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Prescribing Opioids to Older Adults: Things to Consider



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Objectives:

- ▶ Describe opioid prescribing that increases risk of overdose.
 - ▶ Recount aging processes that may increase risk of opioid in this patient group.
 - ▶ Review co-prescribing risks and adverse events.
- 

Pain Meds in Older Adults

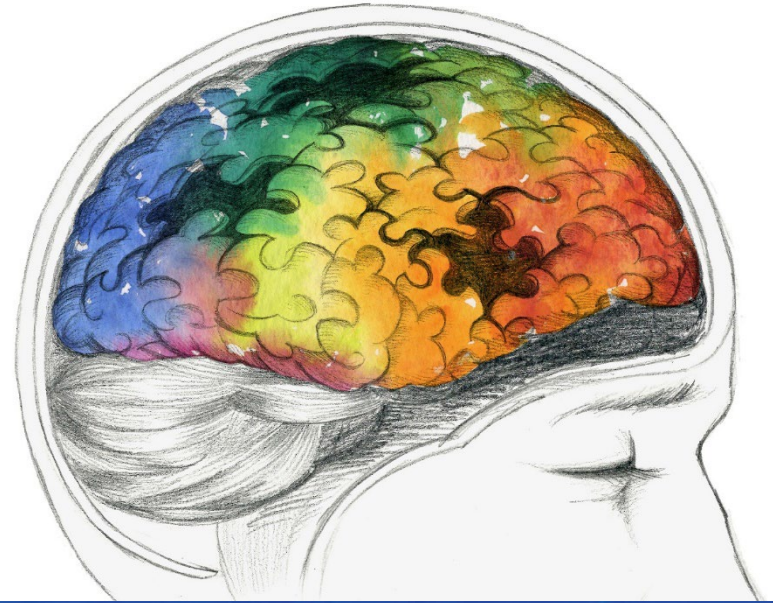
▶ Analgesic Ladder

- Non-opioid acetaminophen
- Weak opioids/NSAIDS (often contraindications)
- More potent opioids




Considerations in Older Adults

- ▶ Cognition
- ▶ Hearing difficulties
- ▶ Visual impairment - difficult to read instructions



As a Result

- ▶ Medication may be taken incorrectly
 - ▶ May not understand that one opioid was discontinued while another was started (takes both)
 - ▶ May need assistance setting up medications
- 



Do Formulation and Dose of Long-Term Opioid Therapy Contribute to Risk of Adverse Events Among Older Adults?

Chronic Non-Cancer Pain

- ▶ Highly prevalent
- ▶ Often disabling
- ▶ Because of it, 3-4% of adults receive long-term opioid therapy

Chronic Non-Cancer Pain (continued)

- ▶ Patients taking the highest doses are more likely to have adverse events
 - 3% of older adults received high dose i.e., > 120 MME
 - Dose dependent association to adverse events

Chronic Non-Cancer Pain (continued)

- ▶ Why do older patients have more risk?
 - Reduced renal, hepatic, and respiratory function
 - This results in altered metabolism which contributes to adverse outcomes

Chronic Non-Cancer Pain (continued)

- ▶ Does it make a difference if long or short acting opioids?

YES!

Chronic Non-Cancer Pain (continued)

- ▶ Initiation of long-acting opioids are associated with 2x the risk of overdose compared with short-acting
 - What has been unclear until recently is the increased risk in older adults.

Monika Salkar et al. Study

- ▶ Recent study regarding opioid dose and formulations in older adults (Monika Salkar et al. 2021)
 - Cohort included Medicare patients >65 years old
 - Included patients with CNCP (chronic non-cancer pain)
 - Measured adverse outcomes including
 - Opioid related respiratory depression
 - Opioid OD
 - All cause mortality

Results (Salkar et al.)

▶ Formulation

- Use of long-acting was a significant risk factor for overdose
- Long-acting opioids significantly increases risk of overdose, and all cause mortality (when compared to short-acting along)

Dose Relationship to Adverse Effects

20-50 MME

AND ≥ 50 MME

Both risk factors for all cause mortality, opioid induced respiratory depression, overdose as compared to ≤ 20 MME in older adults

- ▶ This is consistent with other recent studies

Dose Relationship to Adverse Effects (continued)

- ▶ MME ≥ 100 had significantly higher odds of opioid induced respiratory depression than <100 daily MME
- ▶ Zedler et al. 2018

Risks

- ▶ Cause of increased risk for older adults on long-acting preparations?
 - Decreased renal function
 - Decreased liver function
 - Resultant decreased clearance



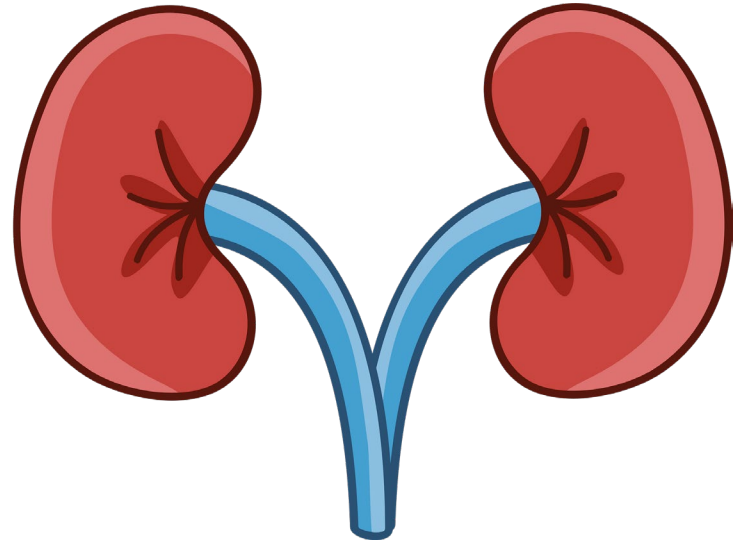
* Yes, I know this was on a previous slide. Repeated for emphasis, not due to cognition issues

Risks (continued)

- ▶ Renally cleared opioids (Creat Clearance Important)
 - Morphine
 - Hydromorphone
 - Meperidine

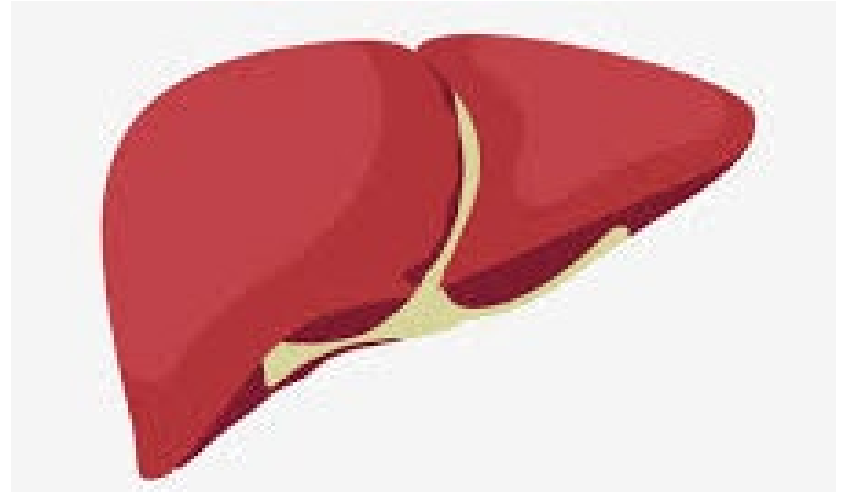
Risks (continued)

- ▶ Not renally cleared as significantly
 - Oxycodone



Risks (continued)

- ▶ In hepatic insufficiency, consider
 - Fentanyl
 - Hydromorphone





Association of Average Daily Morphine Milligram Equivalents (MME) and Falls in Older Adult Chronic Opioid Users



Falls

- ▶ As an adverse outcome, falls are very significant
 - Leading cause of fatal and nonfatal injuries in older adults
 - 2.8 million ER visits
 - 800,000 hospitalizations
 - 27,000 deaths



Falls (continued)

- ▶ Fall data from 2018

- 27.5% of older adults fell at least once
- 10.2% were injured



Falls (continued)

- ▶ Prevention of falls - by addressing the modifiable risk factors
 - Medications?
 - And more specifically opioids

*is there a dose related effect on falls?

Falls (continued)

- ▶ Does opioid dose predict adverse events?
 - Yes, in the case of OD
 - Falls? Until recently no studies examined relationship to dose (MME)

Falls (continued)

▶ Results

- Older adults taking > 37 MME (for non cancer pain) had a 47% greater risk compared to those taking less than 37 MME



Co-Prescribing and Risk of Falls and Hip Fracture in Older Adults

Co-Prescribing Risk

- ▶ Is there an association between co-prescribing benzodiazepines and opioids and hip fractures in those >65 years old
 - 287 patients with hip fracture/ 574 control patients
 - 72.1% female
 - Mean age: 82



Results

- ▶ Using opioids and benzodiazepines in the month prior was associated with a greater probability of fall and hip fracture- nearly 4x higher risk

Machado-Duque, et al. 2017

Co-Use of Benzodiazepines and Opioids in Chronic Pain and Older Adults

- Falls
- Fractures
- ED

First Study

- ▶ Does overlapping benzodiazepine and opioid prescriptions increase odds of falling or visiting ED? (Yarborough et al. 2018)
 - 517 adults
 - Large private health system and VA system

Falls (continued)

- ▶ 25% (127=N) co-prescribed
- ▶ Past year benzodiazepines and opioids associated with adverse outcomes

Adverse outcomes

- ▶ 3x greater number of falls
- ▶ 1.5x greater number of ER visits





Alcohol Use in Older Age Patients Taking Opioids



Alcohol Use

- ▶ Alcohol and opioids are frequently used together
 - Alcohol contributes to many overdose deaths from opioids
 - Both work as CNS depressants resulting in respiratory depression
 - Research on this association is lacking



Alcohol Use (continued)

- ▶ The majority of patients with OUD also have a chronic diagnosis...and 23.4% had a chronic diagnosis of alcohol use disorder (Hser et al. 2017)



Alcohol Use (continued)

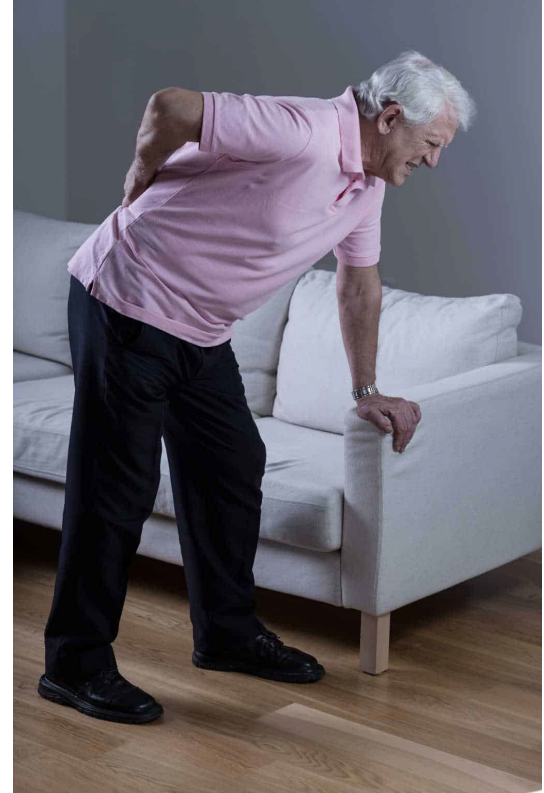
- ▶ Kaiser Permanente study of >11,000 patients on opioids showed 12.4% had current alcohol use
- ▶ (Sauders et al. 2012)

Alcohol Use (continued)

- ▶ In a similar study, 908 patients on chronic opioids were surveyed
 - 36% had at least one drink in the last 30 days
 - 4.4% had 6-10 drinks
 - 5.8% had >10 per month

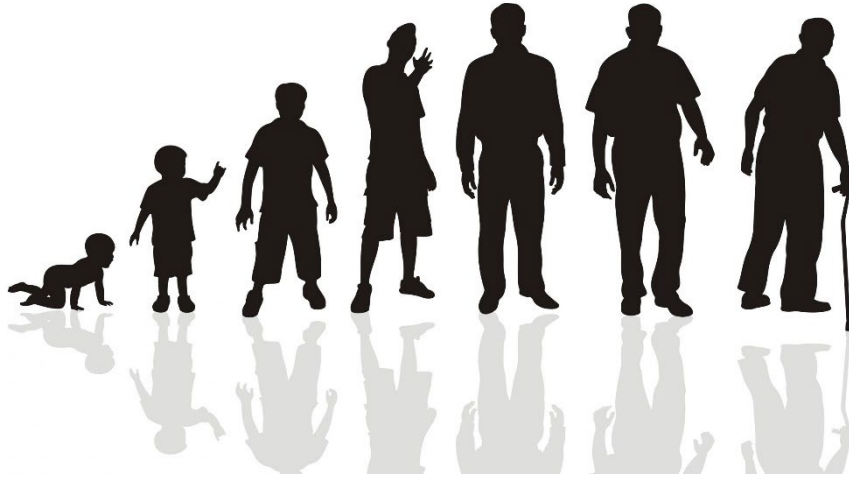
Alcohol Use (continued)

- ▶ In patients presenting for AUD treatment 43-73% had history of moderate to severe pain



Alcohol Use (continued)

- ▶ So, what makes alcohol a bigger issue in older adults?
- ▶ Answer: Changing physiology as we age!



Alcohol Use (continued)

- ▶ Changes cause the following:
 - High BAC with each drink
 - Bigger impairments in balance
 - Slower reaction times
 - Worse driving skills
 - Memory deficits
- ▶ All contribute to increase in alcohol related harm



Alcohol Use (continued)

- ▶ So, in older patients on opioids, how often is alcohol a concern?
 - In developed countries, 90% of patients over 50 years old drink alcohol at some level
 - A United Kingdom study showed 20% of that group consumed at hazardous levels

Alcohol Use

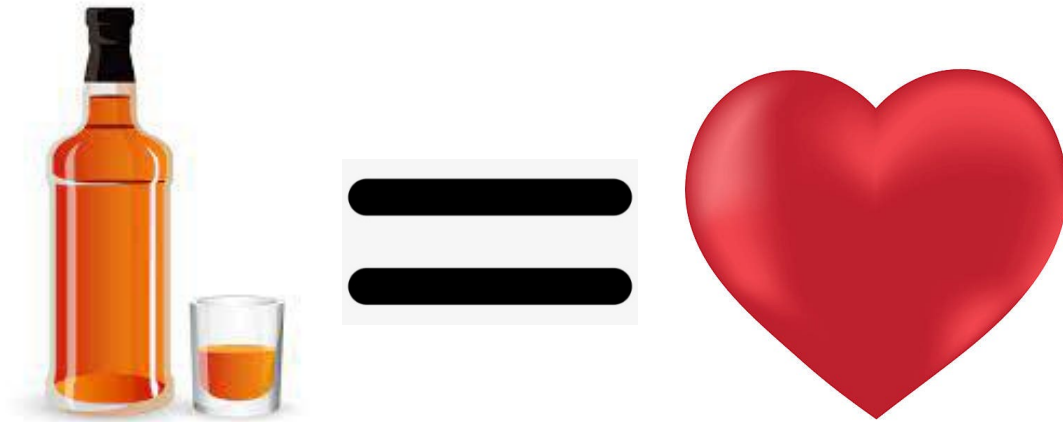
- ▶ AMA study showed that alcohol consumption in the last 10 years increased the most in patients >65 years old*

* Up to 65%!!



Alcohol Use

- ▶ Older adults are hospitalized as often for alcohol related problems as they are heart disease



Alcohol and Opioids: The Bottom Line

- ▶ If a patient needs opioids, ask about alcohol intake
- ▶ Counsel patients about risk of co-use
- ▶ Screen for OUD if adverse event (fall, OD, and so on)

COPD

- ▶ 50% of patients with COPD get opioids for chronic pain
 - Musculoskeletal pain > “breathlessness”



COPD

- ▶ COPD affects 4-10% of Canadian population
 - 5 year mortality 40-70% depending on severity
 - 2 year mortality with severe COPD 50% when on opioids
 - Increased risk of: ER visits, hospitalizations, use of antibiotics/steroids
 - Some evidence not dose related

Nicholas t. Vozoris et al. European Respiratory Journal. July 2016. DOI 10.1183/13993003.01967-2015



COPD

- ▶ 2016 study evaluating risks of adverse outcomes associated with incident opioid use among older adults with COPD
 - Retrospective study, patients >65 years old
 - Adverse respiratory outcomes within 30 days of incident opioid use

Zoris, Vo. European Respiratory Journal. 2016;48:683-93.

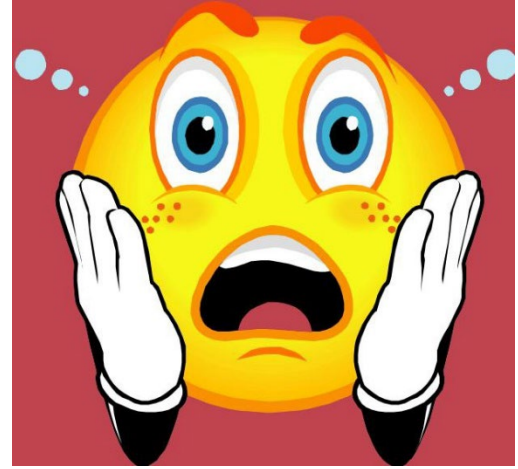


- ▶ **2016 study continued...**
 - **Population based cohort of 130,979 patients with COPD + opioid use**
 - **Previous studies have shown high dose opioids associated with all cause mortality**
 - **This study was the first to show the link between opioid use AND respiratory-related morbidity and mortality *REGARDLESS* of dose**

COPD

- ▶ 2016 study continued...

AND



All cause mortality persisted in all sub-groups, including individuals with the “least” severe COPD

Sleep Apnea

- ▶ The TWO edged sword:
 - Central sleep apnea can be caused by chronic opioids (licit or illicit)
 - Patients with sleep apnea are at increased risk of complications from opioids



Sleep Apnea

“Patients with sleep disordered breathing (including OSA + CSA) have increased incidence of nocturnal arrhythmias, myocardial ischemia or infarction, and sudden death”

Prescription of long-acting opioids and mortality in patients with chronic non cancer pain. JAMA.2016;315(22)2415-23.

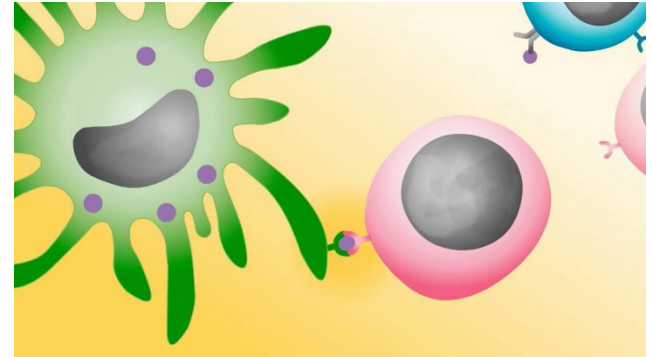


Immunologic

- ▶ Inhibitory effects on:
 - Antibody and cellular immunity
 - Natural killer cell activity
 - Cytokine expression
 - Phagocytic activity

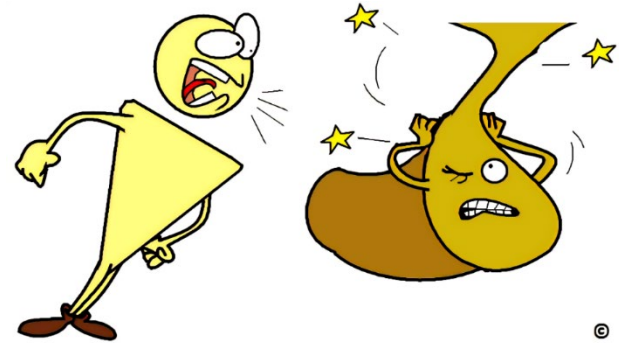
*First described in 1890 in work on guinea pigs

* Pain Physician. 2008;11:5105-20.



Hormonal

- ▶ Decreased total and free testosterone*
- ▶ Abnormalities of many other hormones:
 - Estrogen
 - Luteinizing hormone
 - GNRH
 - DHEA



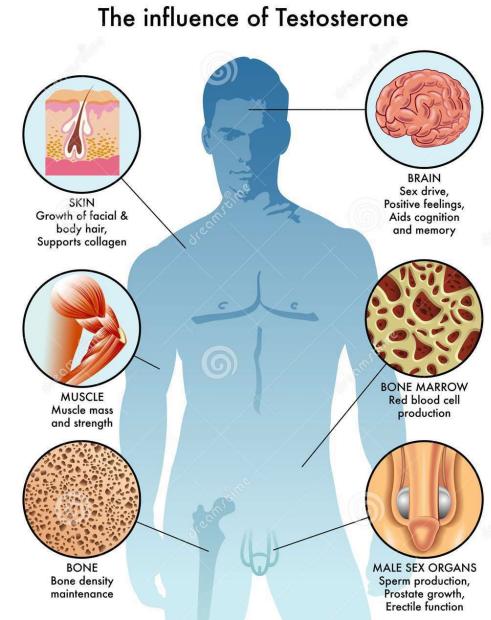
Hormonal

- ▶ Results in:
 - A very long list of concerns
 - Common concerns:
 - Sexual dysfunction
 - Depression
 - Decreased energy levels
 - Osteoporosis in women



Opioid-Induced Androgen Deficiency

- ▶ Chronic opioid patients receiving testosterone:
 - Have lower all cause mortality
 - Decreased other adverse health outcomes
- ▶ Lower risk of:
 - CAD/Stroke
 - Other adverse cardiac events/femoral hip fracture/anemia



Prescribed Opioids and Suicide

- ▶ Acute opioid effects may contribute to suicide:

- Increase in impulsiveness
- Disinhibition

- ▶ Long term may affect mental state

- Increased sensitivity to negative emotions
- Greater stress and pain
- Decrease sensation to natural rewards

Prescribed Opioids and Suicide

- ▶ Compared with older adults without depressive symptoms, older adults with severe depressive symptoms are more likely to be taking high dose/potency opioid medications
- ▶ Ilgen et al.(2016) showed that as the dose of opioids increase, so does suicide risk. This relationship is not limited to suicide by overdose of opioids, but also with a broader array of suicide methods
- ▶ Roughly 2/3 of these suicides are greater than 45 y/o

Prescribed Opioids and Suicide

▶ Studies have shown that patients with the diagnosis of depression (as compared to those without):

- Are more likely to be prescribed opioids
- More likely to be on high doses
- more likely to report misuse
- Risk of suicide increases with increasing doses
- The higher the dose, the more accidental overdose

Why Wait to Improve?



Prescribing Study

- ▶ Opioid prescribing decreases after learning of a patient's fatal overdose (Doctor et al. 2018)
 - Study monitored effect of notifying physicians of patient who died of opioid OD if they had prescribed an opioid in the last 12 months
 - Providers received a “warning” from medical examiner to prescribe safely
 - Control group did not receive letters
 - 861 clinicians

Results

- ▶ Reduction in high intensity prescribing
- ▶ Reduction in opioid naïve patients receiving opioids
- ▶ Reduction in cumulative opioid intake

Take Away

- ▶ Don't wait for an adverse outcome to look closely and thoughtfully at your opioid prescribing

Sources

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Thank
You!

Kurt Devine MD, FASAM