Hepatitis C in Corrections: The Future is Now

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APHA panel
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Presenter Disclosures:

NONE
Natural History
Natural History of Hepatitis C

HIV-Negative

Exposure (Acute Hepatitis)

Resolution: 15%

Persistence (chronic): 85%

Cirrhosis: 20%

- ESLD: 3%/yr
- HCC: 4%/yr

Time (yrs):

- 10
- 20
- 30

Transplant

Death

Mandell: Principles & Practice of Infectious Disease, 7th Ed;
Why Do We Care?

Normal Liver
• Filters/processes gut nutrients
• Produces proteins
• Detoxifies drugs and waste products (ammonia)
• Processes bile

Cirrhosis
• Portal Hypertension
• Malnutrition
• Esophageal Varices
• Ascites/Edema
• Encephalopathy & Mental Slowness
• Jaundice
Forecasted 2010-2060 Annual HCV-Related Deaths in the United States Persons with Chronic Hepatitis C and no Cirrhosis in 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Deaths</th>
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<tbody>
<tr>
<td>2010</td>
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<tr>
<td>2014</td>
<td>10,000</td>
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<tr>
<td>2018</td>
<td>15,000</td>
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<tr>
<td>2022</td>
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<td>2034</td>
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<tr>
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<td>2042</td>
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Hepatitis C Treatment Goal

• Reduce:
  • All-cause mortality
  • Liver-related adverse consequences
    - End-stage liver disease
    - Hepatocellular carcinoma

• Achieve virologic cure = sustained viral response (SVR)

• Ideally treat all HCV-infected early, before development of severe liver disease or other complications
  [except those with life-expectancy ≤ 12 mos due to non-HCV-related causes]
Treatment Outcomes
Evolution of Therapy for Hepatitis C Progression of SVR Rates

Timeline

Sustained Virologic Response (%)

- IFN 6m: 6%
- IFN 12m: 16%
- IFN + RBV 6m: 34%
- IFN + RBV 12m: 42%
- PEG 12m: 39%
- PEG + RBV 12m: 55%
- PEG + RBV +PI 6-12m: 70%
- PEG + RBV +SOF 3m: 90%
- PEG + RBV+SOF/LDV: 95%
Advantages of Sofosbuvir-Based Regimens

- Superior SVR rates
- Lower rate of adverse events
- Shorter treatment duration
- Lower pill burden
- Few drug-drug interactions
- All oral regimen possible
- Less intense lab and clinical monitoring
- No food requirements
- Can be used in patients pre- and post-transplant
- As effective in persons co-infected with HIV

- BUT, a bit more costly!! (insert sarcasm here)
Treatment Outcomes

• Correctional setting can be an ideal place to provide treatment
  - Less competing priorities: housing, food
  - Structure of day
  - Less drug use, chemical dependency services
  - Close clinical oversight
  - Potential supervision for medication administration

• Rates of sustained viral response in corrections were at least as good, if not better than community, when using peg-interferon & ribavirin

Allen 2003; Maru 2008
Treatment Prioritization
Who to Treat

- Chronic HCV infection

- The need to prioritize
  - Limitations of workforce
  - Societal resources - financial
  - Treat as many as resources allow

- How to prioritize
  - Those that will derive the most benefit – highest risk of complications
  - Those that have the greatest impact on further transmission
Highest Priority

- Advanced fibrosis & compensated cirrhosis (Metavir F3 and F4)
- Pre- & post-liver transplant recipients
- Severe extrahepatic complications of HCV
  - Cryoglobulinemia with end-organ manifestations
  - HCV renal disease
- Co-existent liver disease, e.g. Hepatitis B
- HIV co-infection
Transmission Reduction Benefits

• MSM with high-risk sexual practices, especially if HIV+

• Active & recent injection drug users

• Incarcerated persons

• Persons on long-term hemodialysis
Public Health Opportunity
What Is The Role of Corrections?

• >90% of incarcerated persons release back to the community

• Any public health program with a goal to address the Hep C epidemic NEEDS to include corrections to be effective

• Corrections is an ideal setting to address every aspect of Hep C
  - Screening
  - Linkage to care
  - Education
  - Prevention
  - Treatment

• It becomes crucial to move beyond the silos and form interagency collaborations
Summary

Treatment for individual cure – i.e. medically necessary care
- With shortened treatment course more eligible
- Quotas due to workload no longer valid
- Prior treatment failures, now have treatment options
- With the Affordable Care Act, can more be deferred to the community (at least in some states)? Less cost?
- How to prioritize treatment now vs. waiting?
- Can we defer treatment until later stages of fibrosis?
  - Harder to treat, the more advanced the fibrosis/cirrhosis
  - Once cirrhotic, even if treated, ongoing risk of liver cancer & decompensation
  - Burden of more advance disease will increase with aging of baby boomers
Summary

Treatment for public health
- Majority of epidemic behind walls (17% vs. 1-2%)
- Need screening programs to help identify cases
- >90% of inmates release back to the community
- Treatment as prevention, like HIV
- Prior barriers side effects, low efficacy & cost, now just cost
- The future is to treat everyone, regardless of extent of liver disease
- Opportunity for interagency partnerships

Who pays???