

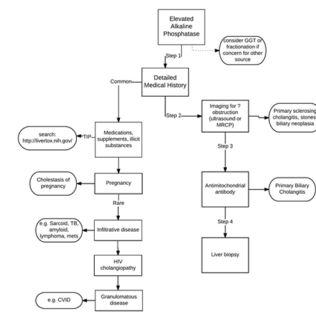
CASE 1

45 year old woman with fatigue is found to have an elevated alkaline phosphatase; 180 (norm: 50-120)

Additional laboratory tests

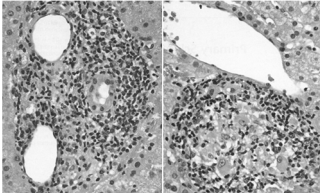
- ALT 30, AST 35,
- Total Bilirubin 0.8
- Total Protein 7.8, Albumin 4.3
- Total Cholesterol 240, HDL 100, LDL 120

Total Cholesterol 240, HDL 100, LDL 120



PBC

- Middle-aged women
- Interlobular – septal: inflammatory ductular destruction
- AMA + or -!
- Check their daughters!



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Case 2

40 year woman with a history of hypertension
glucose intolerance and hyperlipidemia has a BMI
35.

Taking metformin and lisinopril

“Social drinker”.

PE: hepatomegaly

Laboratory test:

- Albumin 3.9
- Total Bilirubin 1.2
- Alk Phos 135
- AST 39, ALT 38

AST 39, ALT 38

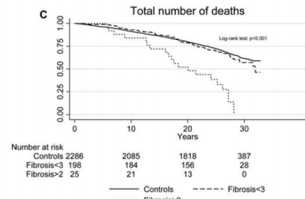
The first commandment of NAFLD management:

Rule out advanced fibrosis

Liver Fibrosis, but No Other Histologic Features, Is Associated With Long-term Outcomes of Patients With Nonalcoholic Fatty Liver Disease



Fibrosis Stage Is the Strongest Predictor for Disease-Specific Mortality in NAFLD After Up to 33 Years of Follow-Up



(HISTOLOGY 2015;61:1547-1554)

Online calculators

NAFLD fibrosis score

Online calculator

Angulo P, et al. *Hepatology* 2015;61:1547-1554

Age (years)

BMI (kg/m²)

AST (U/L)

ALT (U/L)

Albumin (g/L)

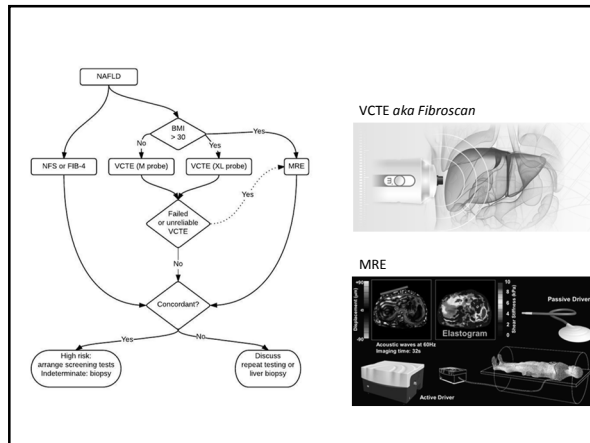
Fibrosis-4 (FIB-4) Calculator

The Fibrosis-4 score index is a simple index to estimate the amount of scarring in the liver. Enter the required values to calculate the FIB-4 value. It will appear in the end on the right (highlighted in yellow).

$$FIB-4 = \frac{Age (years) \times AST (U/L)}{Platelet Count (10^9/L) \times \sqrt{ALT (U/L)}}$$

Interpretation:

Using a lower cutoff value of 1.45, a FIB-4 score < 1.45 had a negative predictive value of 95% for advanced fibrosis. Using a higher cutoff value of 2.67, a FIB-4 score > 2.67 had a positive predictive value of 95% for advanced fibrosis. In the general population, about 10% have advanced fibrosis. In the general population, about 10% have advanced fibrosis. In the general population, about 10% have advanced fibrosis.



Case 3

22 year old marathon runner taking acetaminophen for muscle aches in good general health.

Laboratory test:

CBC normal, Albumin 4.8

Total Bilirubin 0.4

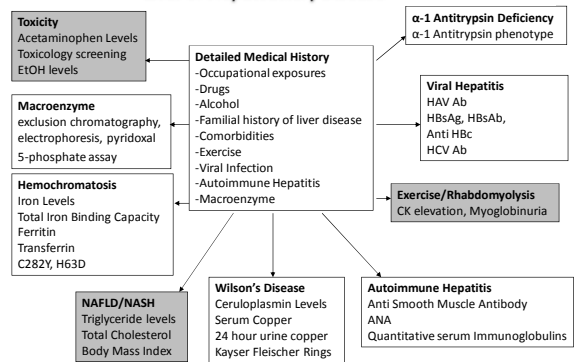
ALK Phos 80

AST 190, ALT 200

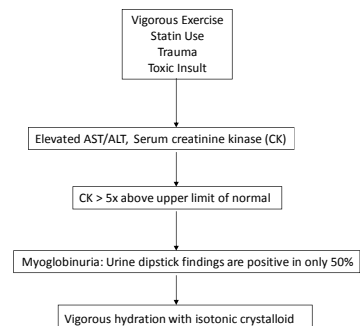
Anti HCV -

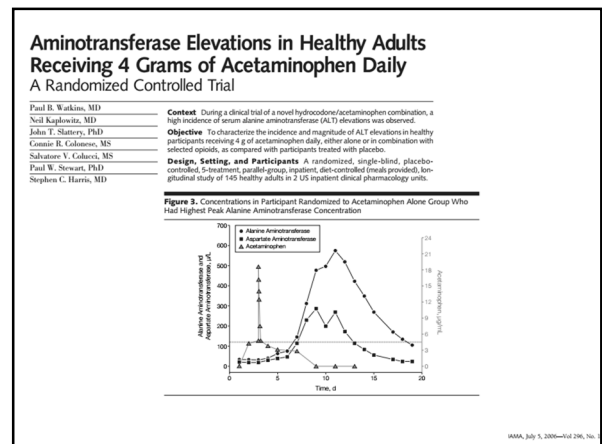
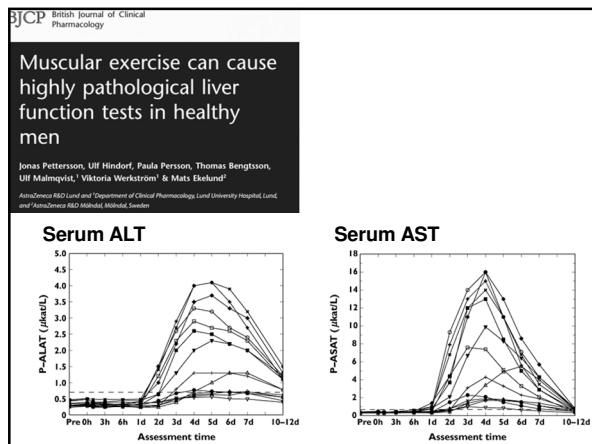
PE: WNL

Abnormal Aminotransferases (AST/ALT) in the Absence of Overt Liver or Hepatobiliary Disease



Evaluation of Rhabdomyolysis as a cause of Elevated Liver Function Tests



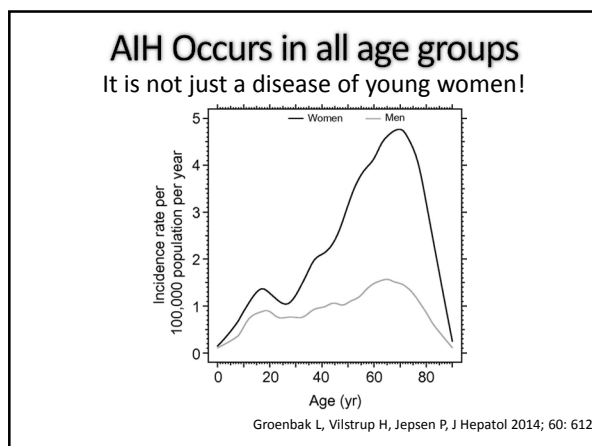
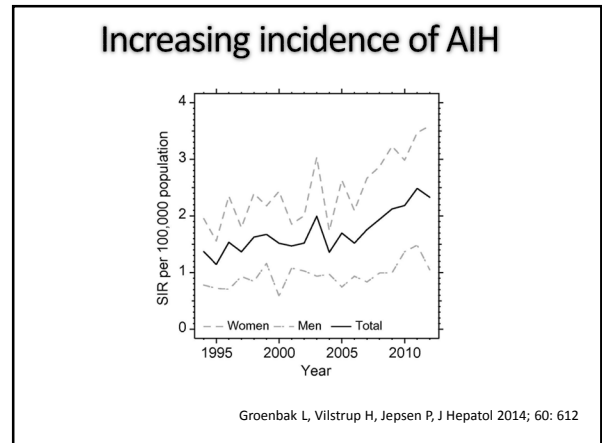


Case 4

35 year old woman presents with fatigue. She is taking nitrofurantoin for recurrent cystitis.

Laboratory tests:

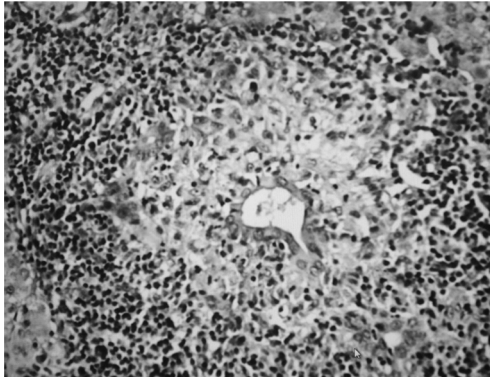
- Total Protein 9.3, Albumin 4.4
- Total bilirubin 1.5
- Alk Phos 150, AST 85, ALT 140
- CBC normal
- Viral hepatitis serologies: anti-HAV+, anti-HBs+, anti-HCV+, and HCV RNA neg.
- PE: hepatosplenomegaly



Diagnosis of Autoimmune Hepatitis: Simplified criteria

Elevation of serum total IgG	
IgG > 16 g / l	1 point
IgG > 18.5 g / l	2 points
Autoantibodies	
ANA;SMA or LKM > 1 : 40	1 point
>1 : 80, or SLA/LP positive	2 points
Histology of chronic hepatitis	
Compatible with AIH	1 point
Typical of AIH	2 points
Absence of viral hepatitis	2 points

Hennes EM et al., hepatology 2008; 48: 169-76



Take home messages:

Abnormal liver chemistries don't necessarily reflect abnormal liver function.

Abnormal liver chemistries may not necessarily reflect liver disorder

Patterns of abnormal liver chemistries can conform to hepatocellular, cholestatic and mixed disorders.

There may be significant liver disease with normal liver chemistries.

Serological tests for viral and autoimmune hepatitis will help resolve the differential diagnosis of chronic hepatitis