Hepatitis C Virus: Pretreatment Evaluation
Disclosures for Cody Chastain, MD

- No financial disclosures
Objective

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

- Outline and select the appropriate evaluation of a person infected with HCV prior to treatment with direct acting antiviral therapy
Questions

- How do we determine how HCV has impacted each patient?
- How do we assess liver disease and comorbidities to inform clinical care and HCV treatment?
- How do we reduce harm while moving towards treatment?
History of HCV

- Timing and context of diagnosis
- Prior symptoms of acute hepatitis
- Prior staging
- Prior treatment
Risk Factors

- Blood products
- Prior surgeries in distant past
- Tattoos
- Piercing
- Injection and inhaled drug use
- Unprotected sex
- Age (i.e. baby boomers)
Symptoms of Chronic HCV Infection

- Fatigue
- Arthralgias
- Chronic abdominal pain
- Insomnia
- Many patients are asymptomatic
Symptoms of Advanced Liver Disease

- Upper GI bleeding
- Ascites
- Hepatic encephalopathy
- Liver failure
Related History

- Other medical diagnoses
- Family history
- Alcohol use
- Non-prescription drugs
- Prescription medication review
- Over-the-counter medication review
Additional Social History

- Current living situation
- Occupational/work history
- Transportation
- Support system
Physical Exam

- *May be normal without evidence of disease!*

- Focus on stigmata of chronic liver disease:
  - Palmar erythema
  - Spider nevi
  - Gynecomastia
  - Jaundice
  - Ascites
  - Encephalopathy

Physical Exam (cont.)

- Evaluate for stigmata of injection drug use
  - Track marks
  - Thrombophlebitis
  - Skin scarring
Suggested Laboratory Testing Prior to Treatment

- Within 6 months
  - Complete blood count (CBC)
  - Hepatic function panel
  - Calculated glomerular filtration rate (eGFR)

- Anytime Prior
  - Quantitative HCV RNA
  - HCV genotype (*Not Required*)
  - HIV antigen/antibody
  - Hepatitis B surface antigen

- Before Starting
  - Pregnancy testing
Staging Liver Fibrosis/METAVIR

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

Types of Staging
- Liver biopsy
- Biomarkers
- Elastography
# METAVIR Scoring

<table>
<thead>
<tr>
<th>Score</th>
<th>Pathologic Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No fibrosis</td>
</tr>
<tr>
<td>1</td>
<td>Periportal fibrosis</td>
</tr>
<tr>
<td>2</td>
<td>Periportal septae</td>
</tr>
<tr>
<td>3</td>
<td>Bridging fibrosis (portal-central septae)</td>
</tr>
<tr>
<td>4</td>
<td>Cirrhosis</td>
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</tbody>
</table>
Liver Biopsy To Stage Liver Fibrosis

- Historical 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
- Risks/complications can be significant
Indirect Markers of Liver Fibrosis

**APRI**
- AST-To-Platelet Ratio Index
  - \([\frac{(AST/ULN)}{PLT}] \times 100\)
  - Sens 76% and Spec 72% at cutoff of 1.0 for predicting cirrhosis
  - Sens 46% and Spec 91% at cutoff of 2.0 for predicting cirrhosis

**FIB-4 Index**
- Age x AST / [PLT x (ALT)\(^{1/2}\)]
  - Negative predictive value 90% for advanced fibrosis if <1.45
  - Positive predictive value 65% and specificity 97% for advanced fibrosis if >3.25

**Fibrosure®**
- Multiple known inputs and proprietary equation
- Recognized by many payers

Elastography

- Measures 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

Notes About Anatomic Imaging

- Anatomic imaging (i.e. ultrasound, CT, MRI) NOT adequate for staging
  - Insensitive for underlying fibrosis
  - If seen, advanced fibrotic changes likely correlate with pathology

- Appropriate for hepatocellular carcinoma monitoring
Immunizations

- Hepatitis A
- Hepatitis B
- Influenza
- Pneumococcal immunization (for those with cirrhosis)
Interventions to Reduce Progression of Liver Disease

- Immunizations as noted
- Alcohol abstinence
- Appropriate acetaminophen use
- Limited non-steroidal anti-inflammatory drug use, particularly in setting of advanced fibrosis
Educate Clients/Patients

- Assess current understanding
- Explain principles of infection and impact on liver disease
- Introduction to treatment and prognosis
Counseling to Reduce Transmission of HCV

- Keep wounds covered
- Clean up blood or body fluid spills with alcohol and/or bleach
- Shared personal devices such as razors, toothbrushes, or nail clippers
- Barrier protection for intimate contact
- Safer approaches to injection drug use
QUESTIONS?