EASL-EASD-EASO Clinical Practice Guidelines

2024 Update

Management of metabolic dysfunction-associated steatotic liver disease (MASLD)

Recommendations related to

FibroScan® by echosens

Foreword

VCTE™, our original and proprietary FibroScan® technology to measure liver stiffness, **is recommended with the specific cut-off value of 8 kPa** in the stepwise strategy **for non-invasive assessment of the risk for advanced fibrosis** in the new EASL–EASD–EASO Clinical Practice Guidelines on the management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD).

Key takeaways

This new joint EASL-EASD-EASO Clinical Practice Guidelines provides an update on definitions, prevention, screening, diagnosis and treatment for MASLD.

It's essential to identify liver steatosis, a key feature of MASLD, that should lead to assessing advanced liver fibrosis – a predictor of liver-related outcomes.

- **Given the advancements in treatment options, it's crucial to identify at-risk individuals with MASLD early.** With these tools at our disposal, we can proactively influence the course of the disease, and potentially prevent significant clinical events.
- **To identify MASLD cases with liver fibrosis, using non-invasive tests should be applied.** Focus on individuals who have cardiometabolic risk factors, abnormal liver enzymes, and/or radiological signs of hepatic steatosis–especially if they also have type 2 diabetes (T2D) or obesity with other metabolic risk factors.
- **Detecting fibrosis early and managing it appropriately can help prevent progression to cirrhosis** and its related complications and may justify screening in at-risk populations.
- **A stepwise approach using the score FIB-4 and, sequentially, VCTE™ (Vibration Controlled Transient Elastography)** or alternative test, **is suitable to rule-out/in advanced fibrosis.**
- **Adults with non-cirrhotic MASH and significant liver fibrosis** (stage ≥2) should be considered for a **MASH-targeted treatment with Resmetirom.**

- LSM by VCTE™ cut-off values at 8 kPa & 12 kPa are recommended to rule-out/in advanced fibrosis
- CAP cut-off values at 248 dB/m, 268 dB/m & 280 dB/m are recommended to identify steatosis grading ≥S1, ≥S2 & =S3 respectively
- FAST cut-off values at 0.35 & 0.67 are recommended to rule-out/in at-risk "MASH"
- LSM by VCTE™ ≥10 kPa & FAST >=0.67 could be considered to initiate treatment in individuals with MASLD who are non-cirrhotic with Resmetirom, if approved locally

FibroScan® by echosens

FibroScan® related recommendations and statements

Screening, case-finding, diagnosis and monitoring

Recommendations

- In patients at risk of MASLD (with T2D or obesity + >=1 cardiometabolic risk factor(s) or persistently elevated liver enzymes), a multi-step approach is recommended *(detailed in Fig. 1)*: First, an established non-patented blood-based score, FIB-4, should be used. Thereafter, established VCTE™ or alternative test, is recommended as a second step to further clarify the fibrosis stage if fibrosis is still suspected or in high-risk groups (LoE 2, strong recommendation, strong consensus)

- Blood biomarker-derived scores and elastography should be used to exclude advanced fibrosis, while elastography is better suited to predict advanced fibrosis (LoE 2, strong recommendation, consensus)

- **The thresholds of FibroScan® parameters and scores for ruling out/in certain features of MASLD are listed below:**
  - **LSM by VCTE™ cutoff value at 8 kPa to rule out advanced fibrosis**
  - **LSM by VCTE™ cutoff value at 12 kPa to rule in advanced fibrosis**
  - **FAST cutoff value at 0.35 to rule out "at-risk MASH"**
  - **FAST cutoff value at 0.67 to rule in "at-risk MASH"**
  - **LSM by VCTE™ has high prediction of liver-related outcomes**

- Risk stratification can help in optimizing strategies for monitoring individuals at higher risk of hepatocellular carcinoma *(Table 1)* (LoE 4, weak recommendation, strong consensus)
  - **Individuals with LSM by VCTE™>10 kPa and increasing change in LSM by VCTE™ over time is listed as one of the factors associated with a higher risk of HCC occurrence in MASLD**

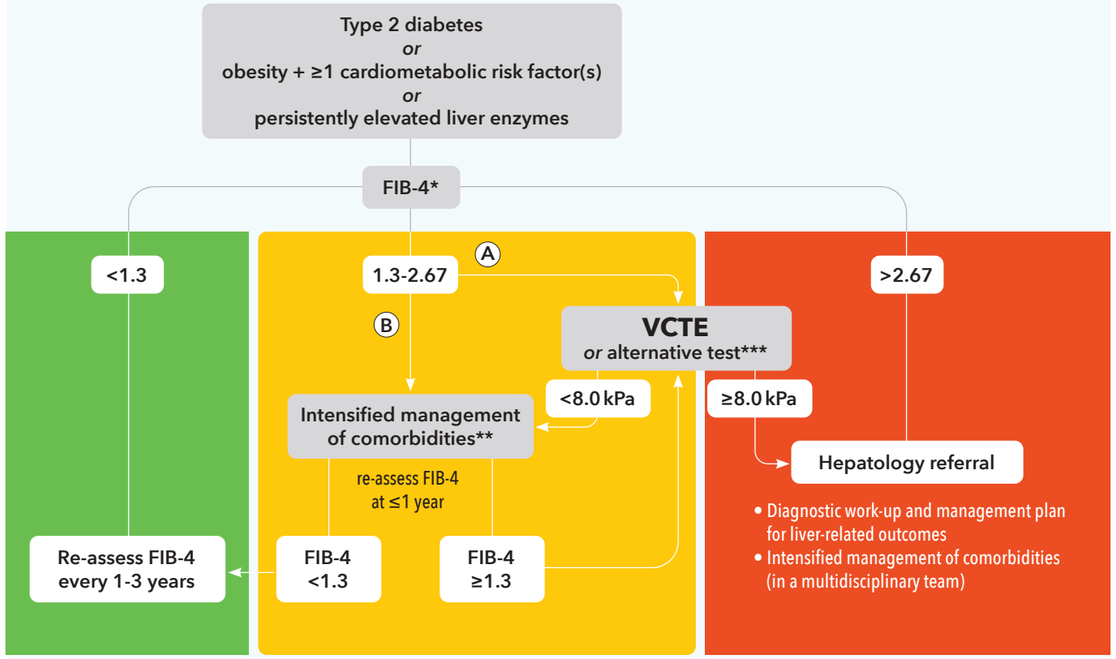
Statements

Some blood biomarker-based scores may help to identify individuals with MASH at risk of disease progression (LoE 3, consensus)

- **FAST cutoff value at 0.67 to rule in "at-risk MASH"**

Blood biomarker-derived scores and elastography can help in risk stratification for clinical outcomes, as observational studies have identified thresholds related to liver-related outcomes and mortality (LoE 3, strong consensus)

FIGURE 1 **Proposed strategy for non-invasive assessment of the risk for advanced fibrosis and liver-related outcomes in individuals with metabolic risk factors or signs of SLD. Individuals with (A) T2D or (B) abdominal obesity and ≥1 additional cardiometabolic risk factor(s) or (C) persistently elevated liver enzymes should undergo a multi-step diagnostic process, as indicated in the figure, to identify individuals with MASLD and advanced fibrosis. The algorithm can also be applied in case of incident finding of steatosis. This strategy is intended to identify individuals at risk of developing liver-related outcomes.**



**FIB-4 thresholds valid for age ≤65 years (for age>65 years: lower FIB-4 cut-off is 2.0)*
*** e.g. lifestyle intervention, treatment of comorbidites (e.g. GLP1RA), bariatric procedures*
****e.g. MRE, SWE, ELF, with adapted thresholds*
(A) and (B) are options, depending on medical history, clinical context and local resources

FibroScan® by echosens

FibroScan® related recommendations and statements

Treatment of MASLD: Pharmacological therapy

Recommendations

- Treatment with Resmetirom, if approved locally, may be considered for individuals with MASLD who are non-cirrhotic and with documentation of either: (A) advanced fibrosis; (B) at-risk steatohepatitis with significant fibrosis (by liver biopsy, when available, or by non-invasive panels validated for that purpose); or (C) risk of adverse liver related outcomes (e.g. by elastography- or biomarker defined thresholds) (LoE 3, open recommendation, consensus)
  - **LSM by VCTE™ ≥ 10 kPa is the well-validated threshold to define risk of advanced fibrosis or liver-related outcome**
  - **FAST cutoff value at 0.67 to rule in "at-risk MASH"**

End-stage liver disease and liver transplantation

Recommendations

- **LSM by VCTE™ ≤15 kPa** plus platelet count ≥150 × 10^9 /L may be used to rule out clinically significant portal hypertension (CSPH) in adults with MASLD (LoE 3, weak recommendation, strong consensus)
- In adults with compensated advanced chronic liver disease but **LSM by VCTE™ ≥20 kPa** and/or platelet count <150 x 10^9/L, an upper gastrointestinal endoscopy should be performed to screen for varices unless they already fulfil the criteria to initiate non-selective beta-blockers (LoE 3, strong recommendation, strong consensus)

Statements

The threshold of LSM by VCTE™ ≥25 kPa to rule in CSPH is only applicable to non-obese (BMI<30 kg/m^2) adults with MASLD; while obesity can confound LSM by VCTE™, current evidence is insufficient to suggest the optimal non-invasive test to rule in CSPH in adults with MASLD and obesity (LoE 3, strong consensus)

TABLE 1 **Factors associated with a higher risk of HCC occurrence in MASLD**

Factor(s)
Presence and duration of T2D, obesity or both
Older age
Concurrent alcohol intake and/or smoking
Individuals with FIB–4 >3.25
Individuals with LSM by VCTE™ >10 kPa and increasing change in LSM by VCTE™ over time*

** Petta S, Sebastiani G, Vigano M, et al. Monitoring occurrence of liver related events and survival by transient elastography in patients with nonalcoholic fatty liver disease and compensated advanced chronic liver disease. Clin Gastroenterol Hepatol 2021;19(4):806–815 e5*

Acronyms

- VCTE™: Vibration-Controlled Transient Elastography, original and proprietary FibroScan® technology
- CAP™: Controlled Attenuation Parameter, original and proprietary FibroScan® technology
- BMI: Body Mass Index
- CSPH: Clinically Significant Portal Hypertension
- ELF: Enhanced Liver Fibrosis
- FIB-4: FIBrosis-4 index
- GLP1RA: Glucagon-Like Peptide-1 Receptor Agonist
- LoE: Level of Evidence
- LSM: Liver Stiffness Measurement
- MRE: Magnetic Resonance Elastography
- MASLD: Metabolic dysfunction-Associated Steatotic Liver Disease
- MASH: Metabolic dysfunction-AssociatedSteatoHepatitis
- NAFLD: Non-Alcoholic Fatty Liver Disease
- SLD: Steatotic Liver Disease
- SWE: Shear Wave Elastography
- T2D: Type 2 Diabetes

because liver health matters

References

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 on the Management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). Obes Facts. 2024 Jun 7:1-70. doi: 10.1159/000539371. Epub ahead of print. PMID: 38852583.

European Association for the Study of the Liver (EASL). Electronic address: easloffice@easloffice.eu; European Association for the Study of Diabetes (EASD); European Association for the Study of Obesity (EASO); European Association for the Study of the Liver (EASL). EASL-EASD-EASO Clinical Practice Guidelines on the management of metabolic dysfunction-associated steatotic liver disease (MASLD). J Hepatol. 2024 Jun 5:S0168-8278(24)00329-5. doi: 10.1016/j.jhep.2024.04.031. Epub ahead of print. PMID: 38851997.