LIVERFAST (L-FAST) identifies advanced (F3F4, AF) and clinically significant fibrosis (F2-F4, CSF) especially well with Fibroscan in MAFLD patients (pts) from a tertiary hepatology center.

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Aims

To retrospectively perform the outcome of one-step strategy with two noninvasive combinations, the standard-of-care, FIB-4 & LSM, versus LIVERFAST-Fibrosis & LSM, for the identification of histological AF and CSF in MAFLD pts.

- As defined by Eslam M. et al. (J. Hepatol. 2020, MAFLD: metabolic-associated fatty liver disease

Background

- The identification of patients (pts.) with advanced fibrosis (AF, F3F4) and clinically significant fibrosis (CSF, F2-F4) is mandatory in the specialty settings as they require further assessment or specific surveillance or may benefit from targeted interventions.
- LIVERFAST is an an-AI-based tool that offers an overall assessment of the severity of presumed steatosis, activity, fibrosis (SAF) histological scores for MAFLD.
  - Demonstrated long-term prognostic value in MAFLD pts for liver-related morbidity and mortality
  - Outperformed ELF test for CSF in a miscellaneous cohort
  - Outperformed FIB-4 in patients with type 2 diabetes

Recently released clinical practice guidelines stated that the primary risk assessment could be done with FIB-4 and those with CSF risk should be referred for secondary risk assessment with either a standard-of-care, liver stiffness measurement (LSM) with Fibroscan, or other noninvasive test.

Method

- We extracted data (N=583 subjects) from a tertiary center, data collected between 2003 and 2020
- Selected subjects aged 18 years or more without missing data for FIB-4, LiverFAST and with applicable LSM
- Among them, patients with data have been selected (N=200) and with lesser than 6 months time lapse between biopsy and noninvasive biomarkers and biopsy sizes ≥20mm.

Results

- LSM by Fibroscan (Echosens, Paris, France)
  - Quality criteria: IQ/Median±SD, Success rate±0%, 10 valid LSM
  - Variability in 3 stages of NASH patients paired measurements: one stage difference in 32%, 1 stage difference in 60%, 2 stages different in 10%
- LSM vs. fibrosis stage: Cytosol (AFL > F1-LSM, non fasting, M3 (70mm, BV±50), high-blood pressure
- Combines blood biomarkers (GGT, bilirubin, haptoglobin, albumin, prothrombin, platelet count, age, AST and ALT) to generate three quantitative scores (fibrosis, steatosis and activity) and a conversion into a category
- Can be used in fasting or non-fasting patient

LiverFAST (Fibroscan, Florida, US)
- AI computer aided proprietary algorithm for assessing fibrosis, steatosis, activity in MAFLD pts.
- Threshold for FIB-4, Fibroscan, LiverFAST
- Liver diagnostic performance for coronary in T2D

- Algorithm: platelet count, age, AST and ALT
- Dual cut-off for advanced fibrosis (F3,F4)

LiverFAST can palliate to FIB-4 false negatives
(5/172 (3%) of patients with FIB-4 in the Gray zone (1.8-2.2) staged F4/Fibroscan, FIB-4 >6.0/Fibroscan > F4) are identified as F4/Fibroscan with LiverFAST

LiverFAST identifies F2F3F4 patients especially well together with LSM

Conclusions

- The combination LIVERFAST–Fibrosis & LSM (Fibroscan) identified advanced fibrosis and clinically significant fibrosis with the highest confirmatory rate with liver biopsy (NPS)
- Using a lower than 30% LSM cut-off, a higher number of patients with advanced fibrosis were identified
- According to the LSM cut-off that is used, between 50% and 150% more patients were identified with advanced fibrosis (F3F4) than with the combination between FIB-4 & LSM.
- LIVERFAST can reveal 50% of FIB-4 grey zone missed cases and palliate the false negative rate of FIB-4

References

- Decreaner M. et al., AIT 2022
- de Ledinghen V. et al., Hepatology 2022

FIB-4 Index

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