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# Repeated noninvasive liver biopsy surrogate LIVERFASt™ correlates with BMI and liver enzymes improvements

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## INTRODUCTION

- MAFLD-related morbi-mortality is increasing worldwide due to epidemics of obesity and type 2 diabetes (T2D). (2)
- **LIVERFASt™** (Fibronostics, Florida, US) is a new point-of-care proprietary technology to assess quantitatively (normalized score from 0.00 to 1.00) liver fibrosis, steatosis and steatohepatitis in MAFLD patients. (1,3)
- **LIVERFASt™** is a blood based serum biomarker that demonstrated prognostic value for liver-related events and overall mortality (1,4)

## AIMS

**To assess liver fibrosis regression rate (LFR) USING repeated LIVERFASt™ AND CORRELATIONS with IMPROVEMENTS IN clinical endpoints, body mass index BMI ≥ 10% and liver enzymes ALT ≥ 50% from baseline.**

## METHODS

Patients with repeated **LIVERFASt™** prospectively included in a tertiary hepatology center.

Clinical endpoints considered for significant improvements assessment during follow up:

- BMI decrease of more than 10% from baseline value and
- ALT decrease more than 50% from baseline value.

Significant fibrosis stage improvement was considered with each half of stage translated into 0.15 improvement in **LIVERFASt™** score.

Fibrosis Progression Rate (FPR) used time dependent statistics cox Mantel hazard ratios HR (95%CI).

## CONCLUSIONS

- **Half-stage liver fibrosis regression as presumed with LIVERFASt™ fibrosis score was significantly more likely in patients achieving ALT enzymatic activity improvement 50% or more from baseline values.**
- **A trend was observed in patients that achieving BMI improvement of 10% or more from baseline.**
- **LIVERFASt™ Fibrosis score correlates with clinical endpoints and, therefore, can be used for long-term monitoring of MAFLD patients.**

## RESULTS

### STUDY DESIGN

3.57 (max. **9.9**) yrs follow up

**N=500 MAFLD patients PRE-INCLUDED**
LIVERFASt at baseline

**N=401 MAFLD patients INCLUDED**
- having at least one repeated LIVERFASt measurements during follow-up
- N=87 up to 7 repeated LIVERFASt measurements during follow-up

LIVERFASt™

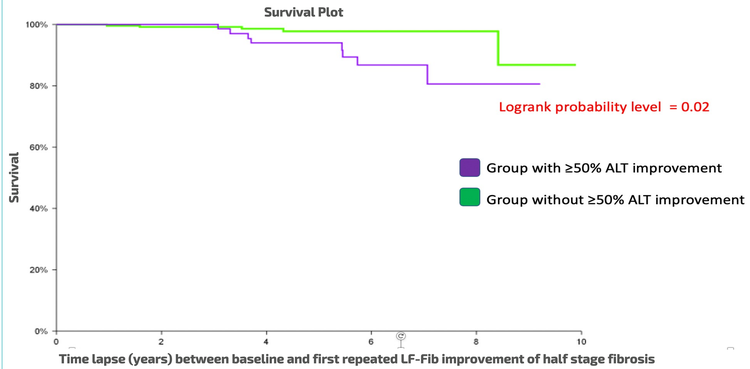

### CHARACTERISTICS OF INCLUDED PATIENTS

| N=401 | |
|---|---|
| **Male gender**, % | 44.3% |
| **Median (range) Age** | 56 (21-77) |
| **Presumed Fibrosis stages** | F0 45%<br>F1 29<br>F2 %<br>F3 6%<br>F4 12%<br>8% |
| **Presumed fibrosis regression** according to LIVERFASt more than half stage (≥0.15) from baseline | 13/401 (3.24%) |
| **LIVERFASt median score (se)** | 0.27 (0.03) |
| **Clinical endpoints** (improvements from baseline) | ALT ≥50% 109/401 (27.2%)<br>BMI ≥10% 75/401 (18.7%) |
| Median follow-up | 9.9 years |
| Median (range) follow up (baseline to the last repeated LF-Fib) | 3.57 years (3-9.9) |

### CUMULATIVE SURVIVALS OF PRESUMED LIVER FIBROSIS with LIVERFASt

**Half-stage liver fibrosis improvement as per LIVERFASt was more likely among those patients that achieved ALT regression of 50% or more from baseline:**

**Cox Mantel Hazard Ratios [HR(95%CI)]:**
3.47 (1.08-11.19) in the group with ALT regression lesser than 50% from baseline
versus
0.29 (0.09-0.93) in the group with ALT regression 50% or more
(logrank probability level 0.02)




MAFLD patients that achieved 10% or more in BMI improvement from baseline presented a trend to improve liver fibrosis (half stage) but without statistical significance HR (95%CI) 1.78 (0.38-8.39) vs 0.56 (0.12-2.64) in the group that not achieved a BMI improvement of ≥10% (logrank probability level =0.37).

## REFERENCES

1. Decraecker M, Dutartre D, Hiriart JB, Irles-Depé M, Chermak F, Foucher J, de Lédinghen V. Long-term prognosis of patients with metabolic (dysfunction)-associated fatty liver disease by non-invasive methods. Aliment Pharmacol Ther. 2022 Mar;55(5):580-592. doi: 10.1111/apt.16760. Epub 2022 Jan 3. PMID: 34978351.
2. European Association for the Study of the Liver (EASL); European Association for the Study of Diabetes (EASD); European Association for the Study of Obesity (EASO). EASL-EASD-EASO Clinical Practice Guidelines for the management of non-alcoholic fatty liver disease. J Hepatol. 2016 Jun;64(6):1388-402. doi: 10.1016/j.jhep.2015.11.004. Epub 2016 Apr 7. PMID: 27062661.
3. European Association for the Study of the Liver. Electronic address: easloffice@easloffice.eu; Clinical Practice Guideline Panel; Chair:; EASL Governing Board representative:; Panel members:. EASL Clinical Practice Guidelines on non-invasive tests for evaluation of liver disease severity and prognosis - 2021 update. J Hepatol. 2021 Sep;75(3):659-689. doi: 10.1016/j.jhep.2021.05.025. Epub 2021 Jun 21. PMID: 34166721.
4. https://www.. fibronosticscom/

## CONTACT INFORMATION

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## DISCLOSURES

MD; none; JBH: none; MID: none; FC: none; JF: none ; VDL : Fibronostics (consultancy)

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