Hepatitis C Update: Screening, Diagnosis, and Treatment

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Medical Director, MW AETC ECHO Telehealth Program

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Conflicts of Interest/Financial Disclosures

• None
Hepatitis C Update: Outline

Epidemiology and Transmission
Screening and Diagnosis
Treatment Options and Guidelines 2016
Assessing Candidates for Treatment
Resources

AASLD/IDSA Guidelines
http://hcvguidelines.org

UW Hepatitis Online Modular Course
http://hepatitisc.uw.edu
A patient with hepatitis C asks you what their chance of cure would be with currently available treatment options. What would you say?

A. 0%, hep C can’t be cured
B. 20-25%
C. 45-50%
D. 70-75%
E. 95% or greater
Case

- A 45-year-old man has a positive hepatitis C virus (HCV) antibody test, followed by a detectable HCV RNA (viral load) test at 8 million copies/ml. An HCV genotype test determines that he has genotype 1b HCV. He last used injection drugs approximately 25 years ago. He drinks 1-2 beers daily and binge drinks on weekends.

- How would you counsel him about preventing progression of liver disease and preventing transmission to others?

- What would you do to assess his stage of liver fibrosis and the urgency of treatment?

- What are his options for treatment and chance of cure?
Hepatitis C: Epidemiology and Transmission
Hepatitis C - Transmission

- **Blood – Blood – Blood**
  - IV drug abuse (68%)
  - Occupational exposure
  - Transfusions (before 1992)
  - Tattoos, piercings (unsanitary)
- Mother to child
- Sexual exposure (*not so rare!* (18%))
- No vaccine or immunity for hepatitis C

Who Should be Screened for Hepatitis C?

CDC Guidelines

- Ever injected illegal drugs or used intranasal cocaine (even once)
- Received clotting factors before 1987
- Received blood/organs before July 1992
- Ever on chronic hemodialysis
- Evidence of liver disease/elevated LFT’s
- Infants born to HCV-infected mothers
- HIV infection (up to 1/3 also have hep C)
- After hep C exposure
- History of non-sterile tattoo/piercing
- Baby boomers (born 1945-1965)
Hepatitis C in the United States

- Estimated 3-4 million people in the US are infected with Hepatitis C

Up to 75% of people living with Hepatitis C DO NOT KNOW THEY ARE INFECTED.

Many people can live with HEPATITIS C for DECADES WITH NO SYMPTOMS.

CDC recommends anyone born from 1945-1965 GET TESTED.
Who Needs Repeat HCV Screening?

- Annual testing for injection drug users and HIV-positive men who have sex with men (MSM)
- “Periodic” testing for others who have ongoing risk factors

Source: hcvguidelines.org
Hepatitis C – Diagnostic Testing

HCV Antibody (EIA), ‘HCV Ab’
- Indicates past or active infection
- Presence of antibody does not confer immunity

HCV RNA test (PCR) ‘Viral Load’
- Confirms active infection, infectivity to others
- Quantitative or qualitative; quantitative more useful because of prognostic information

HCV Genotype
- Important for treatment decisions

Source: hcvguidelines.org
Natural History of Hepatitis C HIV-Negative

Exposure (Acute Hepatitis)

- Resolution: 15%
- Persistence (chronic): 85%

Cirrhosis

- 20%
- ESLD: 3%/yr
- HCC: 4%/yr
- Transplant
- Death

Time (yrs): 10 20 30

Alcohol greatly accelerates this progression

Mandell: Principles & Practice of Infectious Disease, 7th Ed;
Natural History of Hepatitis C HIV-Positive

Exposure (Acute Hepatitis)
- Resolution: 5%
- Persistence (chronic): 95%

Cirrhosis
- 20% of cases
- 3%/yr to ESLD
- 4%/yr to HCC

Time (yrs): 5, 10, 15
- 5 years
- 10 years
- 15 years

Transplant
Death

Mandell: Principles & Practice of Infectious Disease, 7th Ed;
Forecasted 2010-2060 Annual HCV-Related Deaths in the US Persons with Chronic Hepatitis C and No Cirrhosis in 2005

“Why screen if I can’t treat?”

• Counsel to prevent progression of liver disease
  - Avoidance of alcohol
  - Vaccinate for hep A/B

• Evaluate for cirrhosis; if cirrhosis present:
  - EGD to screen for varices
  - Every 6-month ultrasound to screen for HCC

• Counsel to decrease risk of transmission
**Recommendations for All HCV+ Individuals**

- Abstinence from alcohol
- Evaluation for conditions that accelerate liver fibrosis (HBV, HIV, NAFLD/NASH)
- Management of obesity, insulin resistance, etc
- Vaccination against HAV, HBV
- Pneumococcal vaccination
- Evaluation of stage of liver fibrosis
- Education regarding how to prevent transmission to others

Source: hcvguidelines.org
Measures to Prevent HCV Transmission

- Avoid sharing dental and shaving equipment
- Cover bleeding wounds
- Abstinence from intranasal or injection drugs; avoid sharing needles & equipment (syringes, water, cotton, cookers)
- Persons with HIV infection or multiple sexual partners or STI’s should be advised to use barrier protection
- Other persons with HCV should be counseled that risk of sexual transmission is low and “may not warrant barrier protection”
- Gloves should be worn to clean blood spills; household surfaces and implements can be cleaned with 1 part bleach:9 parts water

Source: hcvguidelines.org
Treatment Options 2016
Our patient with genotype 1b hepatitis C has F4 fibrosis on liver biopsy. Which one of these would be a first-line treatment option as of 2016?

A. Sofosbuvir/ledipasvir (*Harvoni*)
   1 pill per day x 3 months

B. Elbasvir/grazoprevir (*Zepatier*)
   1 pill per day x 3 months

C. Sofosbuvir/velpatasvir
   (*Epclusa*) 1 pill per day x 3 months

D. Pegylated interferon + ribavirin
   x 6-12 months
Who Should Be Treated?

- HCV treatment reduces all-cause mortality and liver-related complications (ESLD, HCC)

- The goal of treatment is sustained virologic response (SVR), also called a “cure”

- HCV treatment is recommended for all individuals with HCV infection (unless very limited life expectancy)

- Tests for stage of liver fibrosis help to guide treatment decisions & determine if EGD or HCC screening needed

Source: hcvguidelines.org
Mortality Benefit of Successful HCV Treatment

Figure 1. Five-year mortality rates (95% confidence interval) for sustained virologic response (SVR) vs non-SVR groups for each cohort.

Sources: Simmons et al. CID. Sept 2015.
Pre-Treatment Assessment

• Factors that determine treatment:

  1) Degree of liver fibrosis

  2) Treatment-naïve or experienced

  3) Genotype

    - For genotype 1: subtype (1a or 1b)

    - For some circumstances: presence of baseline resistance associated variants (RAV)

Source: hcvguidelines.org
Pre-Treatment Assessment

- Assess degree of liver fibrosis
  - Options:
    1) **Liver biopsy**
      - Also provides assessment of other causes of liver disease (NASH, iron, autoimmune hepatitis, etc)
      - Subject to observer variability, sampling error
    2) **Combine non-invasive markers**
      - Elastography
      - Direct biomarkers (Fibrosure, Fibrotest)
      - Indirect markers (APRI, FIB-4)

Source: hcvguidelines.org
Hepatitis C Genotypes

Prevalence in US population

- Genotype 1: 74%
- Genotype 2: 15%
- Genotype 3: 7%
- Genotypes 4-6: 4%

Hepatitis C Genotypes

Global distribution of HCV genotypes

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not be full agreement.

http://www.who.int/vaccine_research/diseases/viral_cancers/en/index2.html
Therapy for Hepatitis C
Rapid Improvement in SVR Rates in Recent Years

Timeline

1986 2002 2011 2013

SVR Rate (%)

IFN  PEG-IFN  PEG-IFN + RBV  PEG-IFN + RBV + PI  DAA's

All Genotypes
Genotype 1
Genotype 2-3

>90-95%

HCV Directly Acting Antivirals (DAA’s)

Chlorcyclizine

Cyclophylin inhibitors

Receptor binding and endocytosis

Transport and release

Vedoprevir/GS-9451

Simeprevir

Paritaprevir

Asunaprevir

Grazoprevir

NS3/4 protease inhibitors

RNA replication

NS5A inhibitors*

Ombitasvir

Ledipasvir

Daclatasvir

ACH-3102

Elbasvir

Sofosbuvir

ACH-3422

NS5B polymerase inhibitors

GS-9669

Dasabuvir

Beclabuvir
Sofosbuvir-Velpatasvir (*Epclusa*)

- **Approval Status**
  - Approved by US FDA on June 28, 2016

- **Class and Mechanism**
  - Sofosbuvir: HCV NS5B polymerase inhibitor
  - Velpatasvir: HCV NS5A inhibitor

- **Indications and Usage**
  Indicated for the treatment of chronic HCV genotypes 1-6 in adults:
  - without cirrhosis or with compensated cirrhosis (Child-Pugh A)
  - with decompensated cirrhosis (Child-Pugh B and C) combined with ribavirin

- **Preparation**: Sofosbuvir-velpatasvir (fixed dose 400 mg/100 mg)

- **Dosing**: One tablet orally once daily, with or without food

- **Adverse Effects (AE)**: Headache and fatigue

*Source: Epclusa Prescribing Information, Gilead Sciences.*
Sofosbuvir-Velpatasvir in HCV Genotype 1, 2, 4, 5, or 6
ASTRAL-1: Study Design

Randomized 5:1 ratio for treatment to placebo. Stratified by cirrhosis and HCV genotype.
*Genotype 5 patients (n=6) were assigned to active arm (and not randomized)
Placebo recipients were eligible for deferred treatment with sofosbuvir-velpatasvir

Drug Dosing
Sofosbuvir-Velpatasvir (400/100 mg): fixed dose combination; one pill once daily

### Baseline Characteristic

<table>
<thead>
<tr>
<th>Baseline Characteristic</th>
<th>Sofosbuvir-Velpatasvir (N=624)</th>
<th>Placebo (N=113)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirrhosis, n (%)</td>
<td>121 (19)</td>
<td>21 (18)</td>
</tr>
<tr>
<td>Treatment experienced, n (%)</td>
<td>201 (32)</td>
<td>33 (28)</td>
</tr>
<tr>
<td>Prior therapy, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peginterferon + Ribavirin</td>
<td>122 (61)</td>
<td>24 (73)</td>
</tr>
<tr>
<td>Peginterferon + Ribavirin + Protease Inhibitor</td>
<td>56 (28)</td>
<td>6 (18)</td>
</tr>
<tr>
<td>Standard Interferon +/- Ribavirin</td>
<td>23 (11)</td>
<td>3 (9)</td>
</tr>
</tbody>
</table>

Sofosbuvir-Velpatasvir in HCV Genotype 1, 2, 4, 5, or 6

ASTRAL-1: Results

Patients with SVR12 (%)

<table>
<thead>
<tr>
<th>Genotype</th>
<th>99</th>
<th>98</th>
<th>99</th>
<th>100</th>
<th>100</th>
<th>97</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>618/624</td>
<td>206/210</td>
<td>117/118</td>
<td>104/104</td>
<td>116/116</td>
<td>34/35</td>
<td>41/41</td>
</tr>
</tbody>
</table>

Sofosbuvir-Velpatasvir in HCV Genotype 1, 2, 4, 5, or 6

ASTRAL-1: Results

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Patients with SVR12 (%)</th>
<th>1 Relapse</th>
<th>2 Lost to follow-up</th>
<th>1 Withdrew consent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>99/624</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>98/210</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1b</td>
<td>99/118</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>100/104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>100/116</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>97/35</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>100/41</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sofosbuvir-Velpatasvir in HCV Genotype 1, 2, 4, 5, or 6
ASTRAL-1: Results

Sofosbuvir-Velpatasvir in HCV Genotype 2
ASTRAL-2: Study Design

*Randomization stratified by treatment experience and cirrhosis status.

**Abbreviations:** SOF-VEL = sofosbuvir-velpatasvir; RBV = ribavirin

**Drug Dosing**
Sofosbuvir-velpatasvir (400/100 mg): fixed-dose combination; one pill once daily
Sofosbuvir: 400 mg once daily
Ribavirin (weight-based and divided bid): 1000 mg/day if < 75 kg or 1200 mg/day if ≥ 75 kg

## Sofosbuvir-Velpatasvir in HCV Genotype 2
### ASTRAL-2: Baseline Characteristics

<table>
<thead>
<tr>
<th>Baseline Characteristic</th>
<th>Sofosbuvir-Velpatasvir (N=134)</th>
<th>Sofosbuvir + Ribavirin (N=132)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (range)</td>
<td>57 (26-81)</td>
<td>57 (23-76)</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>86 (64)</td>
<td>72 (55)</td>
</tr>
<tr>
<td>Race, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>124 (93)</td>
<td>111 (84)</td>
</tr>
<tr>
<td>Black</td>
<td>6 (4)</td>
<td>12 (9)</td>
</tr>
<tr>
<td>Asian</td>
<td>1 (1)</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Body mass index, mean (range)</td>
<td>28 (17-45)</td>
<td>29 (19-61)</td>
</tr>
<tr>
<td>HCV RNA ≥800,000 IU/mL, n (%)</td>
<td>111 (83)</td>
<td>101 (77)</td>
</tr>
<tr>
<td>IL28B non-CC, n (%)</td>
<td>79 (59)</td>
<td>86 (65)</td>
</tr>
<tr>
<td>Cirrhosis, n (%)</td>
<td>19 (14)</td>
<td>19 (14)</td>
</tr>
<tr>
<td>Treatment-experienced, n (%)</td>
<td>19 (14)</td>
<td>20 (15)</td>
</tr>
<tr>
<td>Prior response, no./total (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-response</td>
<td>3/19 (16)</td>
<td>3/20 (15)</td>
</tr>
<tr>
<td>Relapse or breakthrough</td>
<td>16/19 (84)</td>
<td>17/20 (85)</td>
</tr>
</tbody>
</table>

Sofosbuvir-Velpatasvir in HCV Genotype 2
ASTRAL-2: Results

P=0.018 for superiority of Sofosbuvir-Velpatasvir compared with Sofosbuvir + Ribavirin

Sofosbuvir-Velpatasvir in HCV Genotype 2
ASTRAL-2: Results

Sofosbuvir-Velpatasvir in HCV Genotype 3
ASTRAL-3: Study Design

Treatment-naïve or experienced GT 3 (N=552)

- **N=277**
  - SOF-VEL
  - SVR12

- **N=275**
  - SOF + RBV
  - SVR12

*Randomization stratified by treatment experience and cirrhosis status.

**Abbreviations:** SOF-VEL = sofosbuvir-velpatasvir; RBV = ribavirin

**Drug Dosing**
- Sofosbuvir-velpatasvir (400/100 mg): fixed-dose combination; one pill once daily
- Sofosbuvir: 400 mg once daily
- Ribavirin (weight-based and divided bid): 1000 mg/day if < 75 kg or 1200 mg/day if ≥ 75 kg

Sofosbuvir-Velpatasvir in HCV Genotype 3
ASTRAL-3: Results

P<0.001 for superiority of Sofosbuvir-Velpatasvir compared with Sofosbuvir + Ribavirin

Sofosbuvir-Velpatasvir in HCV Genotype 3
ASTRAL-3: Results

Sofosbuvir-Velpatasvir in HCV Genotype 3
ASTRAL-3: Resistance

- SVR12 was 84% (21/25) in patients with Y93H

Ledipasvir-Sofosbuvir (*Harvoni*) – Approved 2014

- **Indication:** chronic HCV genotype 1 in adults

- **Class & Mechanism**
  - Ledipasvir: NS5A inhibitor
  - Sofosbuvir: Nucleotide analog NS5B polymerase inhibitor

- **Dosing:** Ledipasvir-Sofosbuvir (fixed dose 90 mg/400 mg)
  One tablet orally once daily with or without food

- **Adverse Effects (AE):** Fatigue, headache

- **Wholesale Acquisition Cost in US:** $1125/pill
  - 8-week course of therapy = $63,000
  - 12-week course of therapy = $94,500
  - 24-week course of therapy = $189,000

Source: *Harvoni* Prescribing Information. Gilead Sciences
Ledipasvir-Sofosbuvir +/- Ribavirin in Treatment-Naïve HCV GT 1
ION-1 Study: Results

ION-1: SVR 12* by Treatment Duration and Regimen

<table>
<thead>
<tr>
<th>Patients with SVR 12 (%)</th>
<th>12-Week Regimen</th>
<th>24-Week Regimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDV-SOF</td>
<td>211/214</td>
<td>212/217</td>
</tr>
<tr>
<td>LDV-SOF + RBV</td>
<td>211/217</td>
<td>215/217</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abbreviations: LDV-SOF= ledipasvir-sofosbuvir; RBV = ribavirin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Primary end-point by intention-to-treat analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ledipasvir-Sofosbuvir +/- Ribavirin in Treatment-Naïve HCV GT 1
ION-1 Study: Results

IONS: SVR12 by Treatment Regimen and Liver Disease

![Graph showing patients (%) with SVR12](image)

**Without Cirrhosis**
- LDV-SOF: 100%
- LDV-SOF + RBV: 99%
- LDV-SOF: 100%
- LDV-SOF + RBV: 100%

**With Cirrhosis**
- LDV-SOF: 97%
- LDV-SOF + RBV: 97%
- LDV-SOF: 100%
- LDV-SOF + RBV: 100%

**Note:** subgroup results do not include patients who withdrew consent or were lost to follow-up

Ledipasvir-Sofosbuvir +/- Ribavirin in Treatment- Experienced HCV GT 1 ION-2 Study: Results

ION-2: SVR12 by Treatment Regimen and Liver Disease


- **Indication**: chronic HCV genotypes 1 or 4

- **Class & Mechanism**:
  - Elbasvir: NS5A inhibitor
  - Grazoprevir: NS3/4A inhibitor

- **Dosing**: one tablet orally once daily, with or without food

- **Adverse Effects**:
  - Fatigue, headache, nausea
  - Increase in ALT to >5x normal in 1% of subjects

- **Wholesale acquisition price**: $72,000 (12-week course)

Source: Zepatier prescribing information. Merck.
Elbasvir-Grazoprevir in Treatment-Naïve HCV GT 1, 4 or 6
C-EDGE TN: Results

Primary efficacy analysis included all patients who received ≥1 dose of drug.

Elbasvir-Grazoprevir in Treatment-Naïve HCV GT 1, 4 or 6 C-EDGE TN: Results

*Patients with baseline GT1a RAVs with a ≤5-fold shift to elbasvir: SVR12=90% (9 of 10)
*Patients with baseline GT1a RAVs with a >5-fold shift to elbasvir: SVR12=22% (2 of 9)

Ledipasvir-Sofosbuvir +/- [GS-9669 or GS-9451] in Naïve GT1
NIH SYNERGY Trial: Features

NIH SYNERGY: SVR 12 by Treatment Regimen

<table>
<thead>
<tr>
<th>Treatment Regimen</th>
<th>Patients (%) with HCV RNA &lt; 25 IU/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 Weeks Ledipasvir-Sofosbuvir</td>
<td>20/20</td>
</tr>
<tr>
<td>6 Weeks Ledipasvir-Sofosbuvir + GS-9669</td>
<td>19/20</td>
</tr>
<tr>
<td>6 Weeks Ledipasvir-Sofosbuvir + GS-9451</td>
<td>20/20</td>
</tr>
</tbody>
</table>

“HIV/HCV-coinfected persons should be treated and retreated the same as persons without HIV infection, after recognizing and managing interactions with antiretroviral medications.”
TREATMENT OF CHRONIC HEPATITIS C

Guidelines for Treatment-Naïve Individuals (hcvguidelines.org)
HCV Treatment Recommendations, Updated July 3, 2016
Treatment Naïve Genotype 1a Chronic HCV

<table>
<thead>
<tr>
<th>Treatment Regimen</th>
<th>Duration-No Cirrhosis</th>
<th>Duration-Compensated Cirrhosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ledipasvir/velpatasvir <em>(Epclusa)</em></td>
<td>12 weeks</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Ledipasvir/sofosbuvir <em>(Harvoni)</em></td>
<td>*12 weeks</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Elbasvir/grazoprevir <em>(Zepatier)</em></td>
<td>No NS5A RAV’s: 12 weeks</td>
<td>No NS5A RAV’s: 12 weeks</td>
</tr>
<tr>
<td></td>
<td>NS5A RAV’s: 16 weeks + ribavirin</td>
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</tr>
<tr>
<td>Paritaprevir/ritonavir/ombitasvir + dasabuvir <em>(Viekira Pak)</em></td>
<td>12 weeks + ribavirin</td>
<td>24 weeks + ribavirin</td>
</tr>
</tbody>
</table>

*8 weeks may be sufficient if HCV RNA <6 million (though we recommend 12 weeks)

Source: AASLD/IDSA/IAS-USA (www.hcvguidelines.org).
HCV Treatment Recommendations, Updated July 3, 2016
Treatment Naïve Genotype 1b Chronic HCV

<table>
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<th>Treatment Regimen</th>
<th>Duration-No Cirrhosis</th>
<th>Duration-Compensated Cirrhosis</th>
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<td>Ledipasvir/velpatasvir (Epclusa)</td>
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*8 weeks may be sufficient if HCV RNA <6 million (though we recommend 12 weeks)

Source: AASLD/IDSA/IAS-USA (www.hcvguidelines.org).
## HCV Treatment Recommendations, Updated December 2014
### Treatment Naïve Genotype 2 Chronic HCV

<table>
<thead>
<tr>
<th>Treatment Regimen</th>
<th>Duration-No cirrhosis</th>
<th>Duration-Compensated Cirrhosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sofosbuvir/velpatasvir (Epclusa)</td>
<td>12 weeks</td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

Source: AASLD/IDSA/IAS-USA ([www.hcvguidelines.org](http://www.hcvguidelines.org)).
HCV Treatment Recommendations, Updated December 2014
Treatment Naïve Genotype 3 Chronic HCV

<table>
<thead>
<tr>
<th>Treatment Regimen</th>
<th>Treatment Duration - No Cirrhosis</th>
<th>Treatment Duration - Cirrhosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sofosbuvir/velpatasvir (Epclusa)</td>
<td>12 weeks</td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

Source: AASLD/IDSA/IAS-USA (www.hcvguidelines.org).
Drug-Drug Interactions

• A comprehensive assessment of all prescribed & OTC meds is recommended prior to initiating treatment
  
  - Good resource: http://www.hep-druginteractions.org/

• Example: both ledipasvir and velpatasvir interact with acid suppressants (PPI’s)
Medication Access and Patient Assistance


- Patient assistance programs for uninsured (for Zepatier or Viekira Pak, no longer exists for Harvoni)

- Patient Access Network (PAN) Foundation for high deductibles

- HepEducation project (Seattle)
A 45-year-old man has a positive hepatitis C virus (HCV) antibody test, followed by a detectable HCV RNA (viral load) test at 8 million copies/ml. An HCV genotype test determines that he has genotype 1b HCV. He last used injection drugs approximately 25 years ago. He drinks 1-2 beers daily and binge drinks on weekends.

How would you counsel him about preventing progression of liver disease and preventing transmission to others?

What would you do to assess his stage of liver fibrosis and the urgency of treatment?

What are his options for treatment and chance of cure?
SUMMARY

• Hepatitis C is common, but underdiagnosed

• Treatment is expensive but patients CAN BE CURED!

• DAA’s are now considered the standard of care

• Patients with advanced liver disease, complications, or high transmission risk can be prioritized for treatment

• Societal goal is the day when all persons with chronic hepatitis C can be treated, without the need for biopsy or other assessment of disease severity