HCV Case Studies and Special Populations
Disclosures

• Grant funding from NIH NIAID, NIDDK, NIA, and VA Merit
• No financial interests involved in this presentation
Case 1

- A 64 year old black male comes in for treatment of HCV, genotype 1b infection; he has no evidence of cirrhosis by CT or elastography but has end-stage kidney disease secondary to longstanding, poorly-controlled HTN. He now required HD but is otherwise doing well.
- PMH: CAD, CKD
- Medications:
  - Phosphate binder with meals
  - Clonidine 0.3 mg 3 times daily
  - Amlodipine 10 mg/day
  - Labetalol 200 mg twice daily
  - Calcitriol 25 mcg/day
  - Calcium 600 mg twice daily
  - Pravastatin 10 mg/day
SH: disabled, no tobacco or EtOH for many years. Hx IVDA in the 1970s.

PE: Vitals: BP 188/95 mm Hg, RR 20/min, HR 70/min; weight 85 kg
- HEENT: no icterus
- Lungs: clear
- Abd: no HSM, no ascites
- Ext: fistula present

Labs:
- WBC 3600 cells/mm3
- Hgb 12 g/dL
- T bili: 0.8 mg/dL
- Platelets: 140,000/mm3
- Creatinine: 7.2 mg/dL
- AST/ALT: 20 U/L
- Albumin: 3.7 g/dL
- HCV RNA: 10,000,000 IU/mL
What regimen would you consider?

- A. Elbasvir plus grazoprevir for 12 weeks
- B. Glecaprevir/pibrentasvir daily for 8 to 16 weeks
- C. Ledipasvir/sofosbuvir for 24 weeks
- D. Daclatasvir plus sofosbuvir for 24 weeks
- E. A or B
HCV and CKD

- HCV independently associated with development of CKD
- HCV was associated with a 51% increase in the risk for proteinuria and a 43% increase in risk for CKD
- Greater progression to ESRD in individuals with HCV with CKD
- Increased all-cause mortality in persons on dialysis when HCV infected


Treatment of HCV with advanced CKD

- CKD 4 or 5
  - C-SURFER trial examined 12 weeks of elbasvir/grazoprevir in genotype 1 infection
    - 75% were on HD; 45% were AA
    - SVR12: 94%
  - EXPEDITION-4 trial examined 12 weeks of glecaprevir/pibrentasvir for all genotypes with CDK stage 4 or 5
    - 82% were on HD; 25% AA; 40% either genotype 1 or 2
    - SVR12 rate 98%

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What regimen would you consider?

- A. Elbasvir plus grazoprevir for 12 weeks
- B. Glecaprevir/pibrentasvir daily for 8 to 16 weeks
- C. Ledipasvir/sofosbuvir for 24 weeks
- D. Daclatasvir plus sofosbuvir for 24 weeks
- E. A or B
# Treatment of HCV with advanced CKD

**Recommended regimens listed by evidence level and alphabetically for:**

**Patients With CKD Stage\(^a\) 4 or 5 (eGFR <30 mL/min or End-Stage Renal Disease)**

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>GENOTYPE</th>
<th>DURATION</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily fixed-dose combination of elbasvir (50 mg)/grazoprevir (100 mg)</td>
<td>1a, 1b, 4</td>
<td>12 weeks</td>
<td>I, B</td>
</tr>
<tr>
<td>Daily fixed-dose combination of glecaprevir (300 mg)/pibrentasvir (120 mg)(^b)</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>8 to 16 weeks(^c)</td>
<td>I, B(^c)</td>
</tr>
</tbody>
</table>

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\(^a\) Chronic kidney disease (CKD) stages: 1 = normal (eGFR >90 mL/min); 2 = mild CKD (eGFR 60-89 mL/min); 3 = moderate CKD (eGFR 30-59 mL/min); 4 = severe CKD (eGFR 15-29 mL/min); 5 = end-stage CKD (eGFR <15 mL/min)

\(^b\) This is a 3-tablet coformulation. Please refer to the prescribing information.

\(^c\) Patients in this group should be treated as would patients without CKD. Duration of glecaprevir/pibrentasvir should be based on presence of cirrhosis and prior treatment experience (please refer to appropriate section). As such, strength of rating may be lower for certain subgroups.

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### Recommendations for Patients With CKD Stage\(^a\) 1, 2, or 3

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>No dose adjustment is required when using:</td>
<td>I, A</td>
</tr>
<tr>
<td>• Daclatasvir (60 mg)(^b)</td>
<td></td>
</tr>
<tr>
<td>• Daily fixed-dose combination of elbasvir (50 mg)/grazoprevir (100 mg)</td>
<td></td>
</tr>
<tr>
<td>• Daily fixed-dose combination of glecaprevir (300 mg)/pibrentasvir (120 mg)(^c)</td>
<td></td>
</tr>
<tr>
<td>• Fixed-dose combination of ledipasvir (90 mg)/sofosbuvir (400 mg)</td>
<td></td>
</tr>
<tr>
<td>• Fixed-dose combination of sofosbuvir (400 mg)/velpatasvir (100 mg)</td>
<td></td>
</tr>
<tr>
<td>• Simeprevir (150 mg)</td>
<td></td>
</tr>
<tr>
<td>• Fixed-dose combination of sofosbuvir (400 mg)/velpatasvir (100 mg)/voxilaprevir (100 mg)</td>
<td></td>
</tr>
<tr>
<td>• Sofosbuvir (400 mg)</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Chronic kidney disease (CKD) stages: 1 = normal (eGFR >90 mL/min); 2 = mild CKD (eGFR 60-89 mL/min); 3 = moderate CKD (eGFR 30-59 mL/min); 4 = severe CKD (eGFR 15-29 mL/min); 5 = end-stage CKD (eGFR <15 mL/min)

\(^b\) Refer to the prescribing information and the section on HIV/HCV coinfecion for patients on antiretroviral therapy.

\(^c\) This is a 3-tablet coformulation. Please refer to the prescribing information.

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Case 2

- The patient is a 67-year-old white man who has come to your clinic to discuss treatment options for chronic hepatitis C virus (HCV) infection. He was recently diagnosed with genotype 3 HCV infection. There is a remote history of intravenous drug use during the Vietnam War. He notes that his abdomen had swelled after a recent variceal bleed and he described bloating. This has now resolved with low-dose diuretics, and he tells you that the abdominal bloating has resolved. A triple-phase computed tomography (CT) scan performed during his hospitalization demonstrated a nodular cirrhotic liver with trace ascites. The portal vessels were open.

- **Current Medications:**
  - Furosemide 20 mg/day
  - Spironolactone 50 mg/day
  - Carvedilol 3.125 mg twice daily
Allergies: None
Past Surgical History: Inguinal hernia repair
Social History: Alcohol use limited to weekends. No tobacco. He lives with his wife.
Physical Examination:
- General: obese male; weight 120 kg
- Vital signs unremarkable:
- HEENT: no scleral icterus
- Lungs: clear
- Heart: regular rate and rhythm with S1 and S2
- Abdomen: soft; bowel sounds present; palpable spleen; no obvious ascites
- Extremities: palmar erythema; no muscle wasting; no spiders
- Neurologic: normal
**Labs**

- WBC count: 3600 cells/mm$^3$
- Hemoglobin: 12.3 g/dL
- Platelet count: 52,000/mm$^3$
- Total bilirubin: 2.0 mg/dL
- INR: 1.3
- Albumin: 3.2 g/dL
- Aspartate aminotransferase (AST): 110 U/L
- Alanine aminotransferase (ALT): 58 U/L
- Alkaline phosphatase: 110 IU/L
- Creatinine: 1.2 mg/dL
Which of the following regimens would you choose to treat this patient’s HCV infection?

A. Daclatasvir plus sofosbuvir plus low-dose ribavirin for 12 weeks

B. Ledipasvir/sofosbuvir plus low-dose ribavirin for 12 weeks

C. Sofosbuvir plus low-dose ribavirin for 12 weeks

D. Sofosbuvir/velpatasvir plus weight-based ribavirin for 12 weeks

E. A or D would work

F. B or C would work
Genotype 3 and Cirrhosis

- Daily sofosbuvir/velpatasvir with weight-based ribavirin, or
- Daclatasvir plus sofosbuvir plus low-dose ribavirin for 12 week

- Genotype 3
  - ASTRAL-4 study (sof/velp) included genotype 3 patients with decompensated cirrhosis: SVR 85%
  - ALLY-1 trial (dac/sof) studied patient with genotype 3 and decompensated cirrhosis: SVR for this difficult group was 83%
- SVR for ledipasvir/sofosbuvir plus ribavirin was 65%

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Which of the following regimens would you choose to treat this patient’s HCV infection?

A. Daclatasvir plus sofosbuvir plus low-dose ribavirin for 12 weeks
B. Ledipasvir/sofosbuvir plus low-dose ribavirin for 12 weeks
C. Sofosbuvir plus low-dose ribavirin for 12 weeks
D. Sofosbuvir/velpatasvir plus weight-based ribavirin for 12 weeks
E. A or D would work
F. B or C would work
## Decompensated Cirrhosis Genotype 2 or 3 Infection

Recommended Regimens listed by evidence level and alphabetically for:

**Patients With Decompensated Cirrhosis**\(^a\) **Who Have Genotype 2 or 3 Infection and Are Ribavirin Eligible**

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>DURATION</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily fixed-dose combination sofosbuvir (400 mg)/velpatasvir (100 mg) with weight-based ribavirin</td>
<td>12 weeks</td>
<td>I, A</td>
</tr>
<tr>
<td>Daily daclatasvir (60 mg)(^b) plus sofosbuvir (400 mg) with low initial dose of ribavirin (600 mg, increase as tolerated)</td>
<td>12 weeks</td>
<td>II, B</td>
</tr>
</tbody>
</table>

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\(^a\) Includes CTP class B and class C patients who may or may not be candidates for liver transplantation, including those with hepatocellular carcinoma.

\(^b\) The dose of daclatasvir may need to be increased or decreased when used concomitantly with cytochrome P450 3A/4 inducers and inhibitors, respectively. Please refer to the prescribing information for daclatasvir.

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Case 3

- **Background:**
  - 54 year old white male with longstanding HIV/HCV coinfection transfers his care to your center and requests treatment for HCV
  - HIV controlled with efavirenz/tenofovir DP/emtricitibine for 15 years; HIV VL <20; CD4 count 560 cells/mm³
  - HCV: genotype 1A, HCV VL 2,000,000; no evidence of cirrhosis by ultrasound or elastography

- **PMH:** HIV, HCV, HTN, GERD; treated for syphilis X 2
- **SH:** lives with HIV positive partner; not sure where he got HCV. History of high risk sexual activity in the distant past. Occasional marijuana, rare alcohol.
- **NKDA**
**Database**

- **Medications**
  - Efavirenz/tenofovir DP/emtricitibine daily
  - Omeprazole 40 mg daily
  - HCTZ 25 mg daily
- **Exam:** well-appearing male in NAD
- **Labs:** as above
  - WBC 4800 cells/mm3
  - AST 58 U/mL, ALT 95 U/mL
  - Albumin 3.9 gm/dL
  - Platelets 190,000
  - T bili 3.8 mg/dL
  - Creatinine 0.9 mg/dL
  - INR 1.1
What would you do?

A. Continue current HIV regimen, treat HCV with ledipasvir/sofosbuvir for 8 weeks

B. Switch regimen to dolutegravir/tenofovir alefenamid/emtricitibine and treat with elbasvir/grazoprevir

C. Switch regimen to dolutegravir/tenofovir alefenamid/emtricitibine and treat with glecaprevir/pibrentasvir

D. Continue current regimen, treat HCV with reduced dose of daclatasvir plus sofosbuvir

E. Defer treatment for now
What do we know about HIV/HCV co-infection?

- Co-infected patients suffer more liver-related morbidity/mortality, nonhepatic organ dysfunction, and overall mortality than their HCV monoinfected counterparts
- HIV infection is independently associated with advance fibrosis/cirrhosis in co-infected patients, even in the era of potent ART
  - Progression occurs even in the presence of effective ART
- HCV progresses more rapidly in the co-infected patients
  - Requires repeated liver monitoring if not treated
- HCV treatment must be a priority for caregivers


Treatment of HIV/HCV Co-infection

• Efficacy rates for treating HCV in co-infected patients are remarkably similar to the monoinfected HCV population
• Adverse event rates are also quite similar
• DRUG INTERACTIONS ARE THE GREATEST PITFALL IN THIS POPULATION
  • DAAs interact with MANY antiretrovirals
  • Other concomitant medications must also be evaluated and considered
• In terms of HIV, treatment interruption is NOT recommended


Things to consider in treating HIV/HCV coinfection

- Daclatasvir metabolized by cytochrome P540 and required dose adjustments if ritonavir as well as **efavirenz**, etravirine and neviripine
- **Efavirenz**, etravirine, and all boosted drugs are not recommended for use with elbasvir/grazoprevir due to moderate or strong enzyme inductions
- **Efavirenz** reduces velpatasvir exposure significantly
- Glecaprevir absorption is pH dependent (50% reduction on 40 mg omeprazole daily)
- Ledipasvir and velpatasvir increase tenofovir DP levels: do not use if eGFR <60 mL/min (Tenofovir AF likely OK)
What would you do?

• A. Continue current HIV regimen, treat HCV with ledipasvir/sofosbuvir for 8 weeks
• B. Switch regimen to dolutegravir/tenofovir alefenamide/emtricitibine and treat with elbasvir/grazoprevir
• C. Switch regimen to dolutegravir/tenofovir alefenamide/emtricitibine and treat with glecaprevir/pibrentasvir
• D. Continue current regimen, treat HCV with reduced dose of daclatasvir plus sofosbuvir
• E. Defer treatment for now
<table>
<thead>
<tr>
<th>NOT RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antiretroviral treatment interruption to allow HCV therapy is <strong>not</strong> recommended.</td>
<td>III, A</td>
</tr>
<tr>
<td>Elbasvir/grazoprevir should <strong>not</strong> be used with cobicistat, efavirenz, etravirine, nevirapine, or any HIV protease inhibitor.</td>
<td>III, B</td>
</tr>
<tr>
<td>Glecaprevir/pibrentasvir should <strong>not</strong> be used with atazanavir, ritonavir-containing antiretroviral regimens, efavirenz, or etravirine.</td>
<td>III, B</td>
</tr>
<tr>
<td>Sofosbuvir/velpatasvir should <strong>not</strong> be used with efavirenz, etravirine, or nevirapine.</td>
<td>III, B</td>
</tr>
<tr>
<td>Sofosbuvir/velpatasvir/voxilaprevir should <strong>not</strong> be used with ritonavir-boosted atazanavir, efavirenz, etravirine, or nevirapine.</td>
<td>III, B</td>
</tr>
<tr>
<td>Sofosbuvir-based regimens should <strong>not</strong> be used with tipranavir.</td>
<td>III, B</td>
</tr>
<tr>
<td>Paritaprevir/ritonavir/ombitasvir plus dasabuvir should <strong>not</strong> be used with darunavir, efavirenz, ritonavir-boosted lopinavir, ritonavir-boosted tipranavir, etravirine, nevirapine, cobicistat, or rilpivirine.</td>
<td>III, B</td>
</tr>
<tr>
<td>Paritaprevir/ritonavir/ombitasvir with or without dasabuvir should <strong>not</strong> be used in HIV/HCV-coinfected individuals who are not taking antiretroviral therapy.</td>
<td>III, B</td>
</tr>
<tr>
<td>Ribavirin should <strong>not</strong> be used with didanosine, stavudine, or zidovudine.</td>
<td>III, B</td>
</tr>
<tr>
<td>Simeprevir should <strong>not</strong> be used with cobicistat, efavirenz, etravirine, nevirapine, or any HIV protease inhibitor.</td>
<td>III, B</td>
</tr>
</tbody>
</table>
### Drug Interactions Between Direct-Acting Antivirals and Antiretroviral Drugs—Preferred Regimens

Green indicates coadministration is safe; yellow indicates a dose change or additional monitoring is warranted; and pink indicates the combination should be avoided.

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ritonavir-boosted atazanavir (ATZ)</strong></td>
<td>▲ LDV ▲ ATZ *</td>
<td>▲ LDV ▲ ATZ *</td>
<td>▲ ELB ▲ ATZ</td>
<td>ND</td>
<td>▲ ATZ</td>
</tr>
<tr>
<td><strong>Ritonavir-boosted darunavir (DRV)</strong></td>
<td>▲ LDV ▲ DRV *</td>
<td>▲ DRV *</td>
<td>▲ ELB ▲ DRV</td>
<td>ND</td>
<td>▲ DRV</td>
</tr>
<tr>
<td><strong>Ritonavir-boosted lopinavir (LPV)</strong></td>
<td>ND</td>
<td>▲ LPV *</td>
<td>▲ LPV</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Ritonavir-boosted lopinavir (TPV/r)</strong></td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Elavirenz (EFV)</strong></td>
<td>▲ LDV ▲ EFV *</td>
<td>▲ LDV ▲ EFV</td>
<td>▲ ELB ▲ EFV</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Rilpivirine (RPV)</strong></td>
<td>▲ LDV ▲ RPV</td>
<td>▲ RPV</td>
<td>▲ ELB ▲ RPV</td>
<td>▲ VOX ▲ RPV</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Etravirine (ETV)</strong></td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Dolutegravir (DTG)</strong></td>
<td>▲ LDV ▲ DTG</td>
<td>▲ DTG</td>
<td>▲ ELB ▲ DTG</td>
<td>▲ GLE ▲ DTG</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Maraviroc (MVC)</strong></td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>Tenofovir (TFV) disoproxil fumarate</strong></td>
<td>▲ LDV ▲ TFV</td>
<td>▲ TFV</td>
<td>▲ ELB ▲ TFV</td>
<td>ND</td>
<td>▲ TFV</td>
</tr>
<tr>
<td><strong>Tenofovir (TFV) alafenamide</strong></td>
<td>▲ LDV ▲ TFV</td>
<td>▲ TFV</td>
<td>ND</td>
<td>▲ GLE ▲ TFV</td>
<td>▲ TFV</td>
</tr>
</tbody>
</table>

ND, No data

*Caution only with tenofovir disoproxil fumarate

*Increase in tenofovir depends on which additional concomitant antiretroviral agents are administered.

*Avoid tenofovir disoproxil fumarate in patients with an eGFR <60 ml/min; tenofovir concentrations may exceed those with established renal safety data in individuals on ritonavir- or cobicistat-containing regimens.

*Studied as part of fixed-dose combinations with ledipasvir/sofosbuvir or sofosbuvir/velpatasvir plus TAF, entecavir, elvitegravir, and cobicistat.
Case 4

- A 27-year old HIV-positive male presents to your clinic with complaints of low-grade fever and fatigue
- Admits to high risk sexual exposures with multiple partners but denies illicit drug use
- Currently taking only dolutegravir/abacavir/lamivudine daily
- Examination reveals mild scleral icterus
- Labs reveal ALT 220 IU/mL; T bili 3.9 mg/dL; HIV VL <20 copies/mL
Which of the following are true regarding acute HCV infection?

- A. HCV antibody testing may be negative during the first 6 weeks after exposure
- B. Viral fluctuations of $> 1 \log\text{IU/mL}$ may indicate acute infection with HCV
- C. ALT may be normal during acute HCV infection
- D. HCV RNA may be transiently negative during acute HCV infection
- E. All of the above
Which of the following are true regarding acute HCV infection?

• A. HCV antibody testing may be negative during the first 6 weeks after exposure
• B. Viral fluctuations of > 1 log IU/mL may indicate acute infection with HCV
• C. ALT may be normal during acute HCV infection
• D. HCV RNA may be transiently negative during acute HCV infection
• E. All of the above
Acute HCV Infection

- Highest risk is with repeated parenteral exposure during IVDA
- Increased sexual transmission in HIV-infected men with unprotected sex
- Predictors of spontaneous clearance include jaundice, elevated ALT level, female sex, younger age, genotype 1 infection, and IL28B gene polymorphisms
- The best laboratory evidence to support a diagnosis of acute HCV infection is: (1) a positive HCV RNA test in the setting of a negative HCV antibody test (identification during the seronegative window period), or (2) a positive HCV antibody test after a prior negative HCV antibody test (seroconversion).

# Acute HCV Infection

## Table. Interpretation of Blood Tests for Diagnosis of Acute HCV Infection

<table>
<thead>
<tr>
<th>TEST</th>
<th>INTERPRETATION FOR DIAGNOSIS OF ACUTE HCV</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCV Antibody</td>
<td>• Test may be negative during the first 6 weeks after exposure.</td>
</tr>
<tr>
<td></td>
<td>• Seroconversion may be delayed or absent in immunosuppressed individuals.</td>
</tr>
<tr>
<td></td>
<td>• Presence of HCV antibody alone does not distinguish between acute vs chronic infection.</td>
</tr>
<tr>
<td></td>
<td>• A low signal-to-cutoff ratio may be present during acute HCV infection or represent a false-positive result.</td>
</tr>
<tr>
<td>HCV RNA</td>
<td>• Viral fluctuations $&gt;1 \log_{10}$ IU/mL may indicate acute HCV infection.</td>
</tr>
<tr>
<td></td>
<td>• HCV RNA may be transiently negative during acute HCV infection.</td>
</tr>
<tr>
<td></td>
<td>• Presence of HCV RNA alone does not distinguish between acute vs chronic infection.</td>
</tr>
<tr>
<td>ALT</td>
<td>• Fluctuating ALT peaks suggest acute infection.</td>
</tr>
<tr>
<td></td>
<td>• ALT may be normal during acute HCV infection.</td>
</tr>
<tr>
<td></td>
<td>• ALT may be elevated due to other liver insults, such as alcohol consumption.</td>
</tr>
</tbody>
</table>

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Figure. Testing Algorithm for Discrete Recognized Hepatitis C Virus (HCV) Exposure

HCV antibody (Ab) negative, HCV RNA negative
No HCV infection

HCV Ab positive\(^b\), HCV RNA negative
Prior resolved infection

HCV RNA positive or seroconversion
Acute HCV infection

HCV Ab negative, HCV RNA positive
Acute infection already present

Repeat testing to assess for outcome of acute infection\(^a,c\)
Monitor HCV RNA and alanine aminotransferase (ALT) for at least 12 weeks
Spontaneous clearance

HCV RNA negative x 2, 12 weeks apart
Chronic HCV infection

HCV RNA positive at 6 months
See initial treatment of chronic HCV infection

HCV RNA negative and HCV Ab negative, or no seroconversion for 6 months:
No HCV infection
For prior resolved infection, if HCV RNA remains negative:
No HCV infection

Counsel on risk reduction
Annual testing for high-risk patients

Exposure
Baseline testing within 48 hours of exposure\(^a\)

48 hours
12 weeks
24 weeks

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# Medical Management and Monitoring of Acute HCV Infection

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular laboratory monitoring is recommended in the setting of acute HCV infection. Monitoring HCV RNA (eg, every 4 to 8 weeks) for 6 to 12 months is also recommended to determine spontaneous clearance versus persistence of HCV infection.</td>
<td>I, B</td>
</tr>
<tr>
<td>Counseling is recommended for patients with acute HCV infection to avoid hepatotoxic insults, including hepatotoxic drugs (eg, acetaminophen) and alcohol consumption, and to reduce the risk of HCV transmission to others.</td>
<td>I, C</td>
</tr>
<tr>
<td>Referral to an addiction medicine specialist is recommended for patients with acute HCV infection related to substance use.</td>
<td>I, B</td>
</tr>
</tbody>
</table>
### Antiviral Therapy

#### Recommended Treatment for Patients With Acute HCV Infection

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the clinician and patient decide that a delay in treatment initiation is acceptable, monitoring for spontaneous clearance is recommended for a minimum of 6 months. When the decision is made to initiate treatment after 6 months, treating as described for chronic hepatitis C is recommended (see Initial Treatment of HCV Infection).</td>
<td>IIa, C</td>
</tr>
<tr>
<td>If a decision is made to initiate treatment during the acute infection period, monitoring HCV RNA for at least 12 to 16 weeks before starting treatment is recommended to allow time for possible spontaneous clearance.</td>
<td>IIa, C</td>
</tr>
</tbody>
</table>

#### Recommended Regimens for Patients With Acute HCV Infection

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owing to high efficacy and safety, the same regimens that are recommended for chronic HCV infection are recommended for acute infection.</td>
<td>IIa, C</td>
</tr>
</tbody>
</table>
HCV in Pregnancy

- Pregnancy does not appear to negatively affect chronic HCV infection.
- HCV-infected pregnant women have increased adverse perinatal outcomes.
- Maternal to child transmission occurs at a rate of 5-15% (3-5% progress to chronic infection).
- Breastfeeding is not a risk for maternal to child transmission, although most recommend to avoid if there are skin breaks.
- DAA therapy is currently NOT recommended to pregnancy given the lack of data.
  - Ribavirin to be avoided as it is a known teratogen.


HCV in Children

- All children born to HCV-infected women should be tested
  - RNA assays during the first year
  - Antibody testing after 18 months
  - Controversy re early testing (no treatment occurs prior to age 3)
- NHANES estimates suggested 0.2-0.4% of 6-19 year olds have chronic infection

https://www.hcvguidelines.org/contents
Questions?