Medications for OUD

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Addiction & Family Medicine

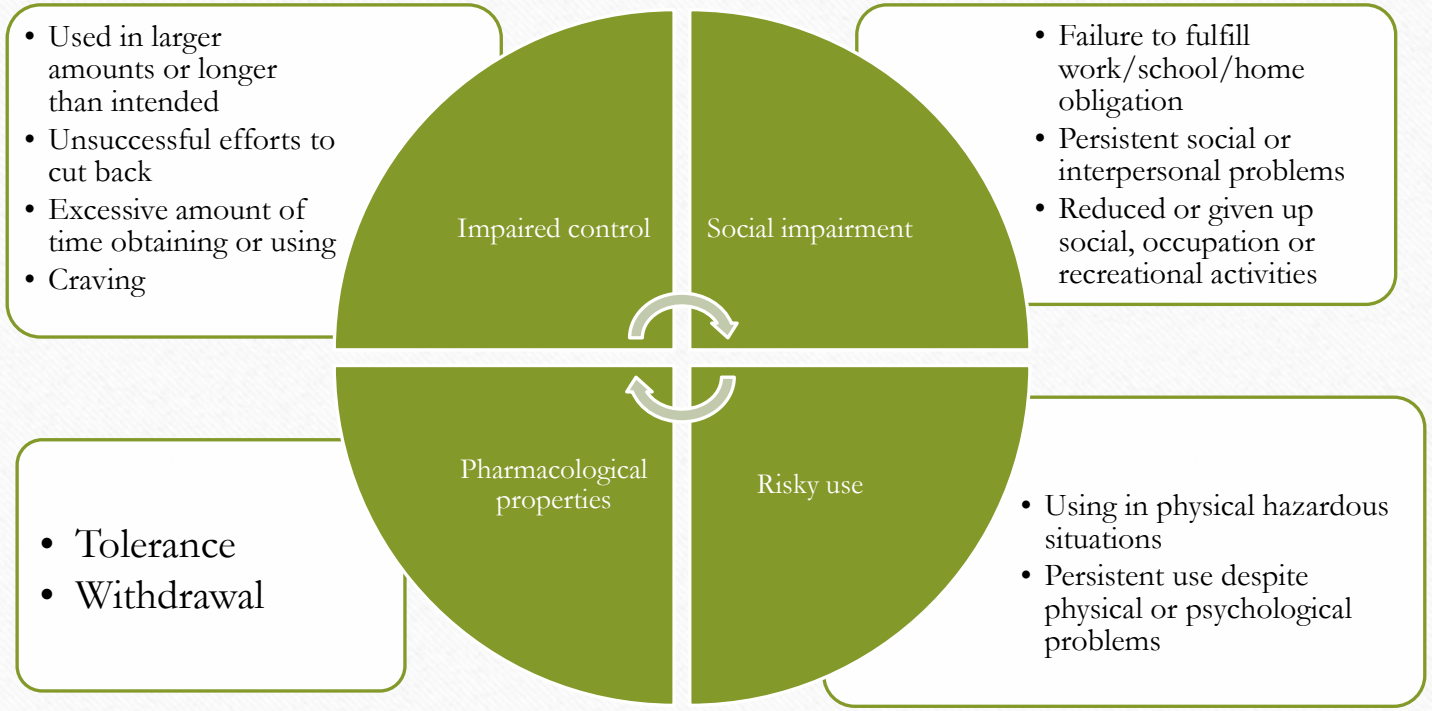
Objectives

- Discuss CDC updates for OUD and overdoses
- Review DSM V criteria for diagnosis of OUD
- Understand the various treatment options for OUD.
- Learn novel induction techniques for buprenorphine.

CDC Updates

- Overdose deaths increased over 4% from 2018-2019
  - Opioids involved in 70% of overdose deaths
  - 72.9% of these involved synthetic opioids
  - Death rates involving synthetic opioids increased by 15%

DSM-V Criteria



Methadone

- Synthetic opioid
- Approved as an analgesic in 1947
- Used to treat opioid withdrawal in 1950
- 1960's discovered it can be used as daily treatment for opioid addiction
- Highly regulated. Can only be prescribed at an OTP if prescribing for addiction.

Pharmacology

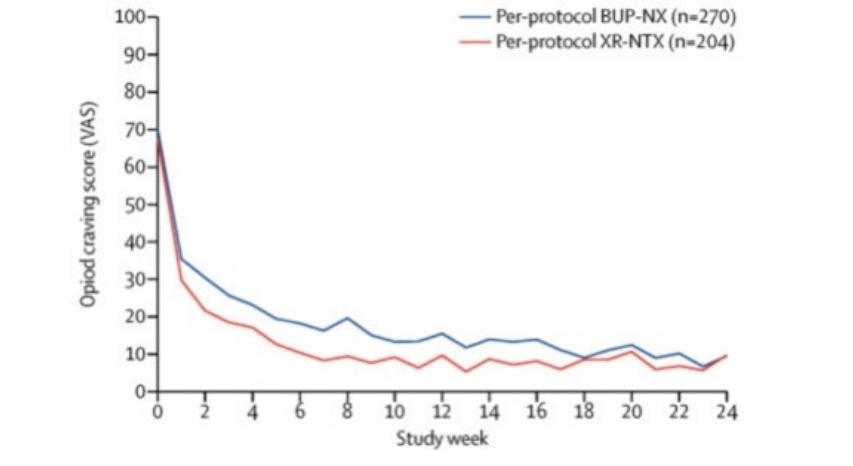
- Tablets, Dissolving wafer, pre-mixed liquid
  - 80-95% bio-availability
- Full mu opioid receptor agonist
- Stored extensively in the liver and other body tissues
- Half life: 24-36 hours; can range up to 91 hours
- Reaching steady state can take about 4-5 days on average
- Serum methadone levels peak 3-4 hours after ingestion

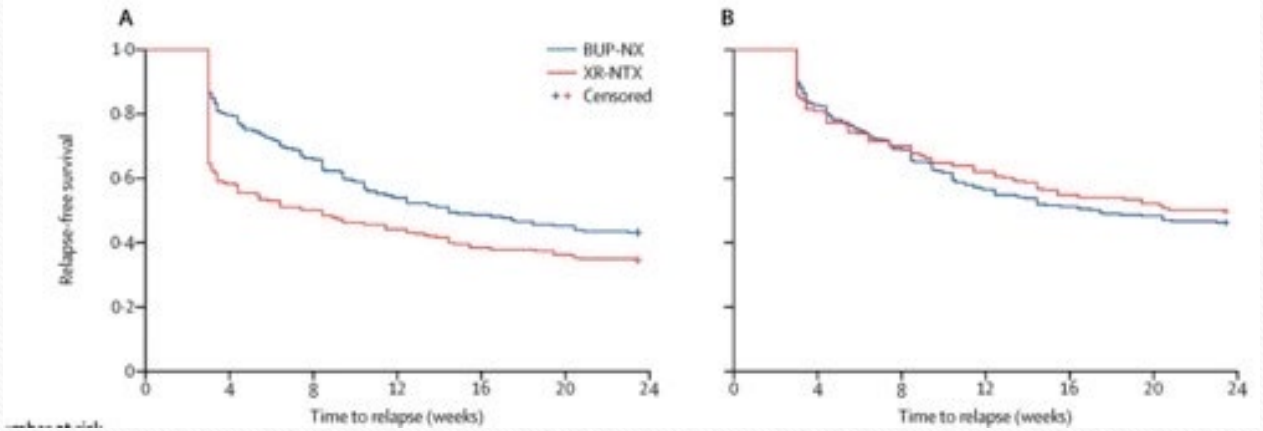
Safety

- All cause mortality of patients treated with methadone significantly lower than untreated opioid addiction
- Main causes of overdose
  - Single dose overdose
  - Accumulation
  - Combination of sedating substances
- Most overdoses occur first 2 weeks

Naltrexone

- Opioid antagonist
- Difficult to initiate
- Risk of opioid withdrawal
- XR: vivitrol
  - Similar efficacy and decrease in cravings compared to buprenorphine


Per-protocol BUP-NX (n=270)
Per-protocol XR-NTX (n=204)
Opiod craving score (VAS)
Study week
0
10
20
30
40
50
60
70
80
90
100
0
2
4
6
8
10
12
14
16
18
20
22
24


A
B
BUP-NX
XR-NTX
Censored
Relapse-free survival
Time to relapse (weeks)
Time to relapse (weeks)
0
0·2
0·4
0·6
0·8
1·0
0
4
8
12
16
20
24

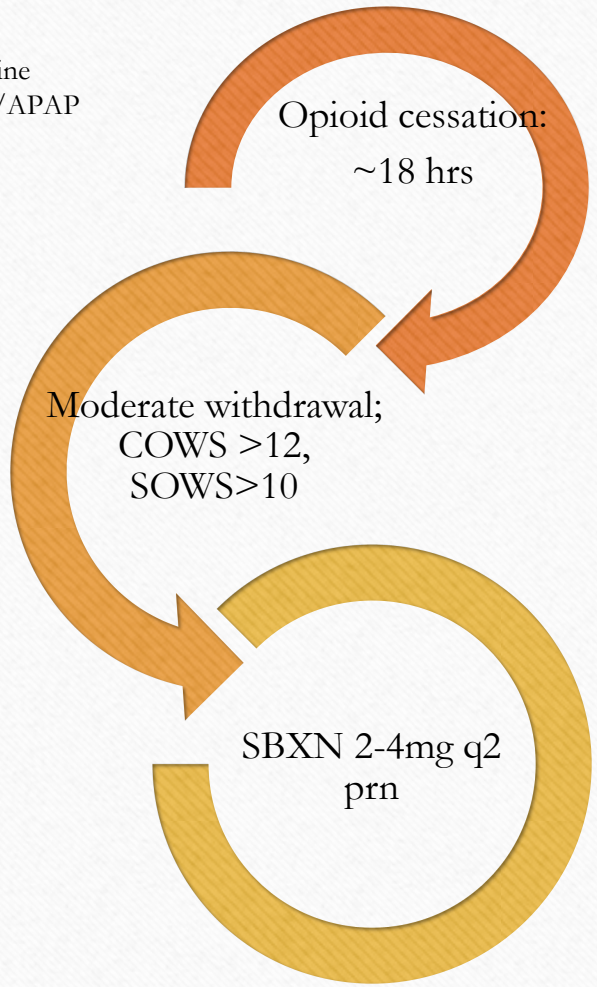
Buprenorphine

- Semi-synthetic opioid
- Developed in 1970's
- Approved for OUD in 2002
- DATA 2000 allowed for OBOT

Pharmacology

- Formulations: Films, tablets, patches, implant, injection
- Binds to mu opioid receptors: high affinity, low efficacy agonist, slow dissociation, lipophilic
- Kappa opioid receptor antagonist
  - Depression
  - Opioid induced hyperalgesia
- Bio-availability: IV/SC > transmucosal > oral
- Half life: 24-42h; less for IV
- Metabolism: CYP450
- Metabolite: nor-buprenorphine

Supportive medications:
-- clonidine
-- Zofran
-- Imodium
-- hydroxyzine
-- NSAIDs/APAP



Office based induction / Home inductions

Illicit fentanyl

- Lipophilic
- Various analogues exist in the community
- Inductions can be more difficult
- Potent
- Not detected in a standard UDS

Micro-dosing

Table 1. Buprenorphine Microdosing Protocol Used by Our Team

Day	Buprenorphine dosage	Methadone dose
1	0.5 mg[a] SL once/day	Full dose
2	0.5 mg[a] SL twice/day	Full dose
3	1 mg SL twice/day	Full dose
4	2 mg SL twice/day	Full dose
5	4 mg SL twice/day	Full dose
6	8 mg SL once/day	Full dose
7	8 mg SL in A.M. and 4 mg SL in P.M.	Full dose
8	12 mg SL/day	Stop

SL = sublingually.

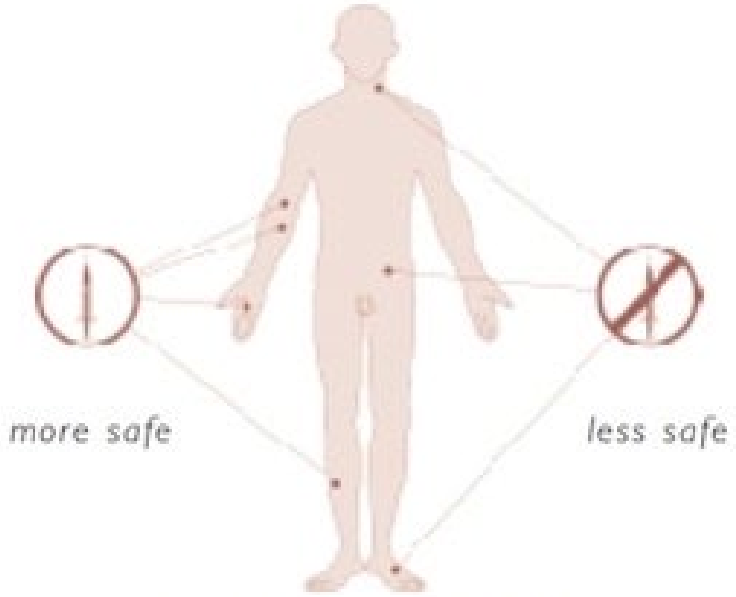
[a]For our buprenorphine formulation, one-quarter of a 2-mg sublingual strip was used.

Other options

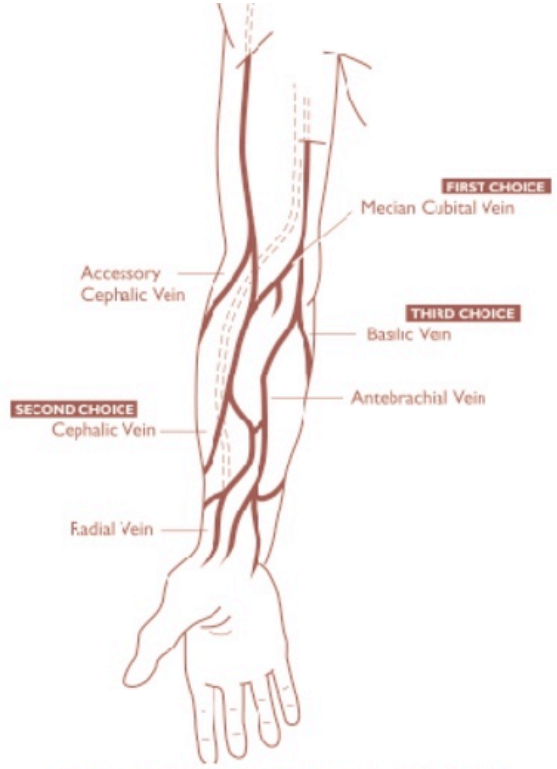
- High dose induction
- Rapid micro induction
- Wait 24+ hours from last use

Harm Reduction

- Ideas and strategies aimed at reducing public health risks associated with drug use
- Syringe exchange
- Safe injection practices
  - Alcohol pads, clean needles with bleach, clean cookers with bleach, don't share straws
- Prescribing Naloxone



HIERARCHY OF RISK



SAFEST INJECTING LOCATION: THE ARM
(Numbered in order of safety)

References

- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. March 2020
- Coe, M. et al. 2019. Buprenorphine pharmacology review: update on transmucosal and long-acting formulations. Journal of Addiction Medicine.
- Lee. J. et al. 2018. Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention: a multicenter, open-label, randomized control trial. Lancet
- Terasaki, D. et al. 2018. Transitioning hospitalized patients with opioid use disorder from methadone to buprenorphine without a period of opioid abstinence using a microdosing protocol. Pharmacotherapy.