We have a treatment that works for heroin and prescription opioid addiction – why aren’t we using it more?
OUTLINE

- ABCs of addiction
- Addiction as a brain disease, neuroadaptation
- Results of non-medication treatment
- Breaking the cycle of opioid addiction
- Details of MMT programs
- Efficacy and safety of OMT
- OMT in Primary Care
- OMT in pregnancy
- OMT in breast feeding
DEFINITIONS - TALKING THE SAME LANGUAGE

- Drug Use
- Drug Ab-Use
- Drug Dependence (physical)
- Drug Addiction
- Substance Use Disorder
Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.
ADDICTION - THE "C"S

- Loss of Control
- Continued use in spite of adverse ~
- Consequences
- Compulsion and Cravings
- lack of Consciousness (denial)
Partial Recovery of Brain Dopamine Transporters in Methamphetamine (METH) Abuser After Protracted Abstinence

Normal Control  
METH Abuser (1 month abstinent)  
METH Abuser (24 months abstinent)

Structurally . . . $\text{NAC}_c$

Saline  Amph

Robinson & Kolb, 1997
Brain reward circuitry
“Over time, chronic drug use, much like the HIV virus and the immune system, breaks down the brain’s ability to resist.”

- Personal Quote
WHOSE BRIGHT IDEA?
WHO’S BRIGHT IDEA?

- Dole and Nyswander, early 1960s

Detox ➔ Treatment ➔ Failure
RESULTS OF OPIOID DETOX

- VA study 2006 – 112 patients – inpatient detox followed by outpatient treatment and naltrexone
- 78% successfully completed detox
- At 90 days, only 22% remained in treatment
- At 90 days, <3% had negative urine samples
- At 1 year, 40% readmitted, 4.5% had died

RESULTS OF COUNSELING

- 653 patients addicted to Rx opioids
- Phase 1: 2 week buprenorphine, then 2 week taper off, 8 week FU.
- Half randomized to counseling in addition
- Only 6.6% had a good outcome (43/653), with no difference whether they had counseling or not.

Phase 2: Non-successful patients offered 12 weeks buprenorphine, 4 week taper, and 8 week FU.  
Half randomized to counseling in addition  
49.2% (177/360) had good outcomes while on buprenorphine.  
Only 8.6% (31/360) with good outcomes after buprenorphine stopped.  
Counseling made no difference.

COUNSELING WITHOUT MEDS

- Detox and counseling, without medication, has negligible effectiveness for the treatment of opioid dependency. More than 8 out of 10 patients will relapse within a few months.
- Detox, treatment programs, AA/NA, etc don’t work for the large majority of opioid addicts.
- For patients who are on medication, stopping the medication puts them at high risk of relapse, whether they have counseling or not.
- Patients who relapse have a high mortality rate.
10.5 year follow up of heroin addicts
30% died for a rate of 3.4% per year
Mortality ratio 28.5
Cause of death – infectious diseases (including AIDS) – 51% and overdose – 30%

Mortality of Addiction

- Average decrease in life expectancy:
  - Opioids – 15-20 years
  - Alcohol – 10-15 years
  - Tobacco – 5-10 years
  - Diabetes II – 5-10 years
  - Hypertension – 5 years
Dying To Be Free

There's A Treatment For Heroin Addiction That Actually Works. Why Aren't We Using It?

By Jason Cherkis

January 28, 2015
WHY THEY FAIL - PROLONGED WITHDRAWAL

- Acute withdrawal symptoms resolve usually in 5-7 days
- Patients don’t feel normal for months - dysphoria
  - Low energy
  - Depression
  - Poor sleep
  - Restlessness
  - Irritability
  - Poor appetite
  - Anhedonia
- Symptoms may persist for over a year
Initially – Euphoria

Long Term – Dysphoria
Dysphoria leads to

- Demanding, aggressive behavior with providers
- Criminal activity
- Diversion/selling of drugs
- Hazardous sexual activity, STDs
- Risk for infectious diseases – Hep C, HIV, endocarditis
- Neglect of other responsibilities (job, kids, spouse)
BREAKING THE CYCLE

- Opioid Use
- Bad Behavior
- Physical Dependence
- Desperation
- Withdrawal
Drug Use

Bad Behavior

Physical Dependence

Desperation

Withdrawal
OPIOID SUBSTITUTION

- Use a drug with a long half life
  - Gets patients off of the “roller coaster”
  - Relieves withdrawal and cravings
  - Does not produce euphoria in tolerant patients

- Block the effects of other opioids
  - Buprenorphine – high affinity for receptor
  - Methadone – induced/maintained opioid tolerance

- Use in a controlled setting
  - Decrease risks of diversion, IV use
  - Combine with treatment, other services
GOALS OF TREATMENT

- No significant withdrawals
- No other opioid use
- Improved function
- Blockage of the euphoric effects of other opioids
<table>
<thead>
<tr>
<th>Methadone</th>
<th>Buprenorphine</th>
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<tbody>
<tr>
<td>~ Only in OTPs</td>
<td>~ In office (with waiver)</td>
</tr>
<tr>
<td>~ More effective</td>
<td>~ Equiv to ~60 mg MMT</td>
</tr>
<tr>
<td>~ More structure</td>
<td>~ No daily dosing</td>
</tr>
<tr>
<td>~ More hassle to pt</td>
<td>~ 30 or 100 pt limit</td>
</tr>
<tr>
<td>~ No pt limit</td>
<td>~ Ceiling on respiratory effects</td>
</tr>
<tr>
<td>~ More risky in OD</td>
<td>~ More expensive</td>
</tr>
</tbody>
</table>

(LAAM ~ Levo-Alpha- Acetyl-Methadol ~ no longer used)
**MYTHS AND FACTS**

- Opioid addicts get “high” off of methadone and/or buprenorphine

**MYTH**

**Fact: Opioid addicts feel “normal” on OMT**
- No cognitive impairment in tolerant individuals
- No significant long term organ damage
- No need for dose escalation over time once stabilized
Patients come to clinic initially 6 days per week for observed dosing
Maximun initial dose 30 mg, titrate over first few weeks
Average daily dose 100-120 mg (variable)
Strict rules for take home doses
Regular urine drug screening
Each patient has a counselor with regular visits and a treatment plan
Referrals are made as needed to medical, psychiatric, counseling, social services
FEDERAL TAKE-HOME RULES - METHADONE

- 0 – 3 months: Sundays/holidays plus 1 day
- 3 – 6 months: Sundays/holidays plus 2 days
- 6 – 9 months: Sundays/holidays plus 3 days
- 9 – 12 months: 6 days
- 12 – 24 months: 2 weeks
- 24 + months: one month
Requirements for Take-Homes

- No drug/alcohol abuse
- No missed appointments at clinic
- No behavioral issues
- No criminal activity
- Stable home, relationships
- Ability to store and transport safely (lock-box)
- Rehabilitative benefit to patient outweighs potential for diversion
Retention rates ~25-75% at one year

Improved outcomes:
- Better treatment retention (RR = 4.44*)
- Illicit drug use decreases (RR = 0.69*)
- Criminal activity decreases (RR = 0.39**)
- Mortality decreases (RR = 0.48**)

Estimated to save $4 for every $1 spent on treatment

(* P< 0.05)
(**P>0.05)

2009 Cochrane Review
OMT VS. DETOX ONLY

Medical Withdrawal vs Maintenance

- N=20
- Both groups received counseling
- High mortality rate in detox group (20%, n=4)

Kakko et al., Lancet; 361:662-668, Feb 22 2003
70% of diabetes is caused by lifestyle choices.
Insulin/OHAs do not cure diabetes, only control it partially.
Patients with diabetes would be better off if they lost weight, exercised, ate a good diet and got off insulin.
Why not give patients 2 years to do this and stop the insulin if they haven’t changed? – clearly they don’t want to get better.
Why not stop insulin if a patient eats a box of donuts?
Why not stop insulin if the HgA1C goes up? The patient is non-compliant with treatment.
Mortality of opioid addiction exceeds that of diabetes.
SAFETY OF MMT

- Risk of death high during 1st 2-4 weeks of treatment (7 times of that before treatment)
- Risk of death about half during treatment
- Increases 8 times after leaving treatment
- Methadone must be used with care, especially during the first few weeks
Mortality decreases

- Study from 1998, 507 patients total, followed over 12 months
- 397 in treatment, 110 discharged from treatment
- Mortality 1% (4/397) while in treatment
- 8.2% (9/110) of patients who left treatment died within 1 year, most of them from overdose.

DISCONTINUING OMT

- Slow taper more effective than rapid
- More than 80% relapse within 1 year
  - Independent of how long they have been in treatment or why they stopped
- Some patients have been on MMT for over 40 years
- Length of treatment needs to be determined on an individual basis
ADVERSE EFFECTS

- Methadone has NO long term organ toxicity
  - NO increase in LFTs
  - NO cardiovascular issues (except methadone QTc)
  - NO drowsiness or decrease in mental function
- Minor side effects: Weight gain, constipation, decreased libido, sweating, sleep abnormalities, androgen deficiency (men)
MYTHS AND FACTS

- MMT patients do not need pain meds

**MYTH**

- Fact: MMT patients will need higher doses than others due to tolerance
- Most MMT patients do not get analgesia from methadone – may have hyperalgesia
- MMT patients do not get “high” from pain meds
MMT patients on short acting pain meds do not need their maintenance dose

MYTH

Fact: Any provider with a DEA license can prescribe buprenorphine or methadone maintenance doses to INPATIENTS who are admitted for indications other than addiction

The OTP/prescriber should be notified
Withdrawal off opioids is generally not recommended during pregnancy.

Methadone is considered the treatment of choice during pregnancy.

Buprenorphine may also be used – more data coming out.

No evidence of adverse fetal effects from OMT.

Newborn may develop NAS.

No long term adverse effects on infant.
Mothers with opioid addiction who remain on medication during pregnancy have better outcomes:

- Better prenatal follow up
- Less fetal growth retardation
- Fewer pre-term deliveries
- Fewer obstetric complications
NEONATAL ABSTINENCE SYNDROME

- Onset 2-5 days depending on drug involved
- Crying, irritability, excess sucking, sleep problems
- Fever, hyperactive reflexes, sweating, seizures
- Poor feeding, vomiting, slow weight gain
- Occurs in 40-70% of exposed neonates
- Severity only somewhat dependent on dose
- Less severe with buprenorphine than methadone
- Treatment with tapering doses of morphine when necessary
- Warn mothers they won’t take baby home right away
Small amounts (1-2%) of methadone and buprenorphine secreted into breast milk
Not enough to affect NAS or to require tapering when weaning
Package insert says breast feeding not recommended while on buprenorphine – almost all experts ignore this
Proven beneficial effects of breast feeding far outweigh any theoretical disadvantages
Highly effective, humane treatment

Stigmatized

Doesn’t work for everyone

Needs to be integrated with patient’s overall medical, psych, social care

Not a substitute for regular treatment, 12 step groups, etc.

You may see patients in your office who are taking buprenorphine or high doses of methadone ~ don’t panic ~ there is a lot of science behind this treatment

Many patients do well for years
The End