WELCOME TO
AK LIVER DISEASE ECHO

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

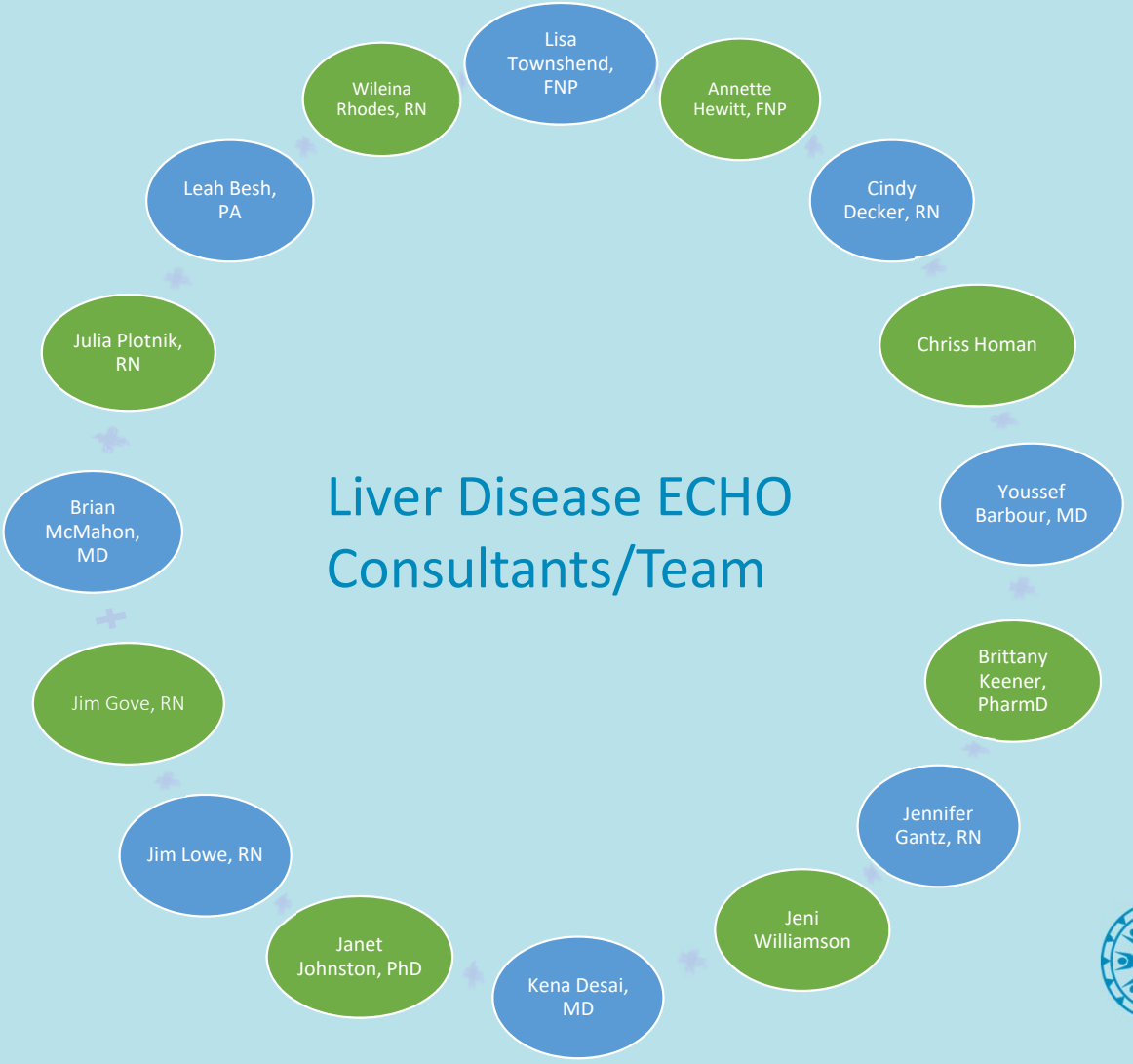
NPAIHB
Indian Leadership for Indian Health

This project is supported by a grant from the
Northwest Portland Area Indian Health Board and funding is provided
from the HHS Secretary's Minority HIV/AIDS Fund.

What we do

- Provide education related to liver disease management
  - Didactic presentations
  - Patient case presentations and questions
  - Expert panelist case review
- 2023 Theme: How You Can Help Reduce Liver Disease Mortality and Morbidity
  - addressing challenges to HCV screening and linkage to care
  - screening for metabolic associated fatty liver disease
  - managing cirrhosis
  - safe medication prescribing, and
  - nutrition for liver health

Liver Disease ECHO Consultants/Team



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Welcome to AK Liver Disease ECHO

Approved Provider Statements:

JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Alaska Native Medical Center (ANMC) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Contact Hours:

ANMC designates this activity for a maximum of 12 contact hours, including 3 total pharmacotherapeutics contact hours, commensurate with participation.

Financial Disclosures:

Youssef Barbour, MD & Lisa Townshend-Bulson, APRN / faculty for this educational event, are primary investigators in an ANTHC sponsored hepatitis C study funded in part by Gilead Sciences. All of the relevant financial relationships listed have been mitigated.

Requirements for Successful Completion:

To receive CE credit please make sure you have actively engaged in the entire activity, your attendance is recorded by the facilitator, and complete the course evaluation form found here: https://forms.gle/R8vibUZgMbRcoScw9.

For more information contact
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Metabolic Associated Fatty Liver Disease and FIB4

Youssef Barbour M.D

Pretest

- Non invasive tests are best used to
- A- Diagnose cirrhosis etiology
- B- Diagnose NASH
- C- Rule out advanced fibrosis
- D- Rule out viral and alcohol liver diseases

Introduction

- NAFLD is the most common chronic liver disease, with prevalence around 25% of adult population
- NAFLD patients with advanced fibrosis are at the highest risk of developing cardiovascular and cirrhosis-related complications.
- Liver biopsy has hitherto been considered the reference method for evaluation of hepatic steatosis and fibrosis stage
- Non-invasive tests (NITs) for assessment of steatosis and fibrosis stage, including serum based algorithms and US- and MRI based methods, will play an increasing role in the management of NAFLD patients

Non-invasive testing

Steatosis

- **Serum-based steatosis markers:**
  - A- Fatty liver index (FLI)
  - B- Hepatic Steatosis index (HIS)
  - C- NAFLD liver fat score (NAFLD-LFS)
  - D- SteatoTest
  - E- visceral Adiposity index (VAI)
  - F-Triglyceride x glucose (TyG) index
  - G- lipid accumulation product (LAP)
- **US:** limited sensitivity for mild (<20%) steatosis
- **CAP:** affected by presence of obesity and DM
- **CT:** limited sensitivity for mild (<30%) steatosis
- **MRI-PDFF:** sensitivity and specificity 93% and 94%

Fibrosis

- **Serum-based biomarkers:**
  - FIB-4
  - NFS
  - Enhanced liver fibrosis (ELF)
  - FibroTest (FibroSure)
  - FibroMeter
  - ADAPT (algorithm)
  - LINKI (algorithm)
  - Hepamet fibrosis score
  - dAAR (Cox regression model)
- **US-based methods:**
  - VCTE
  - Shear wave elastography (SWE)
  - Acoustic radiation force impulse (ARFI)
- **Magnetic resonance-based methods:**
  - MRE

Clinical implications:

- **Should we screen?**
- **T2 DM** has been shown to be the condition associated with the highest risk of increase LSM: prevalence of liver stiffness > 9 kPa was approximately 9% In patients with diabetes but no liver steatosis, and it reached 17.2% in patients with both diabetes and liver steatosis
- **What to use to screen**:
- **Conventional US** is currently recommended as the first-line tool for the diagnosis of steatosis in clinical practice understanding its limitation, CAP is a promising technique

Which method should be used to identify advanced fibrosis

- **FIB-4** and **NFS** are non-patented and widely available tests.
- **FIB-4** is easier to calculate since it is composed of only 3 serum-based parameters and the subject's age, and thus may be the most suitable for screening purposes.
- Both **NFS** and **FIB-4** have high NPP (>90%), however, their PPV for confirming advanced fibrosis is modest (<70%). Moreover, approximately one-third of patients fall in between the lower and upper cut-offs, resulting in undetermined results.
- Due to lower PPV, a high **NFS** and **FIB-4** score should be followed by a second-line confirmatory test (like Fibroscan, or specialized blood test)
- The 2 most validated patented serum fibrosis biomarkers are **FibroMeter** and **ELF**, their diagnostic accuracy is similar to that of FIB-4 and NFS or only slightly higher, however high costs and limited availability limit the widespread application of these tests in clinical practice

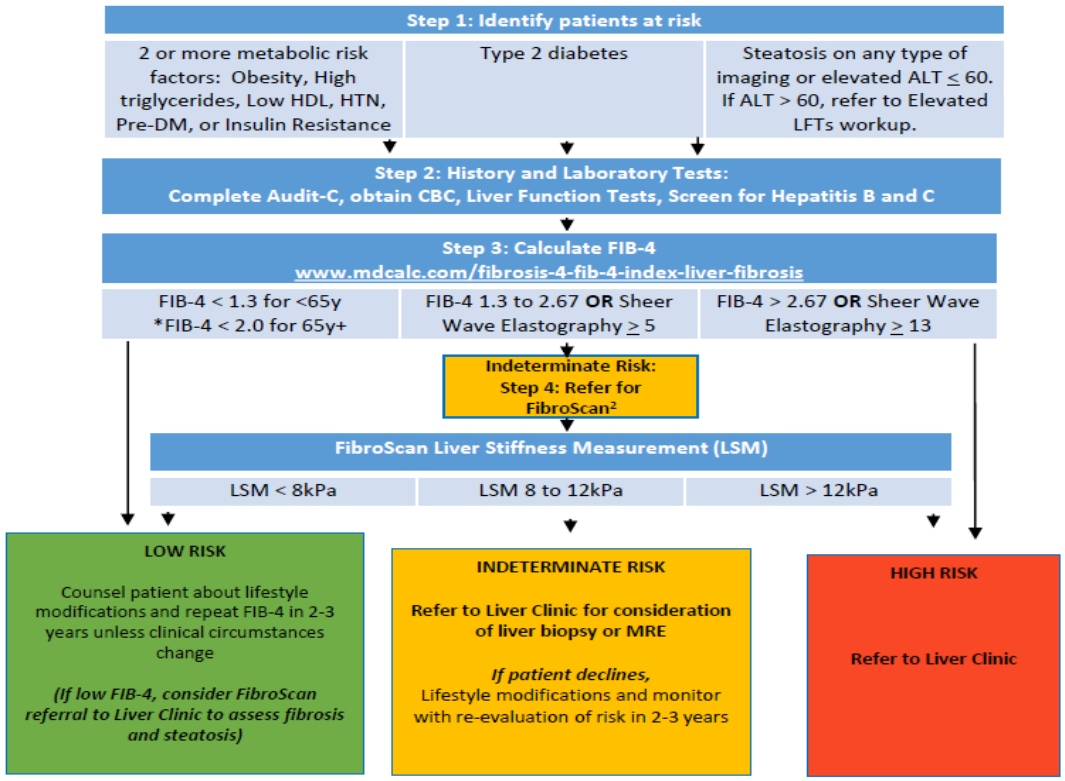
VCTE, MRE

- VCTE is the most widely available device for LSM with the largest amount of data in the NAFLD setting.
- Using 8 kPa score, the NPV>90%, however, the PPV to confirm advanced fibrosis is not sufficiently high to avoid liver biopsies in many NAFLD patients.
- MRE has superior diagnostic accuracy compared to US-based elastography technique. However, the use of MRE is limited to tertiary specialized centers because of its high cost and the need for advanced equipment

ANTHC algorithm

METABOLIC ASSOCIATED FATTY LIVER DISEASE[1] (MAFLD) Workup:

Screening Patients with Possible Fatty Liver for Advanced Fibrosis



Footnotes:

[1]Metabolic associated fatty liver disease (MAFLD) is also known as nonalcoholic fatty liver disease (NAFLD)

[2]Proprietary commercially available blood test such as FibroSure™ or FibroTest ™ may be considered for patients with indeterminate or high risk based on FIB-4 where FibroScan unavailable

This algorithm was adapted from: Kanwal, et. Al. Clinical Care Pathway for the Risk Stratification and Management of Patients with Nonalcoholic Fatty Liver Disease. Gastroenterology. 2021; https://doi.org/10.1053/j.gastro.2021.07.049

Evolving non-invasive Fibrosis assessment

- **Genetic markers**:
  - PNPLA3
  - TM6SF2
  - GCKR
  - MARC1
  - HSD17B13
  - LPIN1
  - UCP2
  - IL-28B
  - KLF6
  - MERTK
- **Omics-based markers**:
  - Proteomics
  - Metabolomics
  - Lipidomics
- **RNA biomarkers**:
  - microRNAs
- **Gut microbiota**

Thank you!

Additional learning opportunities

- AK ID ECHO: HCV, HIV, PrEP, STIs
  - Second Tuesday of every month from noon-1:00PM AKST
    - 1CE/CME offered per session
  - anthc.org/ak-id-echo
- LiverConnect Webinar Program
  - Second Tuesday of every month 8:00-9:00AM AKST
    - Full hour didactic topics on Liver Disease and related topics 1CE/CME offered
  - anthc.org/what-we-do/clinical-and-research-services/hep/liverconnect

AK Liver Disease ECHO – Team Contacts

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