Pretreatment Evaluation
Objective

At the end of this lecture, the learner will be able to:

- Outline the appropriate evaluation of a person infected with HCV in order to assess the benefits and risks of treatment and in anticipation of treatment with direct acting antiviral therapy
Clinical Case: Mr. C

- A 60 year old gentleman is referred to you because of a + HCV Ab test

- Past Medical History
  - Hypertension
  - Hyperlipidemia
  - Obesity
Clinical Case: Mr. C

- Medications
  - Simvastatin 40 mg daily
  - Lisinopril 10 mg daily
  - Acetaminophen as needed
Clinical Case: Mr. C

- Social History
  - Drinks 2-3 beers nightly
  - Non-smoker
  - Occasional marijuana
  - Prior IVDU
History of Present Illness

How did the patient acquire HCV

- Born between 1945-1965
- IVDU
- Blood products before 1992
- Tattoos
- MSM
- Vertical Transmission
History of Present Illness

- What are the symptoms of acute HCV?
  - Fever
  - Fatigue and anorexia
  - Nausea and vomiting
  - Abdominal pain
  - Jaundice, dark urine, and clay-colored stools
  - Arthralgias
History of Present Illness

- What are the symptoms of chronic HCV?
  - Often asymptomatic
  - Fatigue, insomnia, depression, mental status changes, weight loss, and arthralgias
  - Extrahepatic (vasculitis and renal disease)
- Long-term outcomes
  - Cirrhosis
  - Liver failure
  - Hepatocellular carcinoma
Factors to Consider

- Likelihood of progression
  - Comorbidities
  - Observed rate of progression
- Stage of disease
- Patient readiness
  - Are they able to be compliant?
  - Are they at risk for re-infection?
Clinical Case: Mr. C

- A 60 year old gentleman is referred to you because of a + HCV Ab test

- Past Medical History → think about comorbidities
  - Hypertension
  - Hyperlipidemia
  - Obesity

- Family History
  - Mother – diabetes
  - Father – coronary artery disease

- Social History
  - Drinks 2-3 beers nightly
  - Non-smoker
  - Occasional marijuana
  - Prior IVDU
What comorbidities would accelerate liver disease?

- Alcoholism
- Hepatitis A
- Hepatitis B
- HIV
- Diabetes
# AUDIT – Alcohol Use Disorders Identification Test

<table>
<thead>
<tr>
<th>Questions</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How often do you have a drink containing alcohol?</td>
<td>Never</td>
<td>Monthly or less</td>
<td>2-4 times a month</td>
<td>2-3 times a week</td>
<td>4 or more times a week</td>
</tr>
<tr>
<td>2. How many drinks containing alcohol do you have on a typical day when you are drinking?</td>
<td>1 or 2</td>
<td>3 or 4</td>
<td>5 or 6</td>
<td>7 to 9</td>
<td>10 or more</td>
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<tr>
<td>3. How often do you have six or more drinks on one occasion?</td>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
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<td>--------------------------------------------------------------------------</td>
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<tr>
<td>4</td>
<td>How often during the last year have you found that you were not able to stop drinking once you had started?</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5</td>
<td>How often during the last year have you failed to do what was normally expected of you because of drinking?</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
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<tr>
<td>7. How often during the last year have you had a feeling of guilt or remorse after drinking?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. How often during the last year have you been unable to remember what happened the night before because of your drinking?</td>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
<tr>
<td>9. Have you or someone else been injured because of your drinking?</td>
<td>No</td>
<td></td>
<td>Yes, but not in the last year</td>
<td></td>
<td>Yes, during the last year</td>
</tr>
<tr>
<td>10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?</td>
<td>No</td>
<td></td>
<td>Yes, but not in the last year</td>
<td></td>
<td>Yes, during the last year</td>
</tr>
</tbody>
</table>
Lab

- HCV RNA quant
- HCV genotype
- CBC w/ diff
- BMP
- LFT’s
- INR

- Urine drug screen
- Hepatitis A serologies
- Hepatitis B serologies
- HIV
- Hgb A1c
- Vitamin D
Factors to Consider

- Likelihood of progression
  - Comorbidities
  - Observed rate of progression
- Stage of disease
- Patient readiness
  - Are they able to be compliant
  - Are they at risk for re-infection
Staging Liver Disease

- Importance of Staging
  - Identify patients with greatest need for therapy
  - Identify patients for cirrhosis-specific care
  - Triage resources

- Types of Staging
  - Liver biopsy
  - Biomarkers
  - Alternative modalities
    - Acoustic Radiation Force Impulse (ARFI) imaging
    - Transient elastography
Liver Biopsy To Stage Liver Fibrosis

- Gold standard
- May be helpful in evaluating other causes of liver disease
- Results may be impacted by quality of specimen (i.e., length of biopsy)
- Limited by invasive nature of test, cost, and access to proceduralist
Biomarker Testing to Stage Liver Fibrosis

- Ideally would allow staging of liver disease without invasive procedures or specialized imaging
- Sensitivity and low for identifying specific stages of fibrosis specificity
- Multiple scoring systems and proprietary tests available but vary in utility

- APRI
  - AST-To-Platelet Ratio Index
  - \([(\text{AST}/ \text{ULN})/\text{PLT}] \times 100\)

- FIB-4 Index
  - Age \times \text{AST} / [\text{PLT} \times (\text{ALT})^{1/2}]\)

- Fibrosure™
  - Proprietary test to determine grade of inflammation and stage of fibrosis
  - Accepted by some payers
Elastography

- Mechanical shear wave velocity, which is proportional to liver stiffness
- Multiple methods (transient, magnetic resonance, acoustic radiation force impulse)
- May be a reasonable alternative to biopsy
  - AUROC for transient elastography is >0.95 for identifying cirrhosis as compared to liver biopsy in multiple studies
Counseling: Reduce Progression of Liver Disease

- Alcohol abstinence
- Immunization for Hepatitis A and B
- Appropriate acetaminophen use
- Avoiding NSAIDs
Counseling: Reduce Transmission of HCV

- Avoid blood borne exposure
  - Shared personal devices such as razors or nail clippers
  - Barrier protection for intimate contact
  - Safe(r) approaches to injection drug use