

CP Lecture – Substance Abuse III: Treatment  
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Goals of Lecture:

- To understand the various treatment options for substance abuse/dependence.
- To recognize the benefits and limitations of treatment for these disorders
- To familiarize students with some of the difficulties as well as the rewards of working with patients with substance abuse problems.

“Treatment is not a conservative or a liberal approach – it is simply a cost effective approach”  
▪ quote from Dr. Kleber’s appearance before Congress

In terms of understanding what treatments are effective, we need to look at the paradigm used in evaluating it. For example, in the treatment of hypertension, treatment is successful if the drug lowers it and taking a patient off treatment leads to relapse. We can examine drug treatment by the same paradigm.

Efficacy of Substance Abuse Treatment

#### **Continuing Care Model**

Success: retention in treatment  
improved function during treatment

#### **Rehabilitation model**

Success: completion of treatment  
sustained elimination of symptoms (which is unlikely)  
resumption of functioning after treatment

#### **Determination of success is related to the model used**

Skepticism of whether treatment works is a function of misunderstandings about:

- improvement vs. cure
- rehabilitation vs. habilitation
- chronic relapsing nature of condition
- visibility of failure vs. anonymity of success (Darryl Strawberry, Robert Downey Jr. are cases of very visible failures)

“Success related to retention, not to the initial reason for entering treatment”

- reason for going is not important
- problem with HMO model of care is that there is a limited number of visits – not conducive to retention

## **Kleber's 9 Commandments of Treatment**

1. Treatment works.
2. All treatment works for someone. But who are they?
3. No one treatment is effective for all drug abusers – heterogeneity of populations requires a variety of approaches.
4. Some addicts need rehabilitation, others need habilitation. No “re-” for them to go back to.
5. Treating psychiatric problems will not cure the addiction; relapse is more probable, however, if you don't treat it.
6. Legal coercion into treatment (involuntary treatment) works as well as voluntary treatment as long as it seems voluntary. For example, judge says “treatment or jail.”
7. Effects of treatment received in prison will decay unless followed by after-care. Self-help programs can be important.
8. Longer duration of treatment leads to better outcome.
9. Work is important to long term abstinence, especially for those with skilled, well-paying jobs.

The rest of the lecture focused on the treatment of 3 drugs: Heroin, Alcohol, and Cocaine

## **Heroin**

- crosses blood brain barrier quickly
- very euphorogenic
- acts like morphine when it gets to the brain

Effects:

- produces intense, brief rush, i.e. “best orgasm multiplied by 1000”
- followed by euphoric high, elevated mood for 2-4 hours
- rush not as intense with slower rates of administration
- heroin + cocaine = speedball

Some numbers:

- there are an estimated 1 million opiate addicts (i.e. heroin plus others) in the U.S.
- the average addict does heroin 2-4 times/day
- tolerance occurs within 3 weeks for new users, 1 week for old users; need more and more to achieve the same feeling

Many **drugs** are used to treat heroin addiction:

Agonists – attaches to receptor, ex. Methadone, LAAM

Partial Agonists – produces ceiling effect, ex. Buprenorphine

Antagonists – blocks receptor, keep exogenous drugs from being felt, ex. Naltrexone

Anti-craving – blocks locus coeruleus, decreases release of noradreneline

## **Methadone**

- orally-effective synthetic opioid
- effective but controversial – treat addict with agonist is controversial, considered unethical to give addicts another drug

- patients maintained 1-3 years

#### Advantages:

- blocks opiate use without associated euphoria
- decreases criminality

#### Disadvantages:

- doesn't block cocaine or alcohol
- difficult withdrawal period with severe effects
- drug programs provide little in way of treatment (i.e. methadone isn't enough)
- methadone is a 24-hour drug, but only above a certain level

New long acting LAAM makes withdrawal easier, but leads to ventricular arrhythmias

UPenn study showing random assignment into 3 groups

Group 1: Methadone only

Group 2: Methadone + counseling once a week

Group 3: Methadone + counseling, psychiatric help, psychologists, vocational services

Result: Heroin use, cocaine use, needle sharing all decrease from Groups 1 to 3.

Conclusion: It is not the patients, but the program that has the largest effect.

### **Naltrexone**

- opposite of Methadone
- an antagonist, blocks opioids without agonist effects
- must be off opiates to start treatment with it
- no tolerance observed with Naltrexone's effect even after several years
- "ideal" drug but most addicts are not interested in using it.

#### Useful for:

- those with good jobs: doctors, lawyers, executives
- addicts on parole
- alcoholics

#### Effects:

- retention about 45% after 6 months
- rating of heroin "high" was significantly diminished by Depot Naltrexone injection. Depot Naltrexone dosage is relatively low, no problems with depression are reported.

### **Buprenorphine**

- partial  $\mu$ -agonist and  $\kappa$ -agonist
- may be used in transition from agonist to Naltrexone
- ceiling effect on respiratory depression. So can't be used as an agonist at high doses (instead, produces depressive effect)

## Future treatment:

### Drugs:

- Depot Naltrexone
- Buprenorphine
- office-based Methadone for stabilized patient

### Therapeutic communities:

- grew out of programs like Alcoholics Anonymous
- useful for cocaine, heroine, poly-drug addicts
- good for criminal addicts, but not psychotics
- use peer confrontation, increase responsibilities for those who have been there longer
- problem of high dropout rate
- good success rate for those who finish

### Pain management:

- physical dependence and addiction **are not** interchangeable terms (note: this point stressed in this lecture and his previous one)
- generally, once pain is over, most people (95%) don't continue to seek after pain drugs

## Cocaine

- psychiatric vulnerability, IV or freebase use, increased availability are all predictors of going from recreational use to addiction
- once addicted, persisting neurophysiological changes
- lots of medication have been tried, none really successful

### Treatment:

- mainly treated by non-pharmacological methods, such as psychosocial, supportive, and relapse prevention therapy
- detoxification is usually not necessary

## Alcohol

- no single treatment for alcohol
- with exception of withdrawal, traditional alcohol treatment is non-pharmacologic
- inadequate outcome for many has led to more use of medications for the alcoholism or co-morbid conditions

### Treatment for alcoholism:

- detoxification
- no good agonists available
- most treatment is outpatient, AA, supportive therapy
- antagonists can be useful

### Drugs:

### **Antabuse**

- inhibits Aldehyde dehydrogenase
- leads to nausea and vomiting
- makes you feel like you're going to die
- supervised intake preferable

### **Naltrexone**

- alcohol works by increasing  $\mu$ -endorphin levels, brings feeling of pleasure
- Naltrexone blunts this rise, decreasing the rewarding effect. But doesn't decrease the intoxicating effect (so you get drunk but it's not fun, and still have impaired motor function)

### **Acamprosate**

- NMDA antagonist
- normalizes glutamate excitement
- relieves craving and anxiety

Take-home message of lecture:

**It's not enough to just get help, one must get the right kind of help**