type="checkbox"/> Plagiarism	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Major revision
		BPG Search:	
		<input type="checkbox"/> The same title	
		<input type="checkbox"/> Duplicate publication	
		<input type="checkbox"/> Plagiarism	
		<input checked="" type="checkbox"/> No	

## COMMENTS TO AUTHORS

Thank you for asking me to review manuscript 29836 "Magnetic Resonance Elastography is Accurate in Detecting Advanced Fibrosis in Autoimmune Hepatitis" submitted for publication to the World Journal of Gastroenterology. In this small retrospective study of 36 patients with autoimmune hepatitis in different stages of fibrosis, the authors set out to assess the diagnostic accuracy of magnetic resonance elastography (MRE) in detecting advanced fibrosis or cirrhosis (stage 3 or 4 fibrosis on the Batts-Ludwig histologic scoring system) compared to liver fibrosis as well as to indirect serologic markers of liver fibrosis (namely AST, ALT, AST/ALT ratio, APRI and FIB-4). Of a total of 138 patients with autoimmune hepatitis who had and MRE between 2007-2015, 102 were excluded due to a greater than 3 months interval between MRE and liver biopsy and 40 were excluded due to other coexisting chronic liver disease. The authors were hence left with a total of 36 patients (17 without any prior therapy and 19 that had received therapy). The main finding is the close correlation between liver stiffness by MRE and liver fibrosis stage on biopsy ( $r=0.83$ ,  $p<0.001$ ). The correlation remained significant after adjusting for age, BMI, inflammation grade and all

laboratory tests. Liver stiffness were significantly higher in cirrhosis compared to stages 0-3; similarly, stage 3 fibrosis had significantly higher stiffness compared to stages 0-2. There were no significant differences in liver stiffness between stages 0-2. Regarding the diagnostic performance of MRE, ROC analysis showed a liver stiffness of 4.1 kPa or higher was highly predictive of advanced fibrosis (stage  $\geq 3$ ) with 0.97 accuracy, sensitivity of 89.5%, specificity of 100%, positive predictive value of 100% and negative predictive value of 89.5%. Similarly, a cut-off of 4.5 kPa predicted cirrhosis with 0.98 accuracy, 92.3% sensitivity, 96% specificity, 92.3% PPV and 88% NPV. Not surprisingly, liver stiffness assessed by MRE clearly outperformed serum-based tests in accurately staging liver fibrosis. These findings represent a first effort at defining the role of MRE in the evaluation of AIH. There is robust information supporting the usefulness of this technique in accurately assessing liver fibrosis in other liver diseases, such as hepatitis C, hepatitis B and non-alcoholic fatty liver disease. Although the findings are not unexpected and the sample size is small, I think the information is clinically useful. However, I would like the authors to address the following points: 1. In the introduction section of the manuscript the authors try to make the case that transient elastography overestimates liver fibrosis in patients with AIH citing "recent studies have indicated that TE overestimates fibrosis in AIH." The particular citation actually refers not to a "study", but actually is a case series of 2 patients. Please make this clear for the reader. 2. What was the time from initial diagnosis and treatment to liver biopsy and MRE in these patients? 3. Were there changes in technique and interpretation methods of MRE over time? 4. If analysis is limited to untreated patients, is there a difference in diagnostic performance between MRE and serum-based tests? 5. In their discussion, authors' propose "inflammation" as a potential cause of the difference in liver stiffness the observed between the treated and untreated patients. In non-cirrhotic patients there was increased liver stiffness among the untreated AIH patients, however this was reversed in cirrhotics. How can they reconcile these differences? 6. The authors recognize the limitations of their retrospective study. They enumerate these limitations, but actually skipped the "fifth" limitation. They go from "Fourth, our study group..." to "Sixth, patients were assessed...". 7. Also on the point of limitations of the study, the authors seem to overplay the rarity of AIH as a reason the sample size is small. However, I don't t