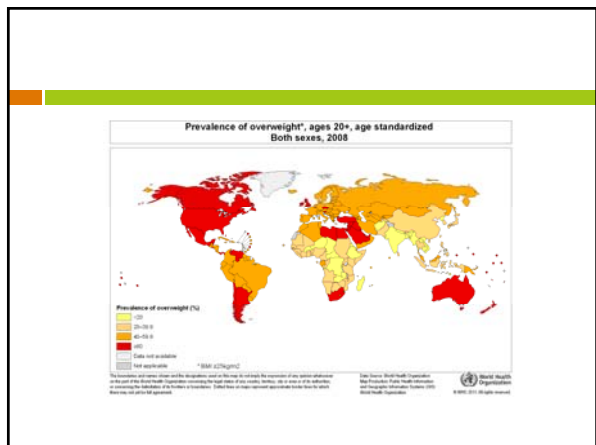
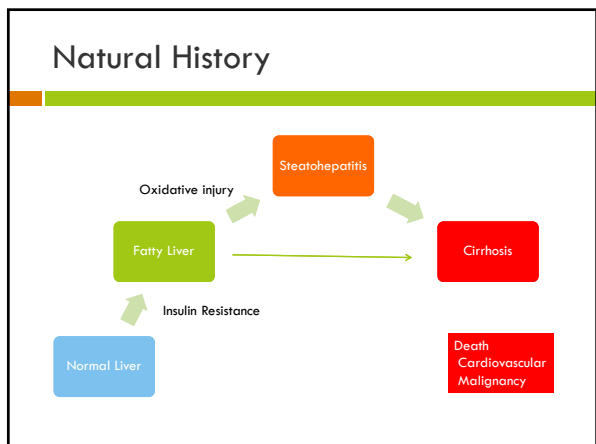


NAFLD

Vijey Selvarajah, Nov 21 2014





Definition:

- Requires ALL of
 - Demonstration of hepatic steatosis by imaging or biopsy
 - Exclusion of significant alcohol consumption
 - Exclusion of other causes of hepatic steatosis

AASLD Guidelines, 2012

Imaging

- Ultrasound
 - Sens 85, spec 84%



Radiopedia.org

Imaging

- Ultrasound
 - Sens 85, spec 84%
- CT
 - Poor sens, 90+ spec

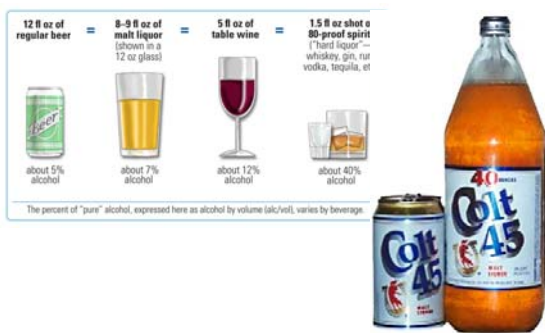


Radiopedia.org

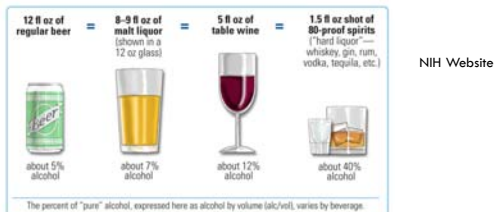
Imaging

- Ultrasound
 - Sens 85, spec 84%
- CT
 - Poor sens, 90+ spec
- MRI
 - 90% sens, poor spec

Alcohol



Alcohol



- >14 drinks per week in males and >10 drinks per week in females

AASLD Guidelines

Alternate causes of steatosis

- Alcohol use
- Hepatitis C
- Medications
 - MTX, tamoxifen, glucocorticoids, anti-HIV, valproic acid
- Less commonly:
 - Starvation, parenteral nutrition
 - HEELP
 - Wilsons disease

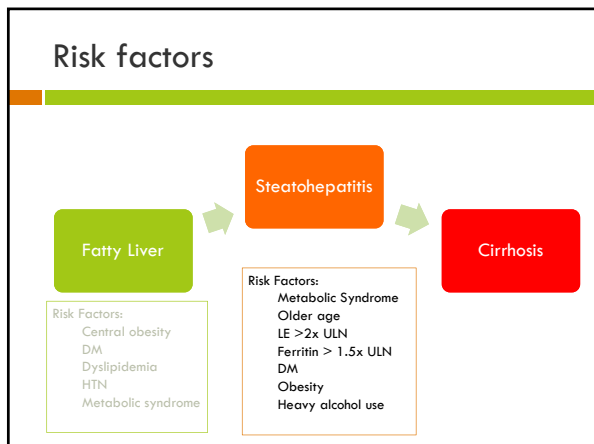
Other causes of elevated LE

- Anti-HCV antibody
- HBsAg, HBsAb
- Anti-HAV
- Ferritin, TIBC
- +- Quantitative Ig, anti-Actin, Ceruloplasmin, alpha 1 antitrypsin, anti-mitochondrial

Risk factors



- Risk Factors:
- Central obesity
 - DM
 - Dyslipidemia
 - HTN
 - Metabolic syndrome



Clinical Considerations

- Most asymptomatic, discovered incidentally
- Minority:
 - Fatigue, malaise, vague RUQ pain
- Hepatomegaly: 5%
- Stigmata of chronic liver disease
 - Suggests advanced liver disease

Clinical Considerations

- Can have mild to moderate degree of LE elevation
- Normal LE do not exclude NAFLD
- ALP can be 2-3x ULN
- Ferritin > 1.5 ULN is associated with risk of progression of fibrosis

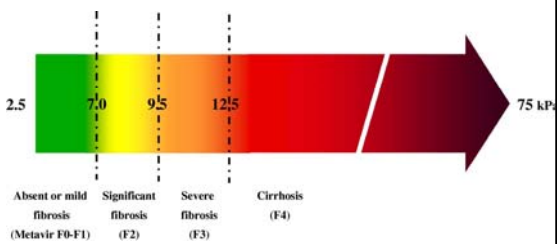
Liver Biopsy

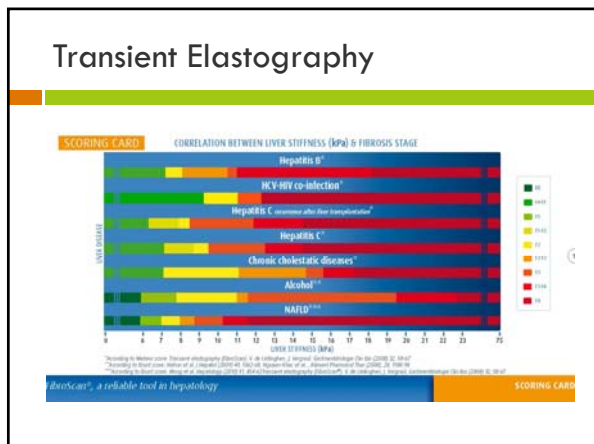
- In minority of cases
 - Can differentiate between NAFL and NASH
 - Can determine degree of fibrosis
 - Can exclude alternate etiologies of liver disease
- Consider in patients at risk of advanced liver disease
 - Ferritin > 1.5x ULN
 - Peripheral stigmata of liver disease, cytopenia, thrombocytopenia, splenomegaly

Transient Elastography



Transient Elastography





- ### Clinical Considerations
- Cardiovascular disease
 - Independently associated with NAFLD from NHANES data
 - Other associations:
 - OSA, PCOS, hypothyroidism

- ### Management
- Vaccinations
 - HAV and HBV in all
 - Pneumonia
 - Aggressive control of RF
 - Obesity
 - Metabolic syndrome
 - HTN, lipids, DM
 - Statins safe in NAFLD
 - Avoid alcohol (no clear evidence)

Management

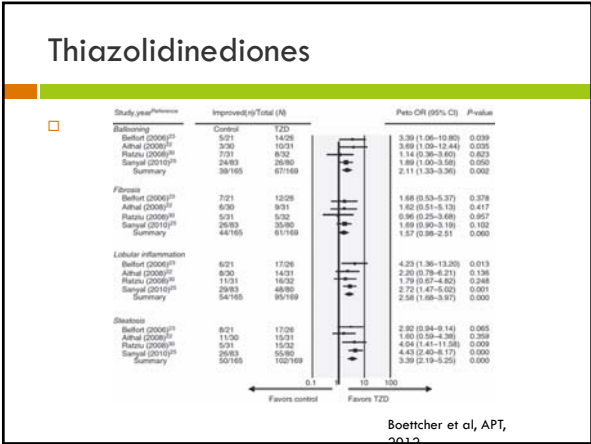
- Weight loss
 - Most important, goal 1-2lb/week
 - Improve steatosis, LE, quality of life, serum insulin levels
 - Avoid rapid weight loss
 - Can increase fibrosis levels
 - Bariatric surgery can improve histology

Management

- Consider Vit E if no history of diabetes or heart disease if refractory or advanced fibrosis
 - Can decrease oxidative stress
 - Variable conclusions in multiple studies
 - Largest study suggested benefit in those without diabetes

Pharmacotherapy

- Thiazolidinediones
 - Insulin sensitizers thought to improve NASH
 - Improve biochemical and histological markers
 - However associated with weight gain, swollen legs, heart failure, bladder cancer



- ### Statins
- Statins
 - Improves LE in those taking it
 - Patients with higher LE have more benefit
 - Consider starting if LE up to 3x ULN
 - Seek hepatology advice in those over 3x ULN

- ### When to refer
- possibility of an alternate diagnosis
 - evidence of steatohepatitis (high AST, ALT, Ferritin and high risk features)
 - no improvement in liver parameters with aggressive RF modification
 - signs of decompensated liver disease

□ Thanks!
