MEDICATION ASSISTED TREATMENTS (MAT) FOR SUBSTANCE USE DISORDERS

PHYLLIS RAYNOR, PHD, PMHNP-BC, APRN

CLINICAL ASSISTANT PROFESSOR, USC COLLEGE OF NURSING

LEARNING OBJECTIVES:

- Define types of SUD and purposes of Medication Assisted Treatments (MAT) in treating Alcohol, Opioid, and Tobacco use disorders.
- Describe MAT and their indications for use in treating Alcohol Use Disorders, Opioid Use Disorders, and Tobacco Use Disorders as part of a comprehensive treatment plan.
- Discuss APRN considerations, legal and practical considerations, and challenges to recovery management for clients taking MAT for SUD.

What are the Costs of Drug Use in Our Society?

http://clipartix.com/wp-content/uploads/2017/07/Money-clip-art-free-clipart-images-2-clipartandscrap.png

BACKGROUND AND SIGNIFICANCE (1 OF 3)

- Substance use disorders:
  - > $740 billion annually in costs related to crime, lost work productivity, and health care (NIDA, 2017)
  - Approximately 8% (21.7 million people >12 years) needed substance use treatment in the past year

    (National Survey on Drug Use and Health, 2015)

BACKGROUND AND SIGNIFICANCE (2 OF 3)

- Less than 11 % of people (2.3 million people) who needed SUD treatment received it

  www.samhsa.gov/data/population-data-nsduh

- Among the estimated 19.3 million people classified as needing but *not receiving* substance use treatment at a specialty facility, about 18.4 million or 95.4 percent did not think that they needed treatment in the past year for theis substance use.

  (https://www.samhsa.gov/data/sites/default/files/report_2716/ShortReport-2716.html)

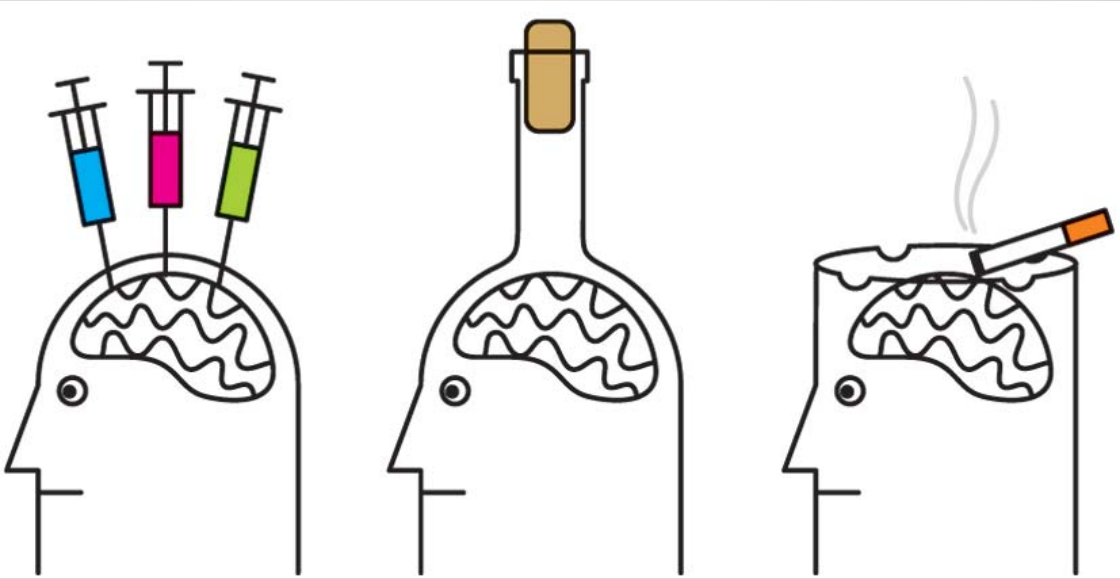
BACKGROUND AND SIGNIFICANCE: INTEGRATING BEHAVIORAL HEALTH INTO PRIMARY CARE (3 OF 3)

- SUD estimated to occur in one in five patients in primary care.
- Primary care providers are **best positioned** to address SUD through:
  - Screening
  - Prevention,
  - Diagnosis,
  - Disease management,
  - Prevention of return to use
- Poor adoption of MAT seen in primary care despite proven effectiveness.

Lee et al., 2015

- Major public health problem – the priority is identifying individuals in need of MAT and providing access to improve health outcomes for individuals and families in South Carolina.

What do our brains get addicted to and why do we treat it?



https://www.sciencenews.org/sites/default/files/main/blogposts/bb_addiction_feat_free.jpg

SCIENCE OF ADDICTION

Ask Nora D. Volkow, M.D., Director of the National Institute on Drug Abuse (NIDA) at the National Institutes of Health http://www.tedmed.com/talks/show?id=309096

The Dark Web – Access and Anonymity

DEFINITION OF TERMS: SUBSTANCE USE DISORDERS (1 OF 5)

- **Substance Use Disorders** (SUD): the mild, moderate, or severe recurrent and ***continued*** use of a substance/ or substances (e.g. alcohol, food, gambling, licit/illicit substances) despite its significant clinical and functional impairments (DSM V, 2013)

- For the purposes of this presentation, we will focus on medications used to treat Alcohol use D/O, Opioid Use D/O, and Tobacco use D/O

DEFINITION OF TERMS: ALCOHOL USE DISORDER (2 OF 5)

- Excessive and persistent alcohol use despite significant clinical and functional impairment
- Approximately 17 million Americans have an Alcohol use disorder (Data taken from the National Survey on Drug Use and Health, 2014)
  - **Moderate Drinking**: 1 drink daily for women, 2 drinks for men
  - **Binge drinking**: 5 or more drinks per occasion at least once in 30 days; BAC > 0.08
  - **Heavy drinking**: 5 or more drinks per occasion for at least 5 or more days in 30 days

https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking

DEFINITION OF TERMS: OPIOID USE DISORDER (3 OF 5)

- From 2000 to 2015, more than half a million people died from drug overdoses.
- 91 Americans die every day from an opioid overdose https://www.cdc.gov/drugoverdose/epidemic/index.html
- It is estimated that 23% of individuals who use heroin develop opioid addiction.
  - In 2014, nearly 2 million people had an opioid use disorder related to prescription pain relievers and an estimated 586, 000 had an opioid use disorder related to heroin use.

DEFINITION OF TERMS: TOBACCO USE DISORDER (4 OF 5)

- 2nd leading cause of death worldwide
- 480,000 deaths a year caused by cigarette smoking
- High risk groups:
  - Pregnant women
  - Individuals with other SUDS
  - Young adults aged 18-25
  - American Indians/Alaskan Natives

DEFINITION OF TERMS: MEDICATION ASSISTED TREATMENTS (5 OF 5)

- **Medication Assisted Treatment (MAT)—**The provision of medications as part of comprehensive addictions-focused care
  - **Alcohol:** (1) Disulfiram (2) Naltrexone (3) Nalmefene and (4) Acamprosate
  - **Opioids:** (1) Methadone (2) Buprenorphine (3) Naltrexone (4) Probuphine (5) Naloxone
  - **Nicotine:** (1) Nicotine replacement therapy (5 different formulations); (2) Bupropion sustained-release; and (3) Varenicline

GOALS OF MAT AS PART OF COMPREHENSIVE CARE PLAN

- Significant reduction of morbidity and mortality
- Control of withdrawal symptoms/withdrawal management
- Maintenance of abstinence
- Prevention in return to drug use
- Reduction in heavy substance use and cravings
- Reduction in drug-related overdose and deaths
- Reduction in disease and violent deaths (e.g. crimes)
- Improvement in overall treatment outcomes

MAT FOR ALCOHOL USE DISORDERS

- **Disulfiram** (alcohol aversive/sensitizing agent);
- **Naltrexone** (decrease cravings and reinforcing effects of alcohol and opioids);
- **Acamprosate** (post – withdrawal maintenance);
- **Nalmefene** (reduce alcohol consumption)

Disulfiram

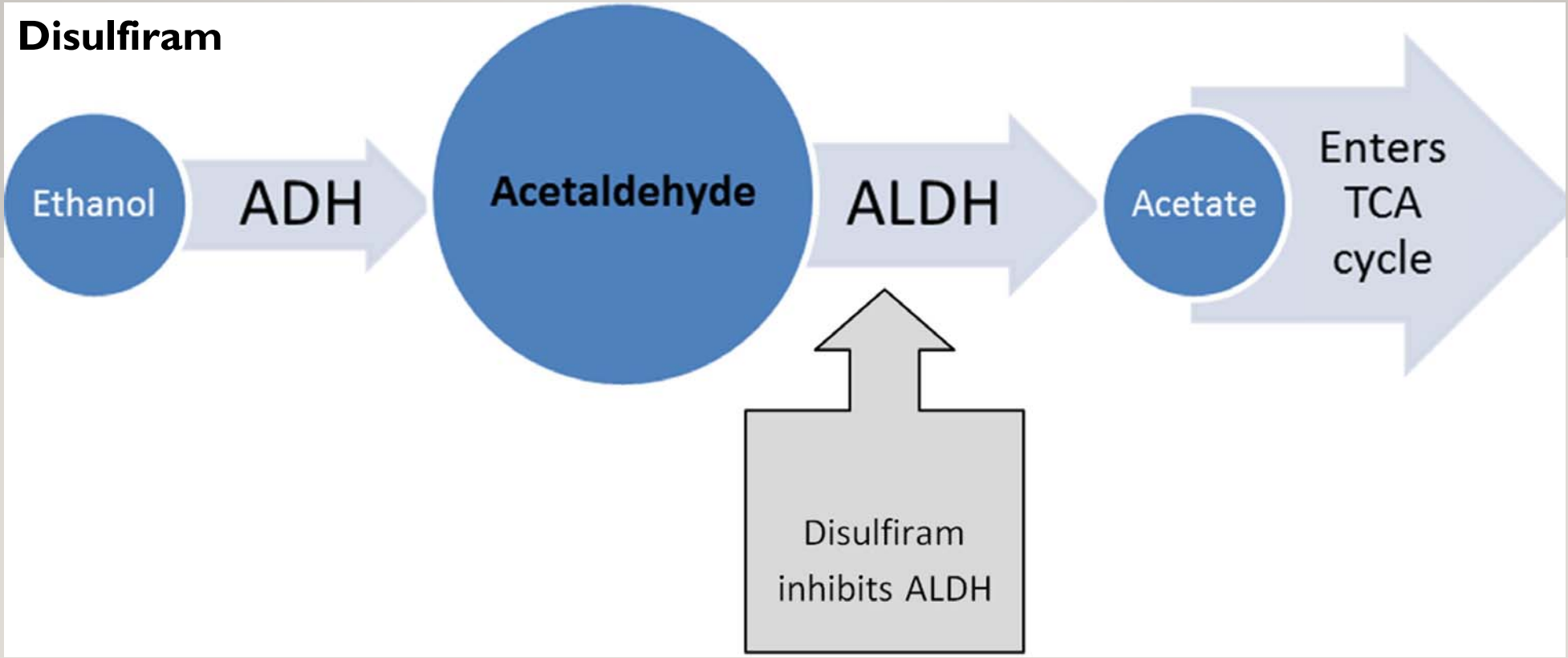


Image retrieved from Kalra et al. (2014). Disulfiram in the management of alcohol dependence: A comprehensive clinical review, Open Journal of Psychiatry, 4, 43-52 at http://file.scirp.org/pdf/OJPsych_20140107091120 21.pdf

DISULFIRAM (ANTABUSE)

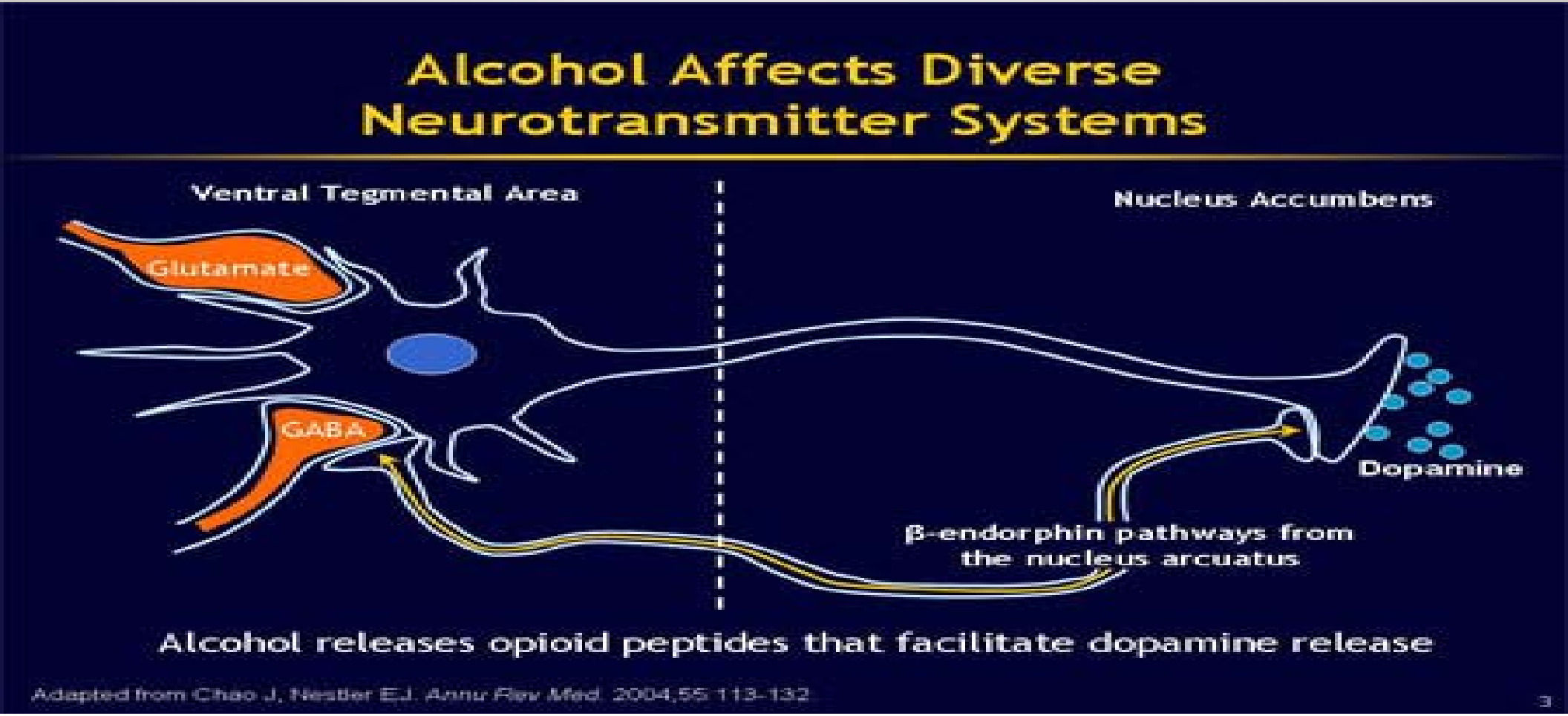
- **Class –** Alcohol - Aversive sensitizing agent
- **Usual Dose –** 250 mg/500 mg
- **MOA –** Blocks oxidation of alcohol at the acetaldehyde stage
- Acetaldehyde is toxic product causing the reaction (flushed, tachycardia, diaphoresis, nausea, headache, etc.)
- DEA schedule—N/A
- When taken with alcohol, causes severe physical discomfort for client; knowledge of this physical reaction acts as a deterrent to drinking—reaction can occur up to 14 days after last dose

DISULFIRAM CONT.

- **Prescribing tips**:
  - Patient has abstained from alcohol >12 hours and/or breath or blood alcohol level is zero
  - Physical exam, baseline liver and kidney function tests, and a pregnancy test for women. Perform an electrocardiogram if clinically indicated (e.g., history of heart disease).
  - Medical and psychiatric history
  - Evaluate need for supervised ingestion
  - Usual dose – 250 mg/daily; Maximum dose – 500 mg/daily
  - May cause psychosis

Info from Incorporating Alcohol Pharmacotherapies into Medical Practice at https://www.ncbi.nlm.nih.gov/books/NBK64036/

NALTREXONE FOR ALCOHOL USE DO (1 OF 3)



NALTREXONE (2 OF 3)

- **Class –** Opioid Antagonist– Recommended treatment for alcohol use disorder and in preventing return to use in opioid use disorders.
- **Usual dose –** 50 mg/daily orally or 380 mg/ q 4 weeks IM (Vivitrol Injectable)
- **MOA–** Blocks opioid receptors in the brain (highest affinity for the **μ-opioid** receptor), which stems the endorphin-mediated reinforcing effects (e.g. euphoria/ feelings of intoxication) of drinking alcohol
  - Reduces Cravings
  - Diminishes the rewarding effects of alcohol and opioids

NALTREXONE CONT. (3 OF 3)

- **Prescribing Tips:**
  - Oral naltrexone—for patients who are highly motivated and supported with observed daily dosing
  - Vivitrol—extended released injectable used when treatment retention and adherence issues are encountered
  - SEs: GI upset or vomiting, diarrhea, headache, nervousness, problems with sleep, and joint muscle pain which may require a dose adjustment
  - If patients who are treated with naltrexone relapse after a period of abstinence, it is possible that the dosage of opioid that was previously used may have life-threatening consequences, including respiratory arrest and circulatory collapse

Information from https://www.samhsa.gov/medication-assisted-treatment/treatment/naltrexone

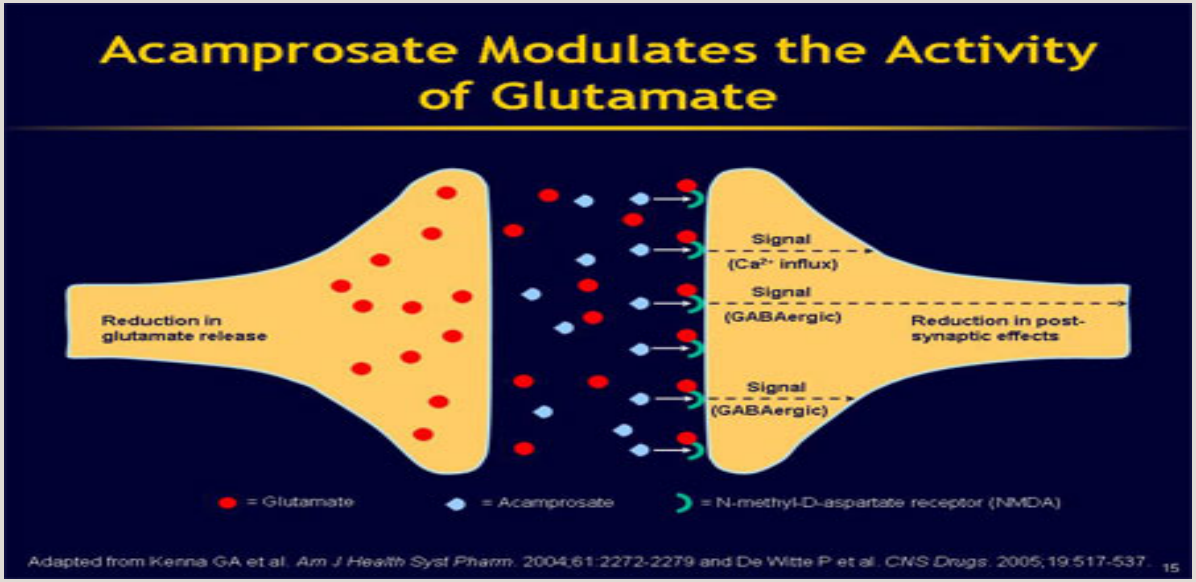
NALMEFENE –REVEX (1 OF 2)

- **Class -** μ-opioid antagonist originally used as parenteral agent to reverse the opioid agonist effects of opioid anesthesia or in opioid overdose.
- **Usual dose** – dose is given IV, IM or SQ in two concentrations, containing 100 μg or 1.0 mg of nalmefene free base per ml. Oral formulations, which have been used to treat AUD and other addictive behaviors, has not been approved for this use in the US. As needed administration.
- **MOA –** μ-opioid antagonist that's similar structurally to Naltrexone, but has partial agonist activity at the *k* receptor

NALMEFENE – REVEX (2 OF 2)

- Previous studies have yielded inconsistent results on the usefulness of nalmefene (Niamh, et al, 2016)
- Mann et al's study (2013), use of Nalmefene by alcohol dependent study participants showed a major effect in decreased number of heavy drinking days and significantly reduced alcohol consumption (clients administered "as needed" when cravings were increased)
- **Prescriber Tips**:
  - Overall data on effect not as conclusive as Naltrexone
  - Recent studies looking at benefit in other addictive disorders (e.g. gambling and gaming disorders)

ACAMPROSATE



ACAMPROSATE (1 OF 2)

- **Class** – Sulfonic Acid (Calcium acetyl homotaurinate)—Post Withdrawal Maintenance
- **Usual dose –** Delayed release tablet 666 mg po tid
- **MOA** – Unknown—thought to restore balance between neuronal excitation and inhibition via effects on GABA and glutamate
- DEA schedule: NA
- FDA approved (2004) for post-withdrawal maintenance of alcohol abstinence
- Numerous studies show Acamprosate has a good safety pattern and was associated with a significant improvement in treatment compliance and prolonged abstinence from alcohol use

(Bouza et al, 2004)

ACAMPROSATE (2 OF 2)

- **Prescribing Tips:**
  - Most effective for clients who are motivated with a goal of complete abstinence
  - Particularly suited for individuals with liver disease, those who are being treated with opioids for pain or OUD, and individuals who are on multiple other medications (no significant drug interactions)
  - Initiated 5 days after cessation of alcohol use, but may be used safely in combination with Alcohol (and benzos), thus can be initiated during medically supervised withdrawal.
  - Reaches full effectiveness in 5 – 8 days
  - Patients who relapse while taking acamprosate may benefit from continuing the medication

MAT FOR OPIOID USE DISORDERS

Image from http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/01/11/in-drug-epidemic-resistance-to-medication-costs-lives

FDA-Approved Medications

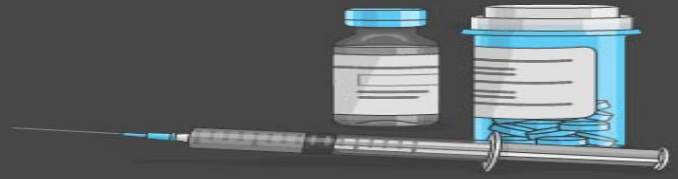
Methadone

In use since the 1960s, the slow-acting synthetic opioid agonist effectively treats moderate to severe heroin addiction. It is only available in heavily regulated clinics.

Buprenorphine/Suboxone

Approved in 2002, the long-acting opioid agonist relieves drug cravings with fewer side effects than other opioids and is available by prescription from certain doctors. Suboxone is designed to deter illicit use.

Naltrexone/Vivitrol



Approved in pill form in 1984, it has been available since 2010 as a 30-day time-release injectable medication called Vivitrol. Patients must be completely off all opioids for seven to 10 days. Both block the effect of opioids, do not activate the opioid receptor system, and do not cause physical dependence.

Naloxone

Approved in 1971, the short-acting medication, also known as Narcan and Evzio, reverses opioid overdoses but does not treat opioid addiction.

METHADONE (1 OF 2)

- **Class** – Synthetic μ-opioid agonist at the μ-opioid receptor
- **Usual dose** – dose ranges from 60-120 mg
  - Maximum initial dose can not exceed 30 mg.
  - Dosage increases in 5-10 mg increments applied no more frequently than every 7 days depending on clinical response.
- **MOA –** oral Synthetic μ-opioid agonist used to transition patients from IV heroin use—consistently positive evidence-based treatment outcomes
  - Recommended for patients who are physiologically dependent on opioids, able to give informed consent, and have no specific contraindications for agonist treatment when administered as part of a comprehensive treatment plan.

METHADONE (2 OF 2)

- DEA – CII
- Treatment with Methadone must be done in an inpatient setting or in an Opioid Treatment Program (OTP)
- Based on federal regulations, primary care integration into/or linkage with Opioid Treatment Program (OTP) is required.

BUPRENORPHINE/SUBOXONE (1 OF 2)

- **Class** – Partial Opioid Agonist with high affinity for μ-opioid agonist receptor

  Probuphine (buprenorphine implant) https://probuphine.com/

- **Usual dose** – After induction and titration, usually 8 mg/daily on average.
  - Recommended induction dose: 2-4 mg. Once tolerated, can increase fairly rapidly till patient stable for 24 hours.
- **MOA** – Partial agonist that is less reinforcing and the effect of buprenorphine cannot be increased by taking larger amounts.. The high receptor affinity creates a blockade effect so that when dosed properly, the euphoric effects of other opioids are blunted or blocked. Because of partial agonist and high receptor affinity. Patients should wait until they are experiencing mild to moderate opioid withdrawal before taking the first dose of buprenorphine to reduce the risk of precipitated withdrawal.
- DEA--CIII

BUPRENORPHINE/SUBOXONE (2 OF 2)

- **Prescribing Tips**:
  - The US FDA approves dosing to a limit of 24 mg/ daily
  - Psychosocial treatment shoud be implemented in conjunction with the use of Buprenorphine
  - Monitor for buprenorphine diversion through recommended strategies: frequent office visits, PDMP, UDS including testing for buprenorphine and metabolites, and patient random call in for pill counts.
  - Buprenorphine taper and discontinuation is SLOW Process…

NALTREXONE (1 OF 2)

- **Class –** Opioid Antagonist– Recommended treatment for alcohol use disorder and in preventing return to use in opioid use disorders.
- **Usual dose –** 50 mg/daily orally or 380 mg/ q 4 weeks IM (Vivitrol Injectable)
- **MOA–** Blocks opioid receptors in the brain (highest affinity for the **μ-opioid** receptor), which stems the endorphin-mediated reinforcing effects (e.g. euphoria/ feelings of intoxication) of drinking alcohol
  - Reduces Cravings
  - Diminishes the rewarding effects of alcohol and opioids

NALTREXONE CONT. (2 OF 2)

- **Prescribing Tips:**
  - Oral naltrexone—for patients who are highly motivated and supported with observed daily dosing
  - Vivitrol—extended released injectable used when treatment retention and adherence issues are encountered
  - SEs: GI upset or vomiting, diarrhea, headache, nervousness, problems with sleep, and joint muscle pain which may require a dose adjustment
  - If patients who are treated with naltrexone relapse after a period of abstinence, it is possible that the dosage of opioid that was previously used may have life-threatening consequences, including respiratory arrest and circulatory collapse

Information from https://www.samhsa.gov/medication-assisted-treatment/treatment/naltrexone

Naloxone

http://www.ahchealthenews.com/2016/05/06/naloxone-reverses-opioid-overdose-saves-lives/

NALOXONE

- **Class** – Opioid Antagonist
- **Usual Dose** – Dosed IV and IM administration; Injection: 0.4mg/mL, 1mg/mL, and 0.4mg/0.4mg (Evsio – new autoinjector)
- **MOA** – It acts by displacing opiates from receptor sites in the brain and reverses respiratory depression, a common cause of overdose deaths.
- Consider prescribing to patients receiving opioids or partial agonist
- Overdose prevention and naloxone prescription form the basis of an appropriate brief intervention

MAT FOR TOBACCO

Image by http://www.medscape.org/viewarticle/570604_2

MAT FOR TOBACCO USE DISORDER (1 OF 2)

- The goals of pharmacotherapy are to induce smoking cessation, reduce morbidity, and prevent complications—works best in conjunction with therapy
- Nicotine replacement medications—decrease nicotine withdrawal symptoms (logenze, gum, sublingual nicotine tablet, patch, spray, and inhaler)
- Bupropion is 1st line medication found to help people to quit smoking by alleviating some of the symptoms associated with nicotine withdrawal.
- Varenicline (Chantix) is a nicotine partial agonist that reduces craving for cigarettes and has been helpful in smoking cessation for many. *Use with caution in CV patients
    - Information obtained from http://emedicine.medscape.com

MAT FOR TOBACCO USE DISORDERS (2 OF 2)

- Gender specific efficacy: Chantix for women; TNP for men (Smith et al, 2017)
- 5 A's--The five major steps (the "5 A's") to intervention in the primary care setting are to **ASK** the patient if he or she uses tobacco, to **ADVISE** him or her to quit, to **ASSESS** willingness to make a quit attempt, to **ASSIST** him or her in making a quit attempt, and to **ARRANGE** for follow up

APRN CONSIDERATIONS FOR CLIENTS TAKING MAT (1 OF 5)

- Comprehensive assessments for SUDs for clients in primary care are critical
  - Evaluate Additional Training Opportunities
    - SBIRT
    - Resource for Addiction medicine in Primary Care: https://www.drugabuse.gov/nidamed-medical-health-professionals/addiction_medicine_in_primary_care
  - NP and PA Waiver for prescribing Buprenorphine—information found at https://www.asam.org/quality-practice/practice-resources/nurse-practitioners-and-physician-assistants-prescribing-buprenorphine

APRN CONSIDERATIONS CONT. (2 OF 5)

- Alcohol Treatment/Opioid Treatment/Tobacco Treatment

  Assessment Recommendations

  - Identification and appropriate and immediate referral for any urgent or emergent medical or psychiatric problem
  - Complete medical history including acute medical conditions, substance use history, and infectious diseases (HIV, TB, Hepatitis, acute trauma, pregnancy)
  - Complete physical examination
  - Labs (CBC, LFT, Hep C (A & B), HIV and STDs, TB, pregnancy test for women of childbearing age)

APRN CONSIDERATIONS CONT. (3 OF 5)

- Screening
  - Explore each substance (many patients use more than one)
  - Use Validated Screening Tools:
    - ASSIST, AUDIT, CAGE questionnaire, Fagerstrom test etc.
  - Screening should be done with every patient
  - Follow up on positives "Red Flags"
- Referral Out of Primary Care to Specialty Care if appropriate
- Determine patient's need, motivation for and choice of treatment as well as establishing a baseline against which patient response to and choice of treatment
- Non-stigmatizing language
- Discuss Treatments Options with patient/family members

APRN CONSIDERATIONS CONT. (4 OF 5)

Current Challenges

- Adequate preparation
- NP and PA Waiver for Buprenorphine administration – not enough providers specially trained yet in South Carolina

- Screening Patients—Consistent screening and brief intervention is lacking
  - Lack of organizational Support
  - Lack of physical time
  - Inconsistent communication

APRN CONSIDERATIONS CONT. (5 OF 5)

- Pharmacotherapy in Overdose Prevention (Naloxone)
- Relapse Prevention
- Ongoing patient monitoring (e.g. UDS, logistical issues, etc.)
- Time Commitment
- Prescription Drug Monitoring programs for Patient Care
- Provider Self-Care/Compassion Fatigue

CONCLUSION

- Integrating Behavioral Health and providing MAT in primary care will improve patient outcomes in South Carolina.
- Collaborate, Collaborate, Collaborate (Who's your Team)
- Take care of yourself in the process of helping others

> "Fall seven times. Stand up eight (Japanese proverb). This is how it feels to overcome opioid addition. This is how it feels to love someone who is overcoming opioid addiction. This is how it feels to take care of someone seeking treatment for opioid addiction. Often, team members tire or become frustrated in the care process. The criticality of having a collaborative team is most evident when one member of the team can help another member stand up again after falling. The work can be hard. And the reward can be just as sweet" (p. 250). Runyan et al. (2017). Confronting the new epidemic: Integrated care for Opioid Use Disorders, Families, Systems, & Health, 35, 2, 248-250.

References provided upon request.

QUESTIONS?