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#4485560 (Abstract)

CORRELATIONS BETWEEN LIVERFAST, A BLOOD-BASED NON-INVASIVE TEST, AND THE MRI ELASTOGRAPHY (MRE) FOR THE ASSESSMENT OF FIBROSIS AND THE INTRACELLULAR FAT FRACTION (ICFF) FOR THE ASSESSMENT OF STEATOSIS IN PATIENTS WITH MASLD.

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INTRODUCTION & AIM

In patients (pts) with Metabolic-dysfunction Associated Steatotic Liver Disease (MASLD), MRE is recommended for the secondary assessment of fibrosis. However, MRE has issues related to costs and referral of pts to a radiology clinic. LIVERFASt assesses liver fibrosis (LF-FIB), steatosis (LF-STE) and steatohepatitis, is reimbursed, with costs widely covered by major national insurers and government programs. LF-FIB performances for detecting fibrosis qualifies it for primary and secondary assessment of fibrosis. (Alkhouri JGLD2025) We aimed to assess in a population with established MASLD: 1/ the performance of LF-FIB to predict MRE advanced fibrosis (≥F3) and cirrhosis (F4); 2/ the correlation between LF-FIB and MRE and LF-STE and ICFF and their variance factors.

METHODS

Adult pts with MASLD were retrospectively included with LIVERFASt and MRE. MRE and ICFF have been assessed with multisequence multiplanar MRI (Siemens Skyra 3T Magnet). The recommended cut-offs to rule in/out ≥F3 and F4 stages were ≥3.63/<2.55KPa and 5/3KPa for MRE and ≥0.52/ and ≥0.75 for LF. LF scores (0.00-1.00) are calculated using 14 inputs (serum biomarkers, anthropometrics). Statistics used AUC (95%CI), correlation coefficient (R) and R2 and T-tests for medians with Wilcoxon Rank-Sum Test for difference in location.

RESULTS

54 MASLD pts were included retrospectively: 55.6% female, 68.5% BMI≥30, 24.1% ALT>50IU/l, 20.4% T2DM, mean(se) age 63(2), cholesterol 159(6) mg/dl, triglycerides 153(14)mg/dl, MRE 3.18(0.18)Kpa, ICFF 13.6(1.4)%, LF-FIB 0.50(0.05) and LF-STE 0.46(0.03).

The AUC(SE) for LF-FIB to predict MRE fibrosis F4/≥F3 were 0.73(0.09)/ 0.69(0.07) for the low MRE cut-offs and 0.77(0.06)/ 0.70 (0.08) for the high cut-offs, respectively. There were positive fair correlations between LF-FIB and MRE, R=0.47 (p<0.001), R2=0.75 and between LF-STE and ICFF, R=0.54 (p<0.0001), R2=0.71.The

median MRE(KPa) increased with each stage of LF-FIB: F0 2.01, F1 2.50, n=F2 2.95, F3 3.05 and F4 3.41. (see Fig.1a) The median ICFF% increased with each grade of LF-STE: S0 5.0%, S1 6.7%, S2 11%, S3 21.4% (see Fig.1b) MRE seems impacted by the ALT level, as for the same stage of fibrosis (as per LF-FIB), in the subgroup with ALT>50IU/l, median MREs were higher than in the ALT<50IU/l subgroup: for F0 2.46 vs 2.01 (p=0.02), F1 3.21 vs 2.20 (p=0.02), for F2 2.90 vs 3.20 (p=ns), F3 4.40 vs 2.65 (p=0.03), F4 2.4 vs 2.2 (p=ns).

(Fig.2) A similar effect on MRE has been observed with BMI.

Fig. 1a. Boxplots of MRE according to LIVERFASt fibrosis stages

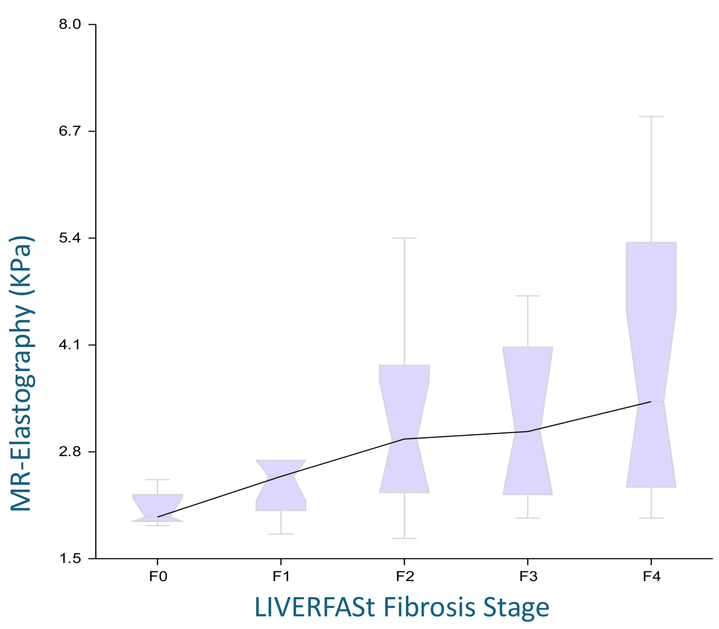


Fig. 1a. Boxplots of ICFF according to LIVERFASt steatosis grades

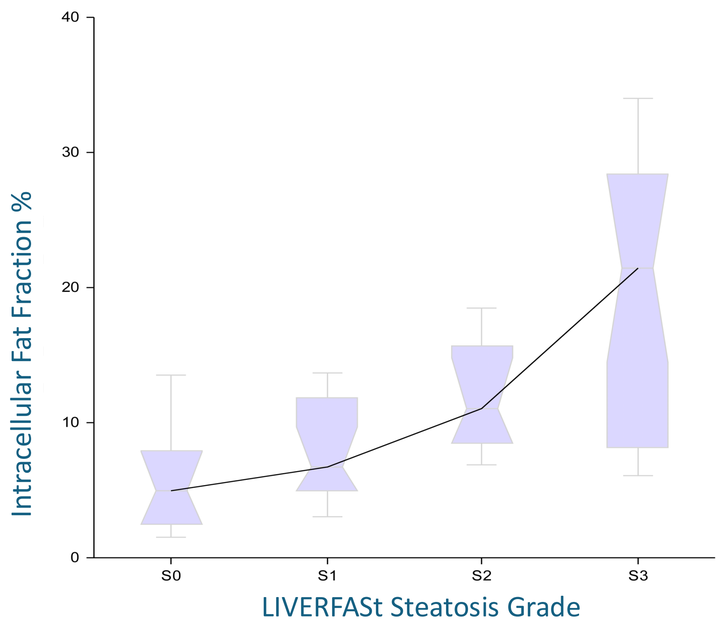
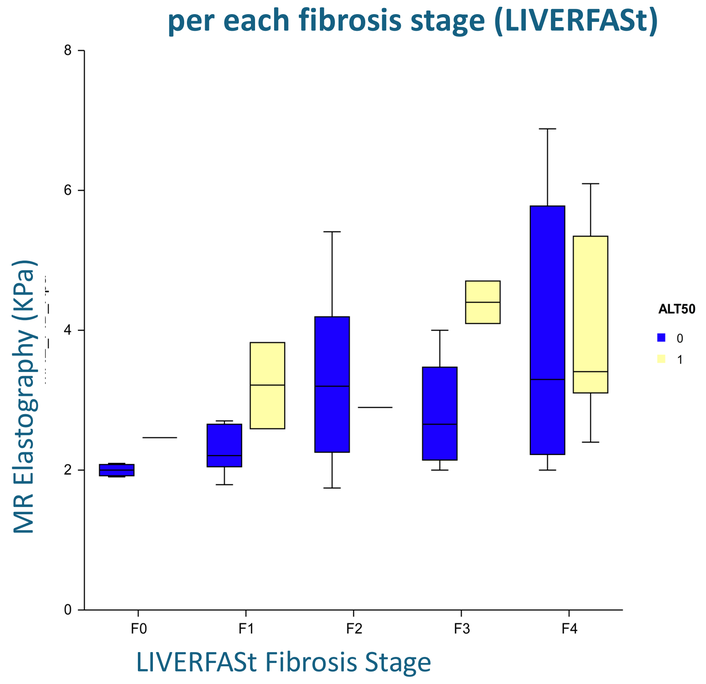


Fig. 2. Impact of ALT level on MRE per each fibrosis stage (LIVERFASt)



CONCLUSIONS

LIVERFASt is a blood-based liver test that correlates with MRE and ICFF for fibrosis and steatosis assessment that could be a readily available alternative of MRE in the secondary assessment of MASLD pts to rule in ≥F3 and F4. Since MRE assessment of fibrosis seems impacted by the ALT level, caution in the interpretation of the MRE results is needed in those with ALT higher than 50IU/l

FIBRONOSTICS