OPIOIDS AND HEPATITIS C

Andrew Reynolds
No conflicts of interest
THE OPIOID EPIDEMIC

• 11.5 million people misused prescription opioids (2016)
  – 2.1 million did so for the first time
  – 2.4 million had symptoms consistent with opioid use disorder

• Many people who misuse prescription opioids progress to injection of other opioids (e.g., heroin), which has resulted in increases in HIV and HCV
  – Heroin use increased by 60% from 2002 to 2013

• Injected opioids have increased bacterial infections (eg, endocarditis, osteomyelitis, and skin/soft tissue infections) (2000 to 2013)
  – Hospitalizations related to PWID increased from 7.0% to 12.1%
  – Injection-related endocarditis hospitalizations increased from 27.1% to 42.0% in those 15-34 yrs
  – Hospitalizations in whites increased from 40.2% to 68.9%

CDC. New hepatitis C infections nearly tripled over five years. May 11, 2017. CDC. HIV and injection drug use.
Number of life time PWID – 6.6 million

Number of persons injecting in past year - 775,000
  Recent PWID with HCV- 334,000 (43%)

HCV incidence among active/recent PWID: 23/100PY

Persons with HCV - 3.5 M (2010)
  1.3M (37%) with history of injection drug use
  1.75 (49%) – no reported risks for HCV infection

New HCV infections – 33,900 (2015)
  39% provide risk information; 80% cite injection drug use
Increasing Prescription Opioid Use

Increasing Opioid Injection → HIV and HCV Transmission
HEPATITIS C TRANSMISSION: SHARING OF INJECTION EQUIPMENT

- Sharing syringes can transmit HCV

- HCV can survive in a syringe for up to 63 days

- Sharing of injection equipment—cookers, cotton filters, water, etc—can transmit HCV
TRANSMISSION VIA CONTACT WITH CONTAMINATED BLOOD: PREPARATION EQUIPMENT

Filters

Cookers

Water

Surfaces

Zibbell J, CDC, Presented as part of Hepatitis C Prevention Opportunities Among PWID, April 28, 2015.
HCV TRANSMISSION

Bloody fingers

Fingers on cooker and in solution

Zibbell J, CDC, Presented as part of Hepatitis C Prevention Opportunities Among PWID, April 28, 2015.
THE EXCEPTIONAL VIRULENCE OF HCV

• HCV can survive in syringes for up to 63 days (Paintsil E, JID 2010);

• HCV can survive on surfaces for up to 16 days and perhaps longer (Doerrbecker J, JID 2013);

• HCV can survive in water for up to 21 days; certain containers—plastic bottles and aluminum cans—can re-infect fresh water even after cleaning (Doerrbecker J, JID 2013);

• HCV can survive in a cotton filter for 24 hours; 48 hours if wrapped in cotton (Thibault V, JID 2011);

• HCV has been detected in all manner of drug using equipment: cookers, cotton, water, filters, even alcohol wipes (Thibault V, JID 2011)
OPIOID OVERDOSE AWARENESS

- Our clients/patients should all be educated about overdose prevention and, if possible, prescribed naloxone and trained in how to use it;

- People with no interest in or little experience with opioids can be caught unawares by stimulants that are laced with fentanyl and OD

- San Francisco has lost people who don’t use opioids because their drug of choice was contaminated but were not prepared for fentanyl
Fentanyl has made its way into the drug supply and is leading to opioid overdoses in people who think that they aren’t using opioids.

Between 2012 and 2016, deaths involving cocaine and synthetic opioids have increased 23x.

Connecticut saw a 420% increase in overdose deaths involving cocaine and fentanyl in the past 3 years.

Fentanyl-laced cocaine and other non-opioids has resulted in overdose deaths across the United States and Canada.
AASLD/IDSA GUIDELINES: WHO SHOULD BE TREATED FOR HCV?

- Everyone!
- Substance use is not a contraindication for treatment.
- For more detailed recommendations regarding HCV in PWID, check out: “Recommendations for the management of hepatitis C virus infection among people who inject drugs.” J. Grebely, IJDP 26 (2015) 1028-1038
WHAT DO WE KNOW ABOUT HCV TREATMENT IN PWID?

- HCV treatment does not seem to have a major impact on drug dependency treatment or increase drug use\(^1\)\(^-\)\(^3\)

- Drug use in the 6 months preceding the initiation of therapy is *not* associated with poorer response to HCV therapy\(^4\)\(^-\)\(^6\)

- HCV therapy can be successful even for pts. who continue to inject drugs\(^4\)\(^-\)\(^7\), although more frequent use is correlated with less success\(^4\)\(^-\)\(^5\), \(^7\)

- Social functioning may be a better indicator of treatment outcome, given that it is independently associated with SVR, after adjusting for drug use\(^6\)

- Attendance to clinical visits a better indicator of SVR than physicians’ *perception* of candidacy\(^4\)

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HCV DAA EFFICACY FOR PWID

- No scientific evidence for denying or delaying treatment
- Good adherence
DAAs don’t require 100% adherence to be effective

SIMPLIFY Study
n=103, SVR 97%
3 treatment failures, 2 LTF

Figure 2: Self-reported injecting drug use during therapy
Data for 103 patients at baseline, 100 patients at other timepoints.
Lancet Gastroenterol Hepatol 2018
doi: 10.1016/S2468-1253(17)30404-1
RE-INFECTION AMONG PEOPLE WHO USE DRUGS
## RE-INFECTION OF HCV

<table>
<thead>
<tr>
<th>Patient Group</th>
<th>Number of Patients</th>
<th>5-Year Recurrence Rate</th>
<th>Rate per 100 person years</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCV Mono-Infected, low risk</td>
<td>9419</td>
<td>1.14%</td>
<td>0.23 per 100 person years</td>
</tr>
<tr>
<td>HCV Mono-Infected, high risk</td>
<td>819</td>
<td>13.22%</td>
<td>2.80 per 100 person years</td>
</tr>
<tr>
<td>HIV/HCV Co-Infected</td>
<td>833</td>
<td>21.72%</td>
<td>4.78 per 100 person years</td>
</tr>
</tbody>
</table>

Source: CROI 2015, “Five Year Risk of Late Relapse or Reinfection with Hepatitis C after Sustained Virologic Response: Meta-analysis of 49 Studies in 8534 patients”, Andrew Hill
HCV RE-INFECTION AWARENESS AND EDUCATION

• Both PWID and HIV-infected MSM are at risk of HCV reinfection.

• Educate patient around HCV antibodies. They do not offer protection from reinfection.

• Continue prevention education in all follow-up visits.

• Screen for HCV RNA at least annually; monitor for elevated LFTs to account for acute HCV infection.
CONCLUSIONS

• The opioid crisis is leading to increased HCV transmissions

• HCV prevention education and harm reduction counseling are important components of the clinical encounter;

• Substance use is not a counter-indicator for HCV treatment

• HCV treatment of PWID and reinfection prevention should go hand-in-hand