Case Studies in HIV and Addictions

Sharon Stancliff, MD
Harm Reduction Coalition
Faculty and Planning Committee
Disclosures
Please consult your program book.

Off-Label Disclosure
The following off-label/investigational uses will be discussed in this presentation:
  • Intranasal administration of naloxone may be discussed
Learning Objectives
Upon completion of this presentation, learners should be better able to:

• advise patients about harm reduction interventions including syringe access and the role of community based naloxone in overdose prevention
• discuss the role of buprenorphine as harm reduction
Number of drug poisoning deaths involving opioid analgesics by opioid analgesic category, heroin and cocaine: United States, 1999--2010

Changing environment

• Prescription drug monitoring program use is encouraged/mandatory with urine toxicology encouraged with all controlled substances
• Legality of lay administration of naloxone rapidly being promoted and adopted
• Medical/recreational marijuana use increasingly legal

How will HIV providers respond in treatment and prevention related to drug misuse/addiction
George

30 year old male requesting refill on hydrocodone for chronic low back pain

Prescription drug monitoring program reveals 3 other opioid prescriptions from 3 other prescribers in past month

Urine toxicology: Cocaine, marijuana, hydrocodone

Labs: had been undetectable, now a slight bump up
Options

Discontinue oxycodone and
1. Refer to addiction services & continue care
2. Offer option of buprenorphine
3. Discontinue care
4. Continue care otherwise
Opioid prescribing and HIV

Associations for HIV+ patients:
- Female
- History of IDU and substance use disorders
- Charlson comorbidity score ≥ 2

Silverberg Clin J Pain 2012
How does drug use impact outcome?

• Impact on ARV: initiation, adherence, toxicity, interactions
• Impact on immune function
• Impact on general health: nutrition, co-morbidities, environment

Kipp JSAT 2011
Interactions of ARVs with Frequently Abused Substances

- Heroin: No interactions reported.
- Alcohol: No interactions but many patients also have hepatitis
- Marijuana: No clinically significant interactions
- Benzodiazepines: Alprazolam and clonazepam are elevated by PIs and NNRTIs
- Cocaine: No interactions reported.

Faragon AIDS Inst, NYSDOH, HIVGuidelines.org 2009
Marijuana and HIV

• No evidence of impact on HIV progression
• Adherence: some studies find no impact others find decreased adherence
• Cannabinoids MAY be synergistic with opioids allowing reduced opioid dosing
• Some patients use marijuana to reduce symptoms and side effects:
  • Nausea, anorexia, neuropathy

HIV type 1 RNA level in copies/mL over time.

1995-2010 followed 6366 patients for 27,941 py. In 2010 IDUs had a median CD4 79 cells lower and RNA 0.16 log10 higher.

Goals of Opiate Maintenance

- To reduce opioid misuse
- To reduce mortality
- To reduce transmission of blood-borne viruses
- To improve patients’ general health and well being (psycho-social functioning)
- To reduce drug-related crime
Therapeutic effects of opioid maintenance

- Prevent drug withdrawal
- Block the effects of heroin if taken
- Prevent the powerful craving that characterizes protracted withdrawal
Maintenance and HIV

- Among HIV+ patients maintenance is associated
  - more consistent use of antiretrovirals
  - higher rates of adherence
  - less hospitalizations
  - some impact on viral suppression

Opioid maintenance and HIV transmission: a systematic review

Opiate substitution treatment was associated with a 54% reduction in risk of HIV infection among people who inject drugs

MacArthur et al BMJ 2012
Opioid maintenance and mortality

• Prospective study of opioid dependent patients applying for methadone (and buprenorphine) treatment in Norway
• 3,789 subjects followed for up to 7 years

Clausen Drug Alc Dep 2008
## Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-treatment</th>
<th>In treatment</th>
<th>Post-treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total mortality Odds ratio</td>
<td>1</td>
<td>0.5</td>
<td>1.43</td>
</tr>
<tr>
<td>Total overdose Odds ratio</td>
<td>1</td>
<td>0.20</td>
<td>1.40</td>
</tr>
<tr>
<td>Percent of deaths due to overdose</td>
<td>79%</td>
<td>27%</td>
<td>61%</td>
</tr>
</tbody>
</table>

Methadone patients half as likely to die
Overdose deaths were cut by 80%

Clausen 2008
Buprenorphine and Risk Behaviors

150 patients randomized in a 12 week study of BUP/NX vs Detox with BUP taper either at 1-2 weeks or 10-12 weeks. DOT 5-7 days/week, weekly counseling.

Meade et al JAIDS 2010
Methadone vs. Buprenorphine

Methadone:
• Advantages: higher retention, associated with multiple services
• Disadvantages: access is limited, highly regulated and greater potential for overdose.
• Multiple ARV interactions – but all manageable

Buprenorphine:
• Advantages: office based access.
• Disadvantages: withdrawal required for induction, pain management interaction
• Few ARV interactions
George

Follow up

Physical exam reveals bruising and needle marks on his arms. He admits that he is now injecting heroin; it is cheaper and it is harder to get analgesics. He asks for help getting into a detoxification unit.
Risk factors for fatal overdose

1. Mixing drugs
2. Exiting prison
3. Exiting detoxification
4. Advance HIV
5. All of the above
Headlines 2013

- **Florida**: “Heroin taking oxy's place for more addicts”
- **New York**: “Surge in heroin linked to painkillers in NY”
- **Kentucky**: “Heroin replacing pain pills as drug of choice in some parts of Kentucky”
- **Washington**: “An alarming number of teens and young adults in the Puget Sound area are going from prescription pain killers to heroin as their drug of choice.”
Inpatient admissions for heroin use

Unick, GJ et al, 2013, PLOS ONE
Age distribution of newly reported confirmed cases of hepatitis C virus (HCV) infection in Massachusetts for 2002 (A, n = 6368) and 2011 (B, n = 5194).

Of those with reported risk: IDU 74%
Of those heroin was the most common drug.

IDUs in my state can get clean syringes:

1. Syringe exchange programs
2. Over the counter sales at the pharmacy
3. By prescription
4. From their aunt with diabetes
The WHO Risk Hierarchy

• Stop using drugs. Better: Never start.
• If you have to use, don’t inject—sniff or smoke.
• If injecting, don’t reuse equipment or share.
• If reusing, use your own equipment
• If reusing others’ equipment, clean it appropriately.
Syringe Access

Legal options vary by state

• Syringe exchange programs
• Over the counter sales at pharmacies (47 states)
• Prescription (for purpose of reducing spread of blood borne illnesses)

Counseling: “I hope you never inject again but I want to be sure you and your associates know where to get a sterile syringe.”
SAPs: 211 Programs in 32 States

Syringe Exchange Programs in the United States 2011

Source: AmFAR, Foundation for AIDS Research (using NASEN and Beth Israel Hospital data)
Syringe Exchange and HIV Incidence Among IDU

From 1990 to 2002, in New York City:

- The number of needles exchanged rose tenfold
- HIV seroincidence among drug users dropped

Des Jarlais D et al, AJPH 2005
Does syringe exchange increase injection

**Figure 1** Number of methadone maintenance treatment program admissions over time by route of administration (inhalation versus injection)
Des Jarlais et al Addiction 2010
Overdose and HIV

Meta-analysis of 46 studies: HIV associated increased risk of overdose: pooled risk ratio 1.74

Why?

• Biology – particularly liver dysfunction
• Structural- association with poverty, incarceration

Green et al AIDS 2012
Naloxone

• Prescribed opioid antagonist which rapidly reverses opioid related sedation and respiratory depression and may cause withdrawal
• Overdose victims wake up minutes after administration
• Displaces opioids from the receptors for 30-90 minutes
• No pleasant psychoactive effects
• No other effects
Models of increasing access to naloxone

- Community prescribing/distribution to drug user and/or social networks
- Prescribing in outpatient care
- Increasing access among first responders
- Pharmacy collaborative agreements
The training: 10-20 minutes

• Prevention understanding the role of:
  – mixing drugs
  – reduced tolerance
  – using alone

• Overdose recognition

• Action
  – Call 911
  – Rescue breathing- using dummy
  – Naloxone administration
Overdose prevention programs: US

MMWR report based on survey of programs known to the Harm Reduction Coalition

- As of 2010, there were 48 known programs, representing 189 community-based sites in 15 states and DC.

Wheeler, MMWR 2012
Overdose fatality prevention programs that distribute naloxone: USA, 2010

Programs range from State supported to underground
1996 - 2010:
• 53,339 individuals have received kits
• 10,194 overdose reversals reported
Most reversals from syringe access programs

Wheeler et al MMWR 2012
Massachusetts

- Massachusetts compared interrupted time series of towns by enrollment in Opioid Education and Naloxone Distribution programs
- 2912 kits distributed
- 327 rescues, 87% by drug users; 98% effective
  EMS revived the other 3

Walley et al BMJ 2013
Community results

Fatal opioid OD rates compared no implementation

• Program enrollment 1-100 per 100k population (ARR: 0.73)
• Program enrollment >100 per 100,000 (ARR:0.54)

No differences were found in nonfatal opioid OD rates.

Walley et al BMJ 2013
Conclusions

As drug use patterns and the regulatory environment change clinicians are encouraged to be familiar with and to offer:

• Opioid maintenance treatment
• Naloxone as overdose prevention
• Access to sterile syringes