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Diagnosis and Management of Nonalcoholic Fatty Liver Disease (2023)

About the Guideline

- Expert providers commissioned by the American Association for the Study of Liver Diseases (AASLD) developed this guidance document as an update to the 2018 practice guidance for the diagnosis and management of nonalcoholic fatty liver disease.
- These evidence-based guidance statements include guidance on the diagnosis, clinical assessment, and management of both nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH).

Key Clinical Considerations

Become familiar with the recommendations and best-practice statements provided in this guideline, especially if you work in an acute care setting.

Definitions

- NAFLD is defined as hepatic steatosis that is evident on imaging or in histology, with other causes having been ruled out such as significant alcohol intake, the use of steatogenic medications, starvation, or the presence of hereditary disorders.
- NAFLD is divided into two categories:
    - Nonalcoholic fatty liver (NAFL): the presence of hepatic steatosis that may be associated with mild inflammation.
    - Nonalcoholic steatohepatitis (NASH): the presence of hepatic steatosis and inflammation with liver cell injury and inflammation, which may be present with or without fibrosis.
        - NASH has a higher liver-related mortality than NAFLD.
        - Cryptogenic cirrhosis is the progression of NASH.
- The Fibrosis-4 (FIB-4) index is a risk assessment tool that uses a score derived from available clinical and laboratory data.

Common Comorbid Conditions Associated with NAFLD

- Obesity
- Type 2 diabetes mellitus (T2DM)
- Dyslipidemia
- Hypertension
- Polycystic ovary syndrome
- Hypothyroidism
- Hypogonadism
- Demographic characteristics (age, gender, and ethnicity)
- Obstructive sleep apnea
- Cardiovascular disease (CVD) (the most common cause of death in patients with NAFLD and NASH)
- Chronic kidney disease

Screening for Risk Stratification and Advanced Fibrosis

- Routine screening for NAFLD for the general population is not advised.
- High-risk patients (such as patients with T2DM, medically complicated obesity, moderate alcohol intake, or a family history of cirrhosis) should be screened for advanced fibrosis.
- Primary risk assessment with FIB-4 should be performed for all patients with hepatic steatosis or clinically suspected NAFLD based on the presence of metabolic risk factors and obesity.
    - This should be repeated every 1 to 2 years for patients with pre-DM, T2DM, two or more metabolic risk factors, or evidence of hepatic steatosis on imaging.
- If FIB-4 is 1.3 or higher, vibration-controlled elastography, magnetic resonance elastography, or enhanced liver fibrosis (ELF) test may be used to exclude advanced fibrosis.
- An increased ELF or an elevated FIB-4 followed by elevated liver stiffness may be used as a sequential strategy to identify advanced fibrosis.
- Patients with suspected advanced NASH or contradictory noninvasive tests should be referred to a specialist for evaluation, management, and/or further diagnostic testing if being seen in a nongastroenterology or nonhepatology setting.
- An ELF score above 11.3 has been associated with hepatic decompensation in the setting of advanced fibrosis, therefore, prompt screening should be performed.

Assessment of NAFLD

- Aminotransferase levels should not be used alone to exclude the presence of NASH with clinically significant fibrosis, as levels are often normal in patients with advanced liver disease due to NASH.
- Alanine aminotransferase (ALT) levels greater than 30 units/liter should be considered abnormal.
- Standard ultrasound is not recommended as a tool to identify hepatic steatosis.
- As a point-of-care technique, controlled attenuation parameter (CAP) can be used to identify steatosis. Magnetic resonance imaging-proton density fat fraction (MRI-PDFF) can also be used in addition to CAP to quantify steatosis.

Disease-Modifying Interventions for Patients with NAFLD

- A calorie deficit diet should be prescribed for patients who are overweight or obese. Encourage diets with high fiber and unsaturated fats and limited in carbohydrates and saturated fats.
- Strongly encourage patients to increase their activity level as much as possible.
- Consider bariatric surgery as a therapeutic option for patients who meet criteria.

Off-Label Use of Approved Medications for Comorbid Conditions

- At this time, there are no FDA-approved medications to treat NAFLD; however, medications approved to treat associated comorbidities may have potential benefits in NAFLD and may be considered, if appropriate.
- For patients with NASH, consider the use of semaglutide for the improvement of NASH and the cardiovascular benefits.
- For patients with NASH and T2DM, consider the use of pioglitazone for the improvement of NASH.
- For select patients with NASH who do not have diabetes, consider the use of vitamin E for the improvement of NASH.

- Statin medications are recommended to reduce CVD risks in patients with NAFLD.
    - Statin use can be considered with close monitoring in patients with decompensated cirrhosis and a high CVD risk.
- To manage hypertriglyceridemia, lifestyle changes in conjunction with omega-3 fatty acids, fibrates, or icosapent ethyl supplementation are recommended.
- Semaglutide, pioglitazone, and vitamin E have not been shown to have an antifibrotic benefit and have not been well studied in patients with cirrhosis.
- Metformin, ursodeoxycholic acid (UDCA), dipeptidyl peptidase-4 (DPP-4), statins, and silymarin have not demonstrated a meaningful benefit as a treatment for NASH and should not be utilized.

Role of Alcohol

- Patients with NAFLD should be assessed for alcohol consumption on a regular basis.
- Patients with clinically significant hepatic fibrosis should abstain from alcohol consumption.

Additional Considerations

- Histological improvement in disease activity may be indicated by an improvement in ALT or by imaging showing a reduction in liver fat content.
- Counsel first-degree relatives of patients with NASH regarding their increased individual risk and offer screening for advanced hepatic fibrosis.

Reference

Rinella, M. E., Neuschwander-Tetri, B. A., Siddiqui, M. S., Abdelmalek, M. F., Caldwell, S., Barb, D., Kleiner, D. E., & Loomba, R. (2023). AASLD Practice Guidance on the clinical assessment and management of nonalcoholic fatty liver disease. *Hepatology (Baltimore, Md.)*, *77*(5), 1797–1835. https://doi.org/10.1097/HEP.0000000000000323