OPIOIDS AND HEPATITIS C

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CONFLICT OF INTEREST DISCLOSURE
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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 (eg, 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%

Wurcel AG, et al. Open Forum Infect Dis. 2016. 26;3:ofw157.
CDC. New hepatitis C infections nearly tripled over five years. May 11, 2017. CDC. HIV and injection drug use.

EPIDEMIOLOGY OF HCV AMONG PERSONS WHO INJECT DRUGS - UNITED STATES

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

CDC.gov/hepatitis; Lansky A, PLoS One 2014 ; Nelson PK, Lancet 2011, Hagan et al. 2010; Amon et al. 2008;; Daniels et al. 2007; Amon et al. 2008; Weissing L, PlosOne 2014; Grebely PLOSONE 2014; Clatts MC, J Urban health 2010; Page Clin infect dis, 2013

Increasing Prescription Opioid Use

Increasing Opioid Injection → HIV and HCV Transmission

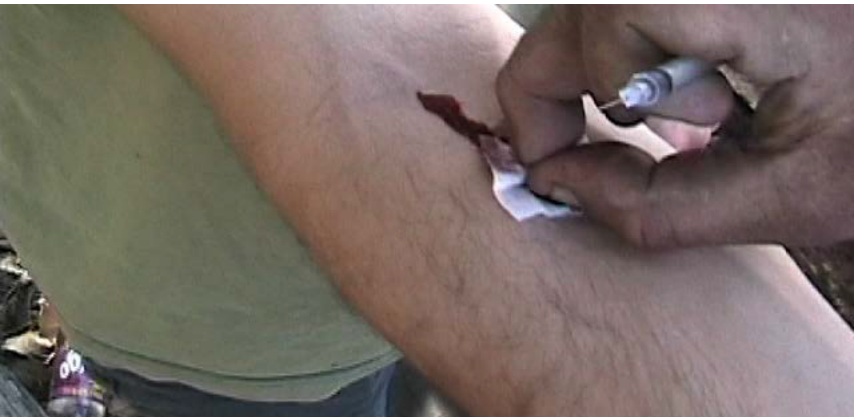
HEPATITIS C TRANSMISSION: SHARING OF INJECTION EQUIPMENT

- 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

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

STIMULANTS AND FENTANYL: A SNEAKY OVERDOSE RISK

- 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?

Recommendations for when and in whom to initiate treatment

Treatment is recommended for all patients with chronic HCV infection, except those with short life expectancies that cannot be remediated by treating HCV, by transplantation, or by other directed therapy. Patients with short life expectancies owing to liver disease should be managed in consultation with an expert.

Rating: Class I, Level A

- 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?

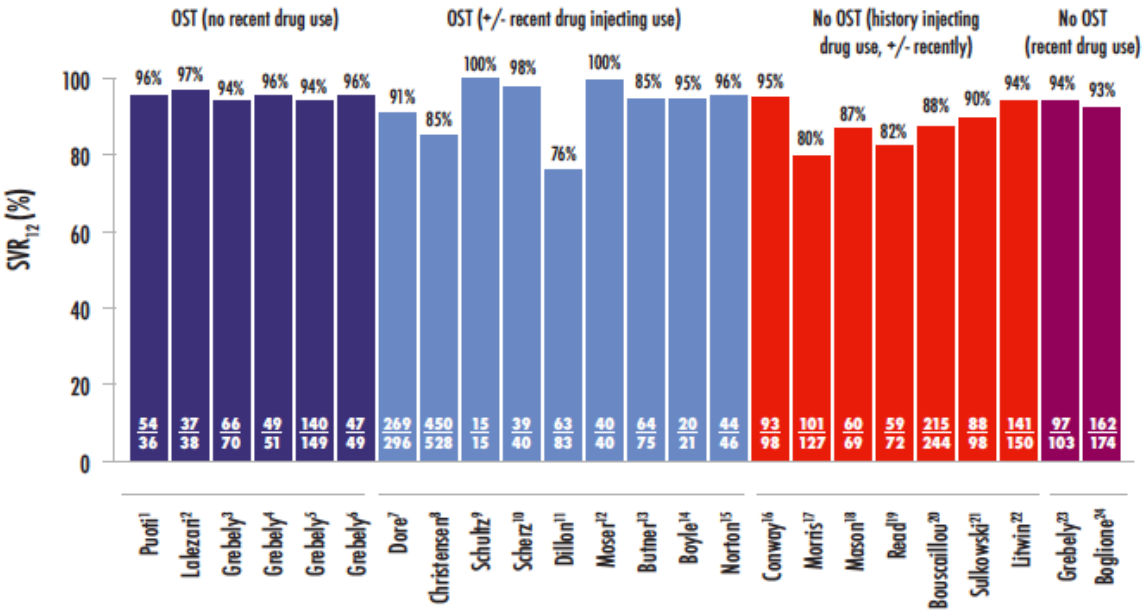
- HCV treatment does not seem to have a major impact on drug dependency treatment or increase drug use[1-3]
- Drug use in the 6 months preceding the initiation of therapy is *not* associated with poorer response to HCV therapy[4-6]
- HCV therapy can be successful even for pts. who continue to inject 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]

1. Van Thiel. *AJG*. 2003; 2. Mauss. *Hepatology*. 2004; 3. Grebely. 2nd ISHSU, Belgium 2011; 4. Sylvestre. *JSAT*. 2005; 5. Grebely. *J Gastro Hepatol*. 2007; 6. Dore. *Gastro*. 2010; 7. Matthews. *CID*. 2005.

HCV DAA EFFICACY FOR PWID

- No scientific evidence for denying or delaying treatment
- Good adherence

Figure 7. SVR12 among people on OST and former/recent PWID[1]



SIMPLIFY STUDY

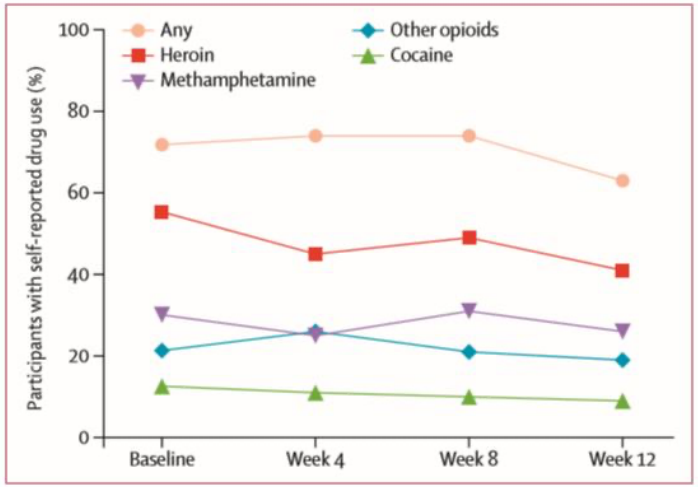


Figure 2: **Self-reported injecting drug use during therapy**
Data for 103 patients at baseline, 100 patients at other timepoints.

DAAs don't require 100% adherence to be effective

SIMPLIFY Study n=103, SVR 97%

3 treatment failures, 2 LTF

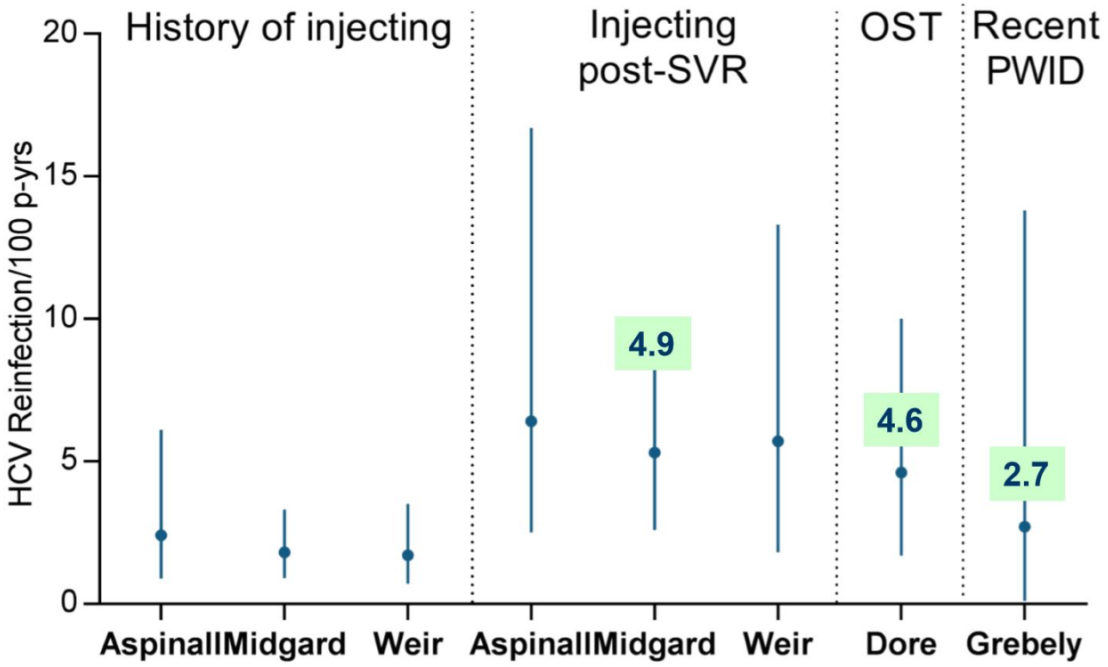
Figure 2: Self-reported injecting drug use during therapy
Data for 103 patients at baseline, 100 patients at other timepoints.

Lancet Gastroenterol Hepatol 2018

doi: 10.1016/S2468-1253(17)30404-1

SYNC 2019

REINFECTION AMONG PEOPLE WHO USE DRUGS



RE-INFECTION OF HCV

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

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 REINFECTION 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