Treating Hepatitis C in the Indian Health Service

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Disclosures
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• Matt Baker
• IHS Hepatitis C Providers
Case Presentation

- A 52 year-old male American Indian store owner comes in to establish primary care with his new IHS physician. He does not drink alcohol but injected drugs once when he was in high school in 1978. He is found to have systolic hypertension, an LDL of 192 and an ALT of 48 after evaluation. Review of the EHR reminders shows that he is due for an influenza vaccine, and HIV serology and a Hepatitis C baby boomer screening test with reflex viral load. He is found to be HIV negative but HCV Antibody positive with a viral load of 150,000 iu/ml.
Why should we care?
The big unknown...

- 2.7-3.9 million Americans have HCV
- 45-85% don’t know they have it
- Future cost to society is huge
HCV Deaths and Deaths from Other Nationally Notifiable Infectious Diseases,* 2003-2013

* TB, HIV, Hepatitis B and 57 other infectious conditions reported to CDC

Forecasted Annual Incident Cases of Decompensated Cirrhosis (DCC), Hepatocellular Carcinoma (HCC), Liver Transplants, and Deaths Associated with Persons with Chronic Hepatitis C Infection and No Liver Cirrhosis in the United States in 2005

Diabetes and Hepatitis C

• Risk increased by 70% compared to non-infected controls (OR 1.7)

• Successful HCV treatment associated with decrease in insulin resistance and reduction in incidence of diabetes mellitus

How about the Indian Health Service?

Reported cases/100,000 population

Source: National Notifiable Diseases Surveillance System (NNDSS)
A 300% Increase in Hepatitis C–related Hospitalization for AI/AN – 1995-2007

Byrd KK, et al Pub Hlth Rep 2011
HCV–Related Mortality by Race/Ethnicity - 2007 compared to 2011

Byrd KK, et al Pub Hlth Rep 2011
HCV in IHS

• “Barbell” shaped epidemiology curve

• 1945-1965 Birth Cohort patients, from exposure >20 years ago

• Younger patients, often from exposure to injecting drug use

• Initial data shows an estimated 50%-50% split of HCV burden in these two groups
HCV Screening 1945-1965 birth cohort (federal SUs)

• 42% screened as of December 2015 (45,486/108,453)
• Wide variability in individual facilities (range 2%-82%)
• Tracked as Developmental GPRA measure
• EHR reminder available
HCV estimates for IHS

- Among 1945-1965 birth cohort, HCV Ab+ seroprevalence range of 2%-12% depending on region
- Of birth cohort, most are historical infections and about 25% have advanced liver disease due to HCV and need priority treatment
- Estimate about 7000 chronic HCV+ IHS patients nationwide have stage 3 or 4
- Treatment estimates currently <250 patients/year
At this rate it will take 28 years to catch up!
What can be done in the IHS?

- Enhance Screening
- Enrolling positive patients in care
- Treating all patients with Hepatitis C at every IHS Area
## TABLE 2. Hepatitis C virus antibody testing (cumulative) among persons born during 1945–1965, by Indian Health Service federally operated facilities and region, * 2015

<table>
<thead>
<tr>
<th>Region</th>
<th>No. of facilities</th>
<th>Total eligible population</th>
<th>No. tested (coverage)</th>
<th>Coverage range among facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern plains</td>
<td>21</td>
<td>31,206</td>
<td>9,927 (31.8)</td>
<td>18.4%–66.6%</td>
</tr>
<tr>
<td>Southern plains</td>
<td>12</td>
<td>9,579</td>
<td>3,009 (31.4)</td>
<td>6.5%–70.5%</td>
</tr>
<tr>
<td>Southwest</td>
<td>21</td>
<td>64,120</td>
<td>26,424 (41.2)</td>
<td>1.9%–69.4%</td>
</tr>
<tr>
<td>East</td>
<td>3</td>
<td>602</td>
<td>188 (31.2)</td>
<td>15.6%–44.7%</td>
</tr>
<tr>
<td>Pacific coast</td>
<td>6</td>
<td>6,812</td>
<td>2,444 (35.9)</td>
<td>21.3%–75.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>62</strong></td>
<td><strong>112,319</strong></td>
<td><strong>41,992 (37.4)</strong></td>
<td><strong>1.9%–75.1%</strong></td>
</tr>
</tbody>
</table>

* Northern plains: Iowa, Minnesota, Montana, Nebraska, South Dakota; Southern plains: Oklahoma, Texas; Southwest: Arizona, Colorado, New Mexico, Nevada, Utah; East: Maine, Massachusetts, North Carolina; Pacific coast: Idaho, Oregon, Washington.
Hepatitis C testing

• Test of Choice in 2016:
  • Screening **EIA with reflex** Reverse Transcriptase PCR
    • Qualitative PCR- yes no answer
    • Quantitative PCR- how much virus is present **preferred**
Hepatitis C screening recommendations

• Continue Risk based screening
  • h/o Injection and Inhaled Drug Use
  • HIV infected
  • Alcoholics
  • Unexplained hepatitis

• CDC recommendations: Screen all Baby Boomers born between 1945 and 1965 (inclusive)
  • Utilize EHR Reminders as a proven practice to enhance screening
Hepatitis C Evaluation

• Obtain the following
  • Hepatitis C viral load
  • Hepatitis C genotype
  • HIV serology
  • Hepatitis B, Hepatitis A antibodies

• Vaccinate for Hep A and Hep B if not immune
Cirrhosis assessment

• Blood Tests
  • Commercial assays (Fibrosure) → expensive
  • Liver biopsy → Risky, invasive, expensive
  • APRI score: AST/ULN AST/Platelet count x 100
    • >0.7 → Hepatic fibrosis (Sens 77%, Spec 72%)
    • >1.0 → Cirrhosis (Sens 76%, Spec 72%)
Cirrhosis surveillance

• Upper endoscopy to evaluate for varices
• Ultrasound and Alpha Fetoprotein every 6-12 months
Who to treat

Ultimate goal:

Treat *every* patient infected with HCV
Who to treat

• Factors to consider when deciding about therapy:
  • Advanced Fibrosis (Metavir 3 score on biopsy or commercial assay)
  • Compensated Cirrhosis (Metavir 4)
  • Liver Transplant patient with HCV
  • Coinfection with HIV or HBV
  • Extrahepatic Disease
    • Cryoglobulinemia with vasculitis
    • Proteinuria, Nephrotic Syndrome, MPGN
Who to treat

• High risk to transmit HCV
  • HIV positive Men who have Sex with Men
  • Injection drug users
  • Incarcerated
  • Dialysis
Who not to treat

• People with short life expectancy (<12 months) that cannot be remediated by treating HCV or doing a liver transplant
Hepatitis C Evaluation

• Mental Health Evaluation
• Treat substance abuse (prefer sobriety BUT NOT MANDATORY)
• Ensure Birth control
• Screen for TB and Diabetes
• Assess income and insurance status
  • Drug assistance programs
  • Health Insurance
HCV Direct Acting Agents

• NS3-4A Protease inhibitors “previr”
  • Simeprevir, Paritaprevir, Grasoprevir

• NS5B Polymerase inhibitor “buvir”
  • Nucleoside – Sofosbuvir
  • Non-nucleoside – Dasabuvir

• NS5A replication complex inhibitor “asvir”
  • Ledipasvir, Ombitasvir, Daclatasvir, Elbasvir
Hepatitis C Treatment

• Genotype 1a:
  • Elbasvir/grazoprevir 1 po daily (Zepatier™)
  • Ledipasvir /Sofosvubir 1 po daily (Harvoni™)
  • Paritaprevir /Ritonavir /Ombitasvir/ Dasabuvir Ribavirin (Viekira Pak™)
  • Sofosbuvir/Simeprevir +/- Ribavirin daily

• Duration
  • Usually 12 weeks
  • See guidelines for patients with cirrhosis or baseline drug resistance
Hepatitis C Treatment

• **Genotype 1b:**
  - Elbasvir/grazoprevir 1 po daily **for 12 weeks**
  
  - Ledipasvir/Sofosvubir 1 po daily (Harvoni\textsuperscript{TM}) **for 12 weeks**
  
  - Paritaprevir /Ritonavir /Ombitasvir/ Dasabuvir (Viekira Pak\textsuperscript{TM}) **for 12 weeks** (add ribavirin if cirrhotic)
  
  - Sofosbuvir 400 mg plus Simepravir 150 mg **for 12 weeks** (treat 24 weeks if cirrhotic)
Hepatitis C Treatment

• Genotype 2
  • Daclatasvir/Sofosbuvir daily for 12 weeks if not cirrhotic
  • Ribavirin daily plus Sofosbuvir daily
  • Duration
    • for 12 weeks if not cirrhotic, 16-24 weeks if cirrhotic
Hepatitis C Treatment

• Genotype 3
  • Daclatasvir/Sofosbuvir daily for 12 weeks if not cirrhotic (24 if cirrhotic)
  • Ribavirin daily plus Sofosbuvir plus PEG-Interferon daily for 12 weeks
Monitoring Therapy

• Monitor CMP, CBC after 1 month of therapy

• Monitor HCV viral load
  • 4 weeks after starting therapy
  • At the end of therapy
  • 12 weeks after completing therapy (SVR)
Cure Rates (Sustained Virologic Response)

• Genotype 1
  • Harvoni\textsuperscript{TM} 97-99%
  • Viekira Pak\textsuperscript{TM} 95.3%

• Genotype 2 94%

• Genotype 3 84%
How do we afford treatment for our patients?

• HCV disproportionately effects AI/AN
• Early treatment is proven to reduce long-term morbidity and mortality.
• New treatments involving once-daily therapy for 12 weeks are better tolerated and have improved adherence.
• Drug costs remain a major barrier to patient access to treatment.

Leston J, Finkbonner J, JAMA on-line May 26, 2016
Paying for Treatment

• Formulary or non-formulary approaches are utilized in some sectors of IHS.
• CMS and some third party insurers will pay for antiviral therapy for HCV infection.
  • Why?
    • Liver transplant cost ~$300,000 + $25,000/yr for antirejection drugs
    • Cirrhosis cost ~$25,000 per admission
• Various eligibility criteria can still limit access

• Patient Assistance Programs
  • Drug company sponsored programs that provide free medication
    • Most meet low-income eligibility
    • Non-formulary status has been critical
# IHS Treatment Costs

<table>
<thead>
<tr>
<th>Drug</th>
<th>IHS Price</th>
<th>VA (CMOP)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ledipasvir/sofosbuvir (Harvoni®)- 28 tablets</td>
<td>$12,604.16</td>
<td>$5,267.00</td>
</tr>
<tr>
<td>Ombitasvir/paritaprevir/ritonavir/dasabuvir (Viekira Pak®)- 28 dose cards</td>
<td>$12,274.70</td>
<td>$5,216.76</td>
</tr>
<tr>
<td>Elbasvir/grazoprevir (Zepatier®)- 28 tablets</td>
<td>$12,214.55</td>
<td>$5,216.76</td>
</tr>
<tr>
<td>Ombitasvir/paritaprevir/ritonavir (Technivie®)- 28 Day Pack</td>
<td>$12,274.70</td>
<td>$5,216.76</td>
</tr>
<tr>
<td>Daclatasvir 30mg (Daklinza®)- 28 tablets</td>
<td>$14,144.82</td>
<td>$12,372.91</td>
</tr>
<tr>
<td>Daclatasvir 60mg (Daklinza®)- 28 tablets</td>
<td>$14,264.42</td>
<td>$12,372.91</td>
</tr>
<tr>
<td>Simeprevir (Olysio®)- 28 capsules</td>
<td>$14,714.26</td>
<td>$14,714.26</td>
</tr>
<tr>
<td>Sofosbuvir (Sovaldi®)- 28 tablets</td>
<td>$15,223.92</td>
<td>$15,223.92</td>
</tr>
</tbody>
</table>
IHS Anti-HCV Drug trends
Paying for Treatment

• Klamath Tribal Health & Family Services
  • “We make it our goal to attempt to provide successful treatment to every patient who is in need. This is emphasized to our providers and to patients.”
    1. Appointment with PCP to evaluation/treatment.
    2. Maintain an HCV panel
    3. Refer “reasonable candidates” to local gastroenterology group
    4. If therapy recommended, provide support in obtaining medication
       a. Oregon Health Plan (Medicaid) or Medicare
       b. Private Insurance
       c. Patient Assistance Programs
       d. Local non-formulary process
Paying for Treatment

• Klamath Tribal Health & Family Services
  • Rationale for Treatment
    • HCV treatment is a one-time per patient expense (for most patients)
    • Proactively work to accommodate HCV treatment costs into pharmacy budget
      • Effectively bill insurance programs for drugs
      • Work to sign up all eligible patients for third-party resources (CMS, private insurance)
      • Manage the clinic formulary well ("Listen to the IHS NPTC. They seem to know what they are doing.")
      • Utilize internal drug use policies to improve use and reduce costs.
      • Hire a pharmacy billing technician. Improved collections should more than pay for the position.
      • Utilize VA prime vendor, not HRSA 340b
    • Recognize that cumulative drug costs for other chronic diseases approach or exceed the costs for HCV treatment course (rheumatoid arthritis, diabetes, psychiatric conditions, etc.)
    • “Long story short, don’t nit pick any one drug cost. Effective overall pharmacy management can help to mitigate most unexpected one-time pharmacy costs.”
Supports for Treatment

• Previously, many patients with HCV received treatment under the care of hepatologist or infectious disease specialist.

• The safety of newer treatments and the growing number of patients is shifting care more and more to primary care.

• Extension for Community Healthcare Outcomes (ECHO)
  • UNM developed model for teleconsultation
  • IHS- 1st & 3rd Wed.,12:00-1:00 pm MDT

43
Cherokee Nation HCV Program
Cascade of Care
Recommendations

- Screen for Hepatitis C Infection (High-risk, Baby Boomers).
- Use a confirmatory test for all positives.
- Educate all HCV + patients on liver protection (alcohol/drugs), prevention of spread, and vaccinate against Hepatitis A & B.
- Create a HCV panel and risk-stratify patients.
- Use a multi-pronged approach to providing treatment (CMS, third-party, patient assistance programs, CMOP).
- Utilize ECHO supports.
Hepatitis C Rx:

You can do this!!
Contact us

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