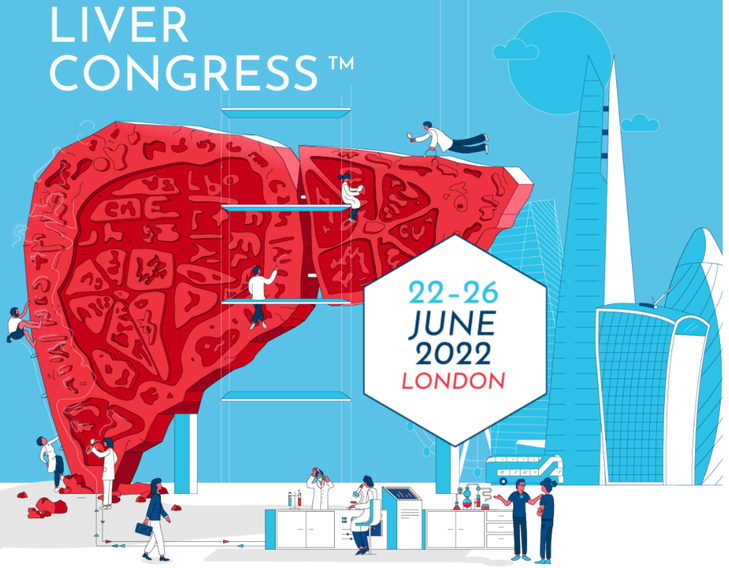

Liver stiffness assessment by MR elastography in histologically proven non-alcoholic fatty liver disease patients: a Spanish cohort

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1. MRE showed a excellent diagnostic accuracy in discriminating significant and advanced fibrosis.

2. High level of GGT may be a confounding factor in the diagnostic accuracy of MRE as it leads to overestimation of LSM by MRE.

1 Aim

To evaluate the diagnostic accuracy of magnetic resonance elastography (MRE) in staging hepatic fibrosis in patients with histologically confirmed nonalcoholic fatty liver disease (NAFLD) and analyze possible confounding factors of MRE.

2 Method

This cross-sectional analysis of a prospective cohort involved 65 patients at 'Virgen del Rocío' University Hospital (Seville), who underwent MRE, Fibroscan, APRI, FIB-4 and contemporaneous liver biopsies scored using the SAF histological scoring system. MRE versus Fibroscan, APRI, FIB-4 performances for diagnosing fibrosis were evaluated using area under receiver operating characteristic curves (AUROCs). We classified all patients into 3 groups according to the consistency between liver stiffness measurement(LSM) by MRE and histopathological findings: underestimation, concordance and overestimation group, according to the cut-off from a previous Individual patient data Meta-analyses. Univariate and multivariate analysis was performed to explore the confounding factor of MRE.

3 Conclusions

MRE is an effective, non-invasive method for detecting/staging hepatic fibrosis in NAFLD. This method showed a high diagnostic accuracy in discriminating significant and advanced fibrosis. The high GGT concentration may affect the diagnostic accuracy of MRE in staging hepatic fibrosis in NAFLD patients.

4 Acknowledgements

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4 Results

A total of 65 participants (Male = 51%, Age 59.83± 11.35yrs) completed the clinical assessment. For detecting significant and advanced fibrosis, the AUROCs of MRE were obvious higher than FIB-4, APRI. Although it was also higher than Fibroscan, it didn't reach statistical significance (Figure 1 a.b and Table 1) . Univariate and multivariate analysis showed GGT concentration was a significant factor in overestimate LSM by MRE. Age, BMI, AST and ALT did not affect MRE accuracy.

Figure 1 a.b ROC curve for MR Elastography (MRE),FIB-4,APRI and Fibroscan for diagnosis of significant(a) and advanced(b) fibrosis.

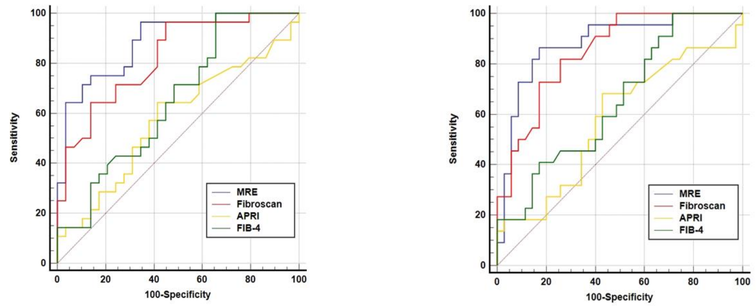

Table 1. Performance of MR Elastography (MRE),FIB-4,APRI and Fibroscan for diagnosis of Significant and Advanced Fibrosis

	For significant fibrosis		For advanced fibrosis	
	AUROC	P value	AUROC	P value
MRE	0.90[0.82-0.97]		0.90[0.81-0.98]	
Fibroscan	0.82[0.72-0.93]	0.22	0.83[0.73-0.93]	0.30
FIB-4	0.67[0.54-0.81]	<0.01	0.69[0.54-0.81]	<0.01
APRI	0.62[0.47-0.76]	<0.01	0.62[0.48-0.77]	<0.01