MEDICATION ASSISTED TREATMENT FOR OPIOID USE DISORDERS

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OBJECTIVES

Examine the barriers, gaps, and myths regarding medication-assisted treatment

Provide updated information regarding FDA approved medications

Explain strategies to increase outreach and collaboration between office-based opioid treatment and behavioral health clinics

DEFINITION OF ADDICTION

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.

http://www.asam.org/quality-practice/definition-of-addiction
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.

http://www.asam.org/quality-practice/definition-of-addiction

"Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry."

The Disease of Addiction subverts one of God’s greatest gifts - Free Will - by interfering with the processes of decision-making, memory, and control over motivation. Individual’s with active addiction understand right from wrong but the disease interferes with their ability to act accordingly (delayed gratification, sacrifice).

As a Result...

"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."
Imagine that the body's opioid balance is maintained like body temperature.

Each individual has a specific "opioid temperature" at homeostasis.

Introduction of external opioids to treat pain disrupts the opioid balance by artificially "raising the temperature."
PATHOPHYSIOLOGY OF OPIOID DEPENDENCE

• UNFORTUNATELY, ONCE THE BALANCE IS DISRUPTED ENOUGH, IT CAN NEVER REALLY BE RESTORED.
• THE BRAIN’S CHEMICAL “SET POINT,” SO TO SPEAK, HAS BEEN PERMANENTLY CHANGED.
• ADDICTION IS THEREFORE A CHRONIC DISEASE OF THE BRAIN’S NEUROCHEMICAL BALANCE.

PATHOPHYSIOLOGY OF OPIOID DEPENDENCE

TREATMENT OF OPIOID ADDICTION

• MEDICATION TREATMENT AIMS TO RESTORE THE BRAIN’S NEUROCHEMICAL BALANCE BY USING APPROVED MEDICATIONS.
• AGONIST THERAPY (OPIOID MAINTENANCE THERAPY)
• ANTAGONIST THERAPY (OPIOID BLOCKING THERAPY)
• BEHAVIORAL TREATMENT AIMS TO RESTORE THE BRAIN’S NEUROCHEMICAL BALANCE BY USING TECHNIQUES THAT ALTER THOUGHT PROCESSES (WHICH ARE IN ESSENCE NEUROCHEMICAL PROCESSES).
• SELF-HELP GROUPS (12-STEP PROGRAM) FACILITATES TRANSCENDENCE UP MASLOV’S HIERARCHY OF NEEDS.
TREATMENT OF OPIOID ADDICTION

- "BUT DOC, AREN’T YOU JUST REPLACING ONE DRUG WITH ANOTHER?"
- YES, BUT:
  - METHADONE AND BUPRENORPHINE ARE VERY LONG-ACTING OPIOIDS.
  - METHADONE AND BUPRENORPHINE HAVE BEEN SHOWN TO RESTORE NORMAL BRAIN PHYSIOLOGY WITH LONG-TERM USE.
  - LONG-TERM USE RESTORES NEUROCHEMICAL BALANCE AT A NEW SET POINT.
  - UNFORTUNATELY, DISCONTINUATION TYPICALLY RESULTS IN IMBALANCE ONCE AGAIN.
  - ANALOGOUS TO THE USE OF BASAL INSULIN IN A PATIENT WITH TYPE 1 DIABETES MELLITUS.

**Natural History of Drug Abuse and Addictions**

- Primary Prevention
- Possible Utility of Vaccines and Selected Medications
- Medications Useful and Needed
- >80%
- Initial Use of Drug of Abuse
- Sporadic Intermittent Use
- Regular Use
- Addiction
- Early Withdrawal (abstinence)
- <20%
- Sustained Abstinence
- *with no medications

**WHY CAN’T ADDICTS JUST QUIT?**

Because addiction changes brain circuits!
Normal brain response to endorphins

Brain response to opioids


Brain response to agonist therapy: methadone


Brain response to partial agonist: buprenorphine

Brain response to antagonist therapy: naltrexone

Treatment options for opioid dependence

- Methadone
  
- Buprenorphine
  - Subutex vs. Suboxone

- Naltrexone
  - Oral
  - Injectable: Vivitrol

Treatment Options: Methadone

- By federal law: only at specially licensed opioid treatment programs
- Daily dosing clinic
- Full agonist at the mu receptor
- Very long half-life
- No waiting period to start treatment
- Federal laws regulate how quickly dose can be increased
- Dose needs to be adjusted during and after pregnancy
- Limited number of methadone clinics
Benefits of Methadone

- Enhanced structure, more rigorous treatment for higher risk patients
- Built in contingency management with take home doses
- Higher retention of patients due to full agonist effect
- May be more effective for people using higher doses of heroin or high potency opioids

Treatment Options: Buprenorphine

- Requires special training to prescribe - the 'X' number
- Can be prescribed from an office-based practice
- Partial agonist at the mu receptor
- At higher doses, it blocks its own action = ceiling effect
- Binds tightly to opioid receptors
- Must be in mild opioid withdrawal before starting to prevent precipitated withdrawal
- Very long half-life
- Combined with naloxone (Suboxone) to avoid IV abuse
- Able to be used in pregnancy without adjusting dose

Benefits of Buprenorphine

- Buprenorphine provides more rapid relief from opioid withdrawal than methadone b/c of dosing restrictions.
- Buprenorphine can protect patients from overdose due to ceiling effect
- Relatively low abuse potential compared to full agonists
- Buprenorphine can be prescribed to outpatients from a primary care clinic
Comparing Opioid Antagonists
(Block receptors)

**Naloxone (Narcan)**
- Over the counter
- Short acting (~1 hour)
- Intranasal/ IM/ IV
- Can self-administer
- Ingredient in Suboxone for reducing abuse potential

**Naltrexone**
- Must be prescribed
- Longer half life
- Oral (10 hrs)
- IM (~1 month)
- IM must be given in clinic

Benefits of naltrexone
- Selective competitive antagonist, fully blocks \( \mu \) receptors
- Oral or injectable form available
- Injection lasts 4 weeks, up to 6 weeks after 3rd dose
- Once monthly dosing = better adherence
- Non-addictive, unscheduled medication without DEA restrictions on use
  - ANY prescriber can provide and administer
- Prevents euphoria from opioid use
  - Drug money spent = drug money wasted
- Prevents reinstatement of dependence
- Can also reduce alcohol cravings
Challenges of naltrexone

- Selective competitive antagonist, fully blocks mu receptors
- Injection into gluteal muscle
- Must be in opioid free state (7-10 days after regular use) to avoid withdrawal
- Does not address cravings immediately
- People try to override block and can fatally overdose
- Challenging when people have pain conditions or accidents requiring opioids

Hand exercises!

### Mu Opioid Agonist and Antagonist Pharmacotherapies: Opiate Treatment Outcome* and Numbers Seeking Treatment**

<table>
<thead>
<tr>
<th>Opiate Addiction</th>
<th>Long-Acting Mu Opioid Receptor Agonist or Partial Agonist</th>
<th>Methadone Maintenance</th>
<th>Buprenorphine-Naloxone Maintenance</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin (%OTR***</td>
<td>10 - 40%**</td>
<td>50 - 80%***</td>
<td>50 - 100%***</td>
<td>10 - 20%***</td>
</tr>
<tr>
<td>Prescription Opiates (%OTR)**</td>
<td>10 - 20%***</td>
<td>15 - 30%***</td>
<td>5 - 20%***</td>
<td>5 - 20%***</td>
</tr>
</tbody>
</table>

**Opioid use effectively does not end drug use or opioid use among all patients.

*Data based on National Survey of Drug Use and Health (NSDUH), 2015-2016.

**Data based on NSDUH, 2017.

***Data based on NSDUH, 2016-2017.

<table>
<thead>
<tr>
<th>Numbers</th>
<th>Blicit Opiate Users Seeking Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>227,880</td>
</tr>
<tr>
<td>2015</td>
<td>254,345 (10.1)</td>
</tr>
</tbody>
</table>

| Heroin (%OTR) | 16,721                               |
| Prescription Opiates (%OTR) | 67,887 (19.9) |

*Data based on NSDUH, 2016.

**Data based on NSDUH, 2015-2016.

***Data based on NSDUH, 2015-2016.
Goal of treatment

Treatment restores the ability to engage in social interaction.

TREATMENT OF OPIOID ADDICTION

- BEHAVIORAL THERAPY
  - MOTIVATIONAL INTERVIEWING
  - COGNITIVE-BEHAVIORAL THERAPY
  - CONTINGENCY MANAGEMENT
TREATMENT OF OPIOID ADDICTION

• SELF-HELP GROUPS (12-STEP PROGRAM) – AA, NA, CA.
  • GROWING BODY OF EVIDENCE SUPPORTS GOOD EFFICACY FOR INDIVIDUALS WHO “WORK THE PROGRAM,” ESPECIALLY FOR ALCOHOLISM BUT ALSO FOR DRUG DEPENDENCY.
  • RIESMANN’S “HELPER THERAPY PRINCIPAL” (HTP) AT WORK – “WOUNDED HEALER” PHENOMENON
  • THE 12-STEPS ESSENTIALLY FOSTER ASCENSION ALONG MASLOV’S HIERARCHY OF NEEDS PYRAMID.

Opposite of Addiction:

Connection

Efforts to link office based treatment with behavioral health

• Hub and spoke model
• Train primary care doctors to get their ‘X’
• Transfer people stabilized on Suboxone to these docs
• Provide consultation as needed for crises
• Train residents in psychiatry and primary care about buprenorphine and naltrexone
• Train PAs, NPs to feel comfortable treating addiction
• Webinars/ ECHO program
ADDITIONAL RESOURCE MATERIAL

QUESTIONS?