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Opioids for Pain: Drug Seeking Behavior, Acute Pain Management, and Drug Monitoring Databases

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Disclosure

All planners, presenters, and reviewers of this session report no financial relationships relevant to this activity.

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Prescription Monitoring Databases

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RATE OF OPIOID-RELATED DEATHS QUADRUPLED SINCE 2000

1000 OPIOID ED VISITS PER DAY

91 AMERICANS DIE EACH DAY FROM OPIOID USE


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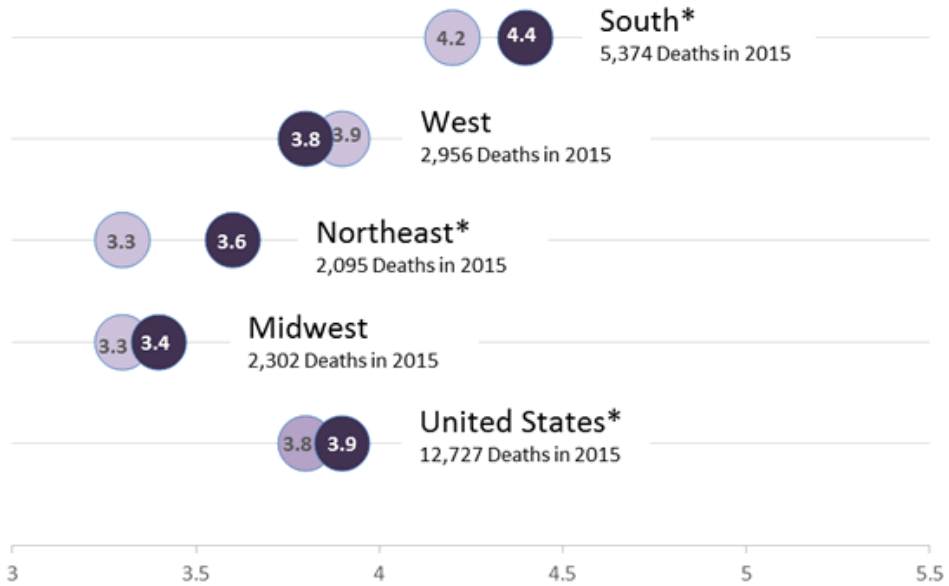
Natural & Semi-Synthetic Opioid Overdose Death Rates

Age-adjusted deaths per 100,000 population for natural and semisynthetic opioids from 2014 to **2015**, by census region of residence



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2016. https://wonder.cdc.gov/.

* Statistically significant at p<0.05 level.

www.cdc.gov
Your Source for Credible Health Information

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Heroin Use Has INCREASED Among Most Demographic Groups

	2002-2004*	2011-2013*	% CHANGE
SEX			
Male	2.4	3.6	50%
Female	0.8	1.6	100%
AGE, YEARS			
12-17	1.8	1.6	--
18-25	3.5	7.3	109%
26 or older	1.2	1.9	58%
RACE/ETHNICITY			
Non-Hispanic white	1.4	3	114%
Other	2	1.7	--
ANNUAL HOUSEHOLD INCOME			
Less than $20,000	3.4	5.5	62%
$20,000–$49,999	1.3	2.3	77%
$50,000 or more	1	1.6	60%
HEALTH INSURANCE COVERAGE			
None	4.2	6.7	60%
Medicaid	4.3	4.7	--
Private or other	0.8	1.3	63%

cdc.gov

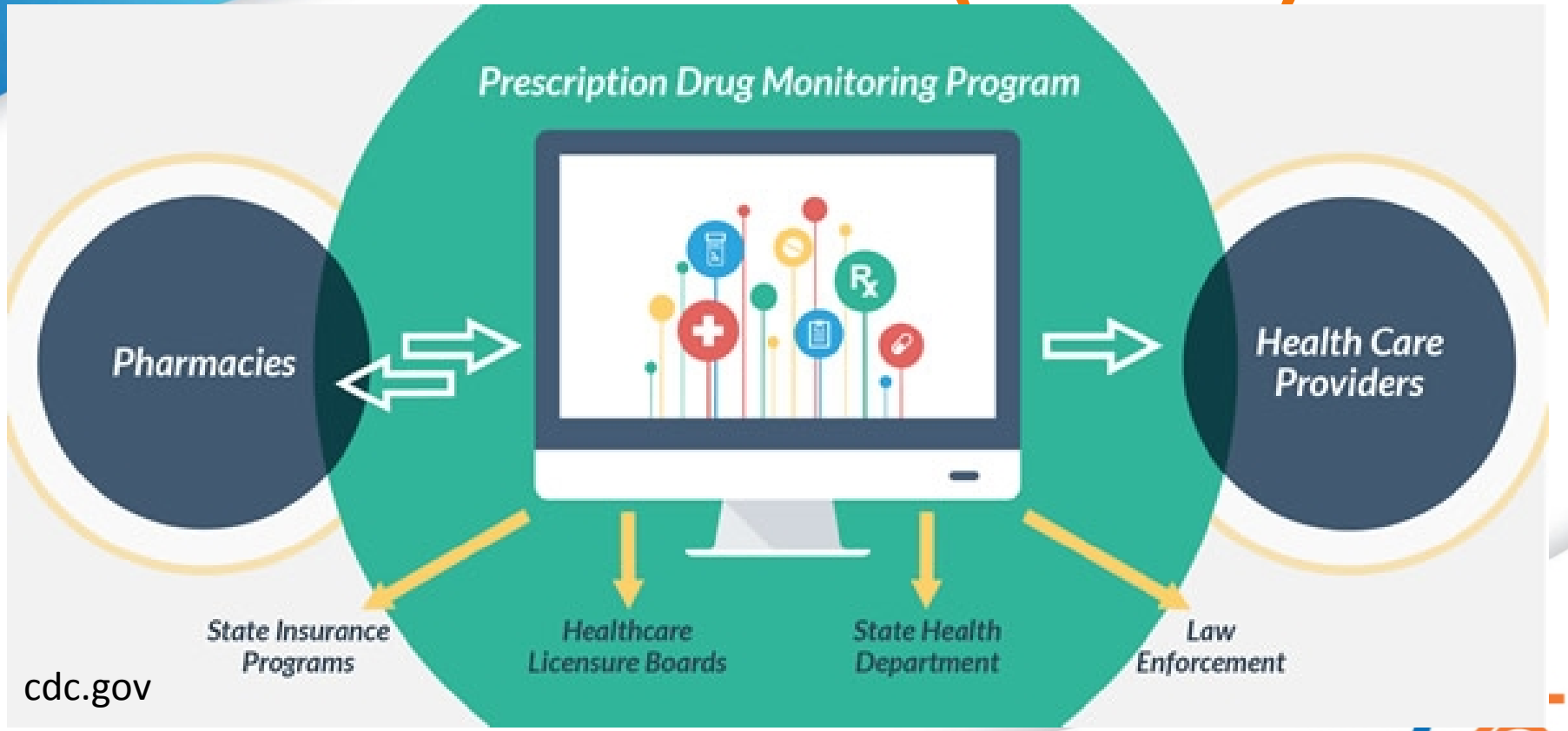
WHAT WE HAVE TO DO

1. PREVENT ADDICTION

2. CONTROL ACCESS

3. TAKE CARE OF PATIENTS WITH ADDICTION

WHAT ARE PMPs (PDMPs)?



cdc.gov

WHO PAYS FOR PMPs?

Board of Pharmacies (20)

Departments of Health (16)

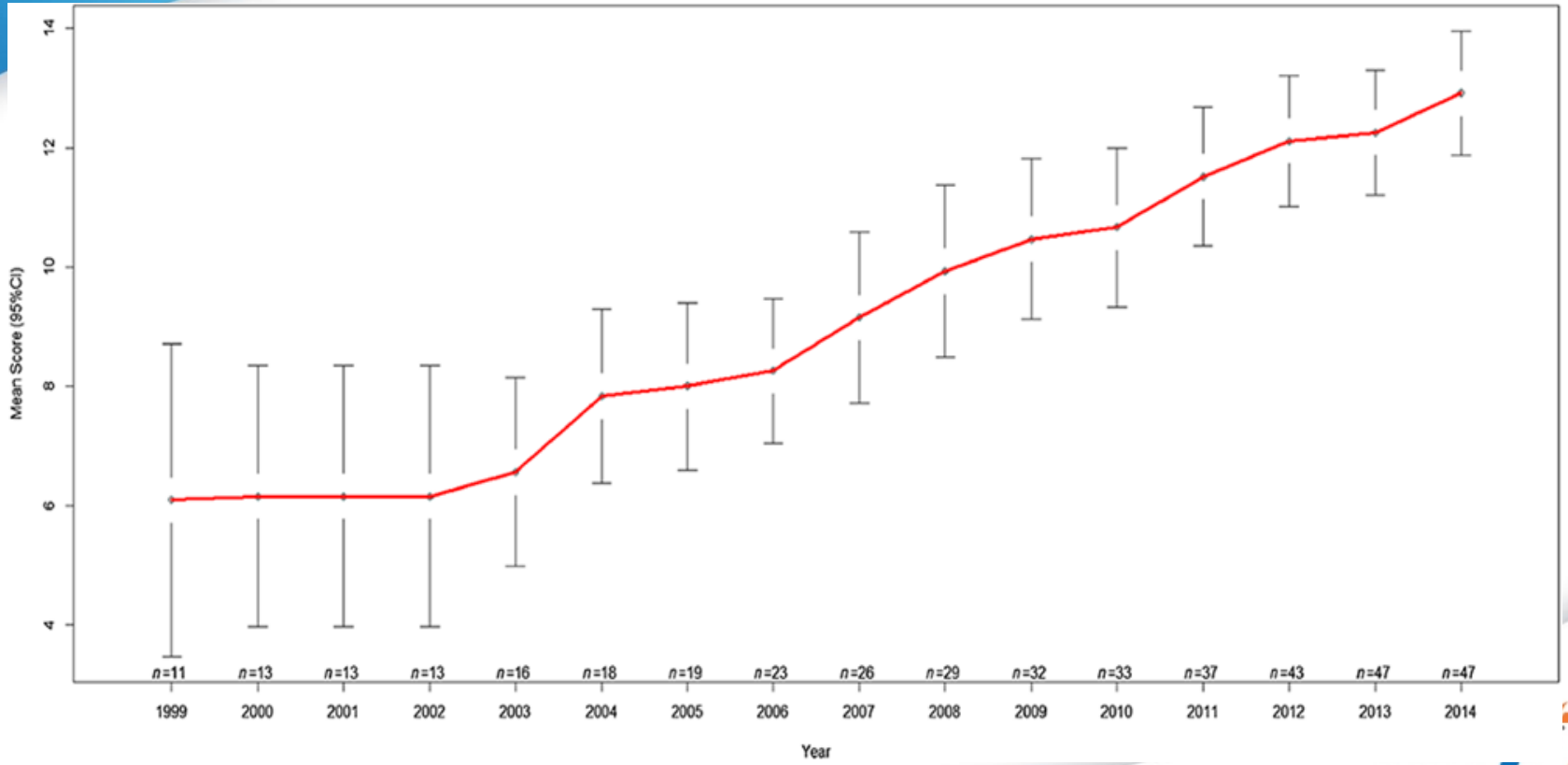
Licensing Boards (6)

Law Enforcement (5)

Substance Abuse Programs (3)

Consumer Protection (1)

WHO HAS PMPs?



Addiction. (2017) 112; 1773–1783

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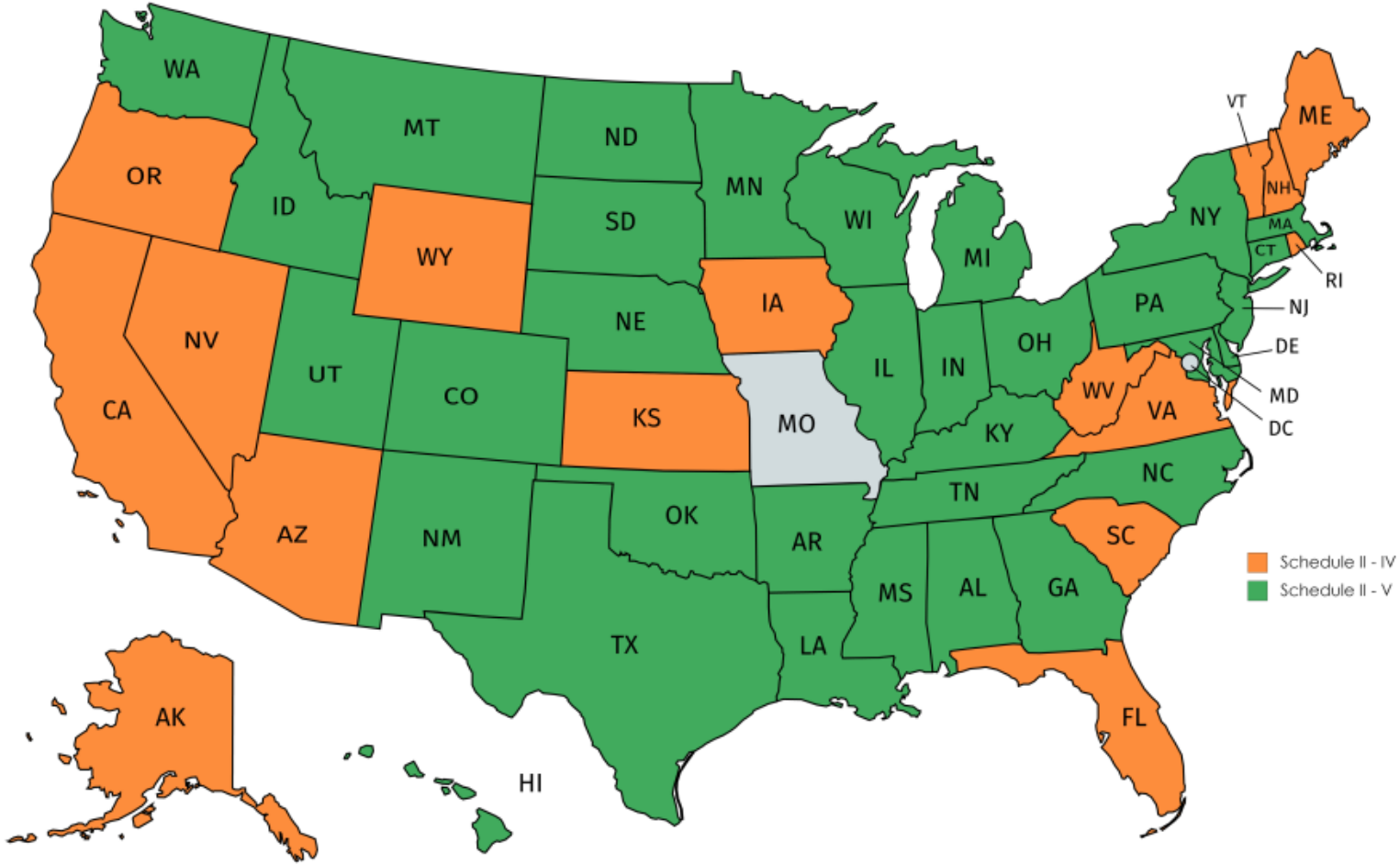
INFO* IN PMPs?

- Controlled substance dispense information
- RX Theft/Loss Report
- Delegate assignment
- Epidemiological data

Date, Name, DOB, Address, Drug Name, Strength, Quantity, Day Supply, Pharmacy (#), Pharmacy DEA, Prescriber's DEA, Prescriber Name, RX#, Refill#

*State specific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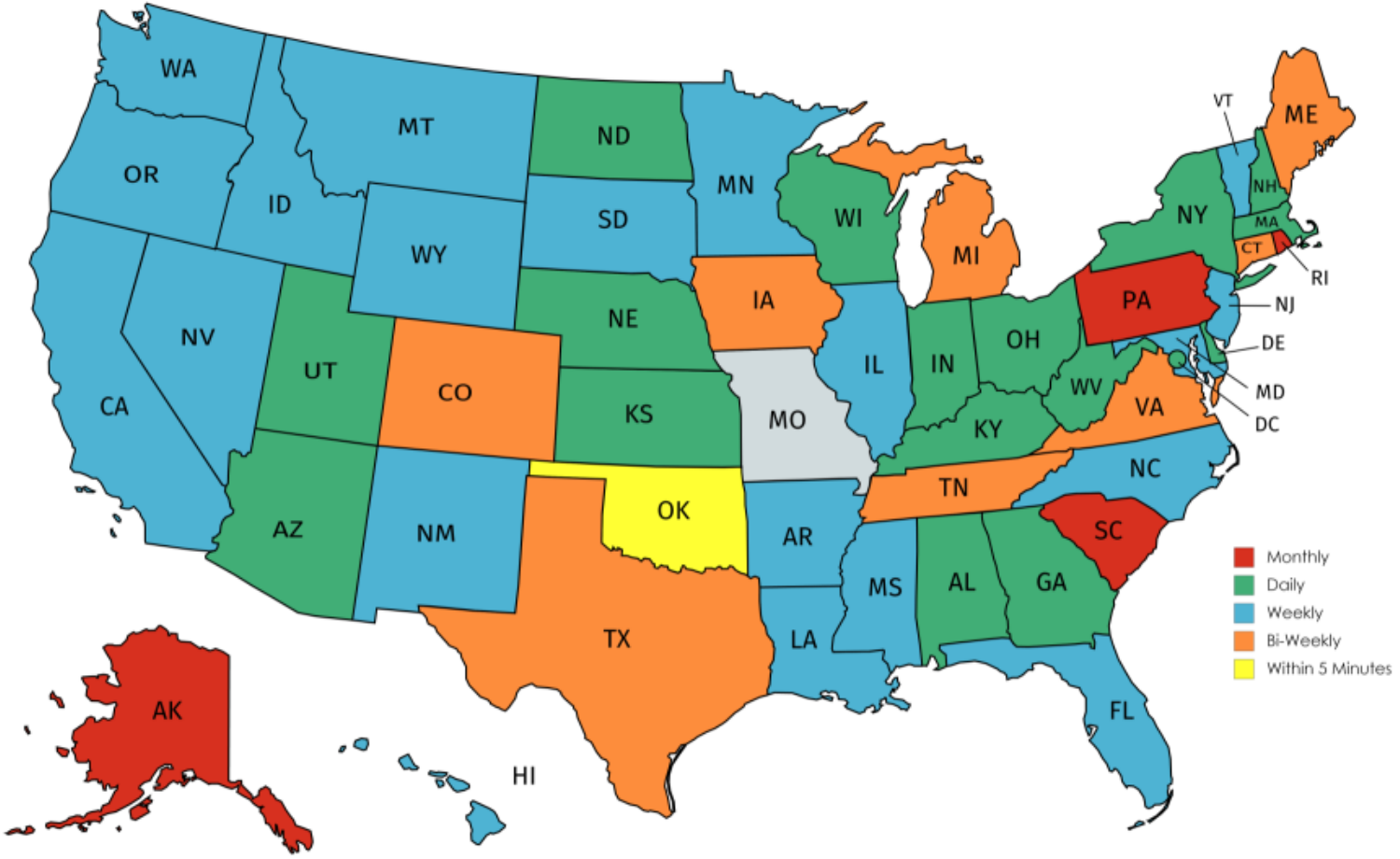
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Monthly
Daily
Weekly
Bi-Weekly
Within 5 Minutes

89,000 Rx for opioids

100,000 Missourians

900 Missourian OD deaths in 2016

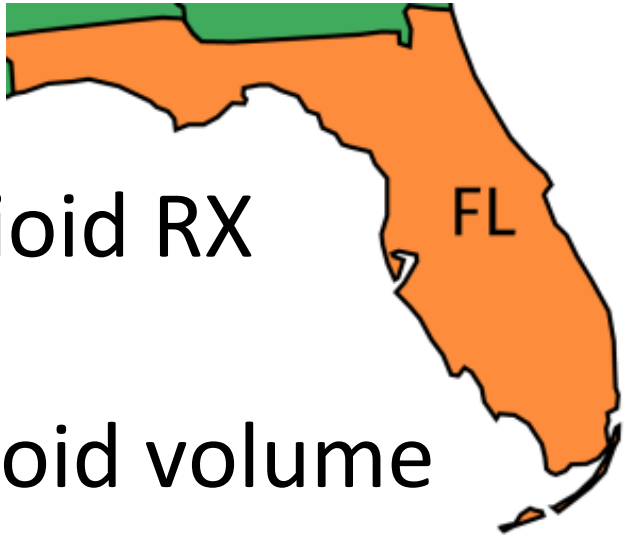
2 Missourian neonates born daily with narcotic withdrawal

Senator Rob Schaaf (R)
District 34

"If they overdose and kill themselves, it just removes them from the gene pool."

governor.mo.gov

DO PMPs WORK?



↓ 1.4% reduction of opioid RX

↓ 2.5% reduction in opioid volume

↓ 5.6% in morphine equivalents per script

n = 40 million prescriptions

JAMA Internal Medicine. 175 (10): 1642–1649

States with PDMP vs States without

↓ MORTALITY

18% [1.6-29%]

States with liberal marijuana laws

↓ MORTALITY

16% [1-30%]

Addiction. (2017) 112; 1773–1783

IDEAL PMPs

- Universal access
- Real time
- Wealth of data
- Ease of use
- All prescription data

WHAT TO DO WITH PMPs?

THE ‘GOTCHA’ APPROACH

USING SOME EVIDENCE

- 2nd opioid Rx = 2x risk of opioids at 1 year
- Risk of dependence ↑ w/day supply: starting with day 3
- Highest risk = XR or Rx for tramadol

CDC MMWR March 17, 2017 Vol 66, No. 10 pp265-269

Case

“Hey, this patient was discharged two days ago with a script for oxycodone. Says he lost the script. Should I write for a replacement script?” --ED Doc

Case

Date	Name	Drug	Dose	Qty	Days	Dr.	Pharmacy
8/22	Patient	Oxy/APAP	5/325 mg	30	8	Dr. C	#1
8/11	Patient	Oxy/APAP	5/325 mg	24	2	Dr. A	#3
7/31	Patient	Oxy/APAP	5/325 mg	24	3	Dr. B	#2
7/29	Patient	Oxy/APAP	5/325 mg	20	10	Dr. A	#1

Pain Medications Are Harming You

Take control of your life.
Get treated.

Call 1-800-662-HELP

Courtesy of Ruben Strayer, MD

SAMHSA's National Helpline is a free, confidential treatment referral and information service for individuals and families facing mental health and/or substance use disorders, including pain medications and heroin.

1-800-662-HELP (4357)
(in English and Spanish)

www.samhsa.gov/find-help

Courtesy of Ruben Strayer, MD

Key Takeaways

- Opioid epidemic continues to claim lives
- PMPs are an imperfect but a useful tool available in all* states
- There is no standard on how to use PMPs for clinical decision making
- If you see a concerning pattern – speak up and offer resources.

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Drug Seeking Behavior

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"Only the medication with the 'D' works for me"

"I'm allergic to acetaminophen and NSAIDs. Oxycodone is fine"

"10/10 pain" (while eating a sandwich)

“Drug Seeking”

- Break the law to get controlled substances to sell on the street
- Deviant behavior to divert drugs as part of addiction
- Behaviors that appear to indicate addiction but actually reflect undertreated pain (pseudoaddiction)
- User/abuser
- Concerted effort to obtain a medication
- Seemingly inappropriate attempt to obtain opioids

Problems

- Terminology can be stigmatizing
  - Causes a patient's actual pain or other issues to be undertreated
  - Pain and misusing opioids is not mutually exclusive
- Defamation claims
- Interference with insurance coverage
- Possibility of misdiagnosis

n = 369 nurses

- General
- Emergency
- Pain Management

Behaviors to Describe Drug Seeking:

- Going to different EDs for opioids
- Telling inconsistent stories about pain/medical history
- Lost/stolen prescription

Drug Seeking Defined As:

- Addicted to opioids
- Abusing pain medication
- Manipulative

McCaffrey, et al. *Pain Manag Nurs* 2005;122-36.

Epidemiology

- Opioid/heroin epidemic
- 30% opioid prescriptions diverted for illegal use
- 44 million pain-related visits annually to US EDs (42.6%)
- ED visits for nonmedical use of opioids increased 111% 2004-2008
- Subjective and difficult to quantify drug seeking behavior
- ED volume 75,000/yr → 262 (4%) drug-seekers/month
  - Age ~ 34.3 years, ~ 13 ED visits/year, ~ 4 different hospitals, ~2 different aliases

Cicero TJ, et al. *Pharma Drug Safety* 2007;16:827-30.; CDC MMWR 2010. Vol. 59, No. 23; Hansen GR. Emerg Med Clin N Am 2005;23:349-65.; Zednich AD, et al. *Acad Emerg* Med 1996;3:312–7; Pletcher MJ, et al. *JAMA* 2008;299:70-8.

Classic Behaviors

- Allergies to non-narcotic pain medications; everything other than drug of choice
- Requests opioids, benzos or muscle relaxants by name; claim other medications do not work
- Requests IV opioids
- Requests increased dose
- Preoccupation with opioids
- Lost/stolen medications
- Multiple visits for pain and same complaint

- 10/10 pain
- Suspicious history
- Angry when questioned closely about pain symptoms
- Symptoms out of proportion to examination
- No primary care physician
- Specific about which physician they want to see
- Increases doses without provider's instruction
- Uses aliases

Weiner SG, et al. *Ann Emerg Med* 2013;62:281-89.; James J, et al. *Aust Prescr* 2016;39:96-100.

"Classic" Behaviors	Total (n = 178)	% Total Visits (n = 2,486)	95% CI
10/10 pain	724	29.1	27.3-30.9
Headache	539	21.7	20.1-23.2
Back pain	516	20.8	19.2-22.4
Med by name	377	15.2	13.8-16.6
Out of medication	235	9.5	8.3-10.6
Need refill	174	7	6-8
Request IV	106	4.3	3.5-5.1
Dental pain	45	1.8	1.3-2.3
10+ pain	44	1.8	1.3-2.3
Lost medication	15	0.6	0.3-0.9

Grover CA, et al. *West J Emerg Med* 2012;13:416-21)

Mixed Methods Study

- Video vignettes (n = 192 PCPs)
  - Active request for a medication or more general request for help with back pain as a new complaint in an established patient
- Assessment of “drug-seeking”
  - 21% active request vs. 3% general request, p <0.001
  - Active request: OR 8.1 (95% CI 2.1-31.2)
  - More likely to inquire about substance abuse
  - 50% recognized potential for misuse and evaluated risk/benefit

Fisher MA, et al. *PLoS ONE* 2017; 12:e0178690.

Drug-Seeking Defined by PDMP

Behaviors	OR	95% CI
Requests for opioids by name	1.9	1.1-3.2
Multiple visits for same complaint	2.5	1.5-4.2
Suspicious history	1.9	1.1-3.2
Symptoms out of proportion to examination	1.8	1.1-3

≥ 4 opioid prescriptions from ≥ 4 providers in 12 months

Weiner SG, et al. *Ann Emerg Med* 2013;62:281-289.

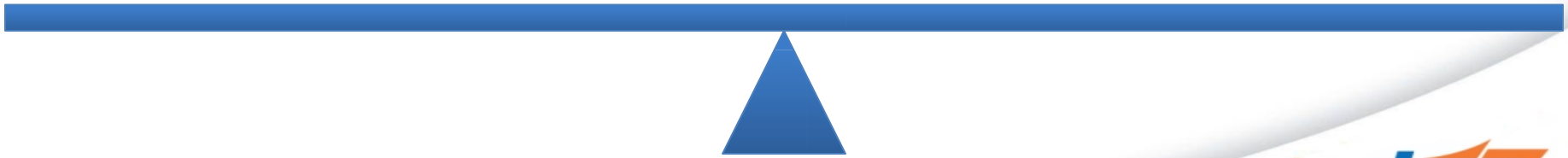
Emergency Department as a Target

- Always open
- Visit/history might be brief
- No verification of past medical history
- Minimal time to sort out drug-seeking
- Frequent visits might go unnoticed (different EDs)

Difficulty in Managing Patients

Pain “Control”

Protect susceptible patients from consequences of drug abuse/addiction



Pain and misusing opioids are not mutually exclusive

Patient Approach

- Use prescription monitoring program data
- Explain why the prescription pattern is a problem
- Clarify the treatment plan from the beginning
- Reinforce that patients are best served by having their pain managed comprehensively as outpatients

ED Strategies

- Patient photos
- Opioid policies/guidelines
- Prescription drug monitoring programs
- Treatment pathways
  - Pain management with history of substance abuse
- Patient agreements
- Care coordination/case managers
- E-prescribing

Meditech Nurse Advisory Committee.
https://home.meditech.com/en/d/casestudies/otherfiles/nacspecialreportmanagingtheopioidcri.pdf

Practice recommendations (treatment in the ED)

- Alternative modes for symptom management (non-pharmacologic and pharmacologic) should be trialed as first-line approach to pain management before opioids
  - Refer to adult and pediatric non-opioid treatment pathways for specific disease states
- Opioids are not indicated for:
  - Abrasions
  - Burns (minor)
  - Cellulitis
  - Chest pain
  - Contusions
  - Cough
  - Dental pain without acute trauma
  - Dysuria
  - Ear pain
  - Hemorrhoids
  - Lacerations
  - Neck pain
  - Sexual transmitted diseases
  - Sprains/strains
  - Throat pain
- Patients should be educated regarding appropriate expectations for pain control in the ED

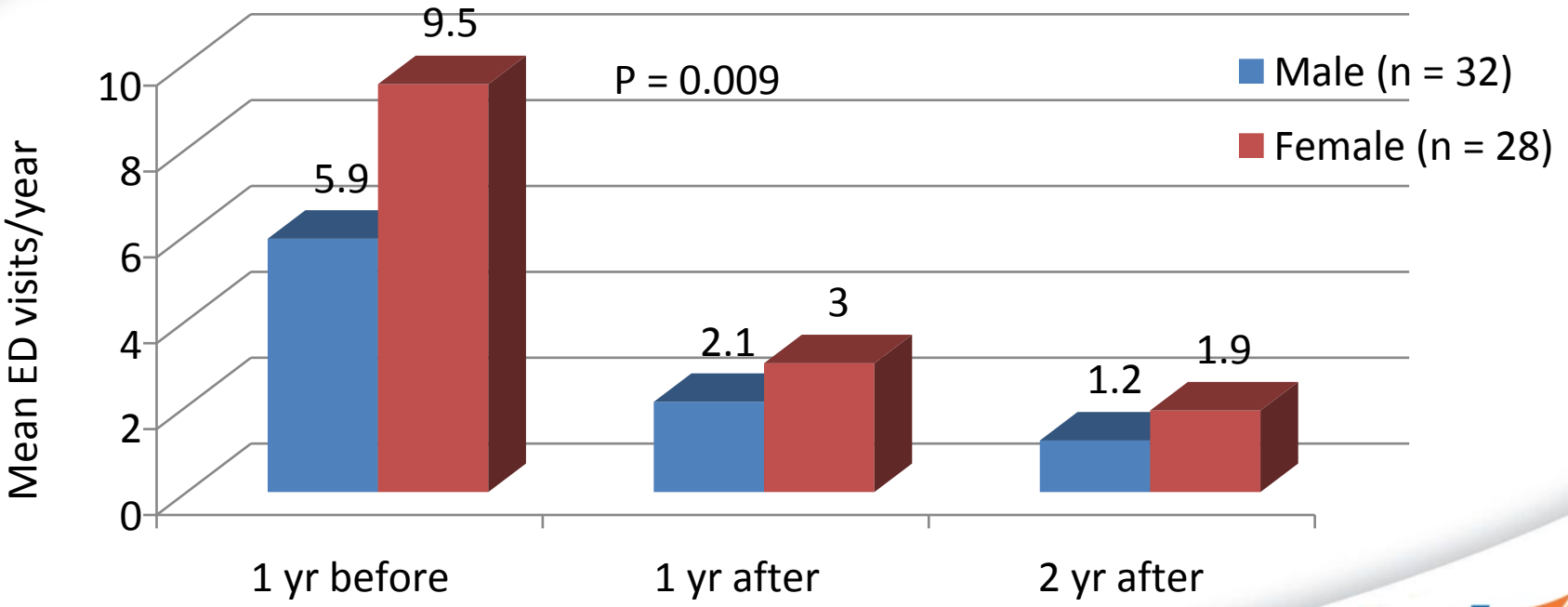
High-risk Criteria for Opioid Addiction	*High-risk Factors for Opioid Related Adverse Events*
• Personal or family history of substance abuse (alcohol, illicit drugs, prescription drugs)	• Extremes of age (infant or elderly)
• Age between 16 and 45	• Pulmonary comorbidities (COPD, sleep apnea)
• Mental health/psychological history (e.g. depression, attention deficit disorder, bipolar disorder, schizophrenia)	• Cardiac comorbidities (CHF)
• History of sexual abuse	• Organ dysfunction (renal or hepatic)

The Dangers of Opioids (Information in talking with patients)	
Common side effects	*Serious side effects of chronic use*
Nausea/vomiting	Cardiac abnormalities, including prolonged QTc and torsades de pointes
Constipation	Sudden cardiac death with concomitant use of benzodiazepines and methadone
Pruritus	Hormonal disruptions, including decreased testosterone in males
Euphoria	Decreased LH and FSH and fertility in women
Respiratory depression, particularly with the simultaneous use of alcohol, benzodiazepines, antihistamines, muscle relaxants, or barbiturates	Musculoskeletal compromise, including increased risk of osteoporosis
Lightheadedness	Immunosuppression
Dry mouth	Hyperalgesia (upregulation of receptors and increased tolerance)
	Sleep disturbances
	Delayed or inhibited gastric emptying, increased sphincter tone, and blockade of peristalsis

URMC ED Guidelines

- *Patients on chronic opioids:*
  - Should receive opioid medications from one practice. EM providers should coordinate care with a patient's primary pain treatment physician whenever possible.
  - Should not be prescribed additional opioids through the ED
  - Should not have opioid regimens adjusted for chronic conditions and should not be routinely prescribed narcotics for acute exacerbations of non-chronic pain
- *Patients at high risk for misuse (Table 1):*
  - May need to be given smaller supplies of controlled substances
  - Benefit from earlier follow-up with a PCP or appropriate specialist for ongoing management
- The ED will not refill lost, chronic, stolen, or otherwise missing opioid prescriptions or controlled substances
- When considering opioids, the lowest effective dose in the shortest appropriate duration (e.g. ≤ 3 days) should be prescribed
- Long-acting or extended release opioid products should not be used for relief of acute pain

Care Plan Utilization



Fiesseler F, et al. Am J Emerg Med 2015;33:1799-1801.

"Only the medication with the 'D' works for me"

"I'm allergic to acetaminophen and NSAIDs. Oxycodone is fine"

"10/10 pain" (while eating a sandwich)

Drug Seeking Behaviors

- Evaluate previous history/ED visits/PDMP history
- Discuss pattern with patient
- Discuss risks of opioids with patient
- Risk/benefit evaluation for medication therapy to treat current pain
- Discuss appropriate expectations for pain control
- Case management if necessary

Key Takeaways

- Several classic behaviors associated with opioid misuse
- Implement strategies to decrease drug seeking behavior
- Pain and opioid misuse are not mutually exclusive
- Risk/benefit evaluation if necessary
  - Utilize resources available in the ED

Thank You!

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Opioid Alternatives for Treatment of Acute Pain

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Assistant Professor of EM, Harvard Medical School

@PharmERToxGuy

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plot
imagination
fabrication
urban legend
fantasy
fiction
hoax
belief
news
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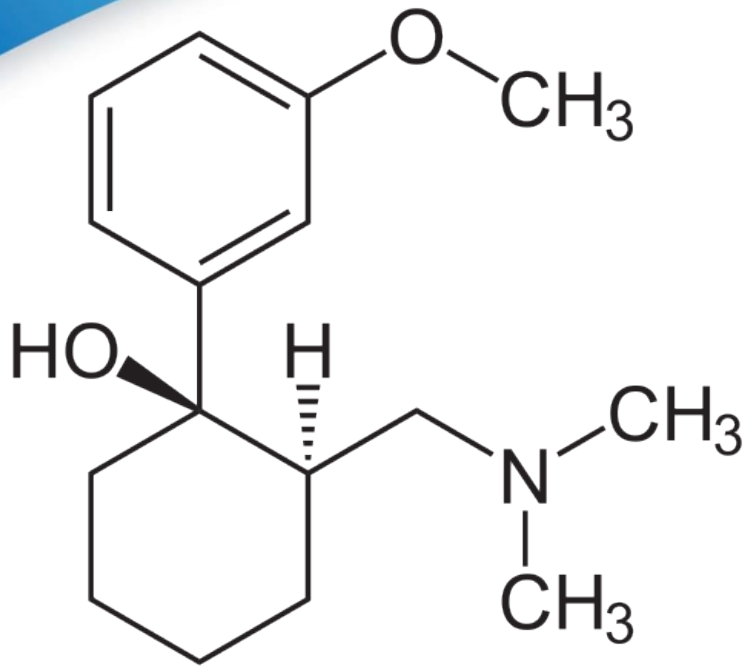

TRAMADOL

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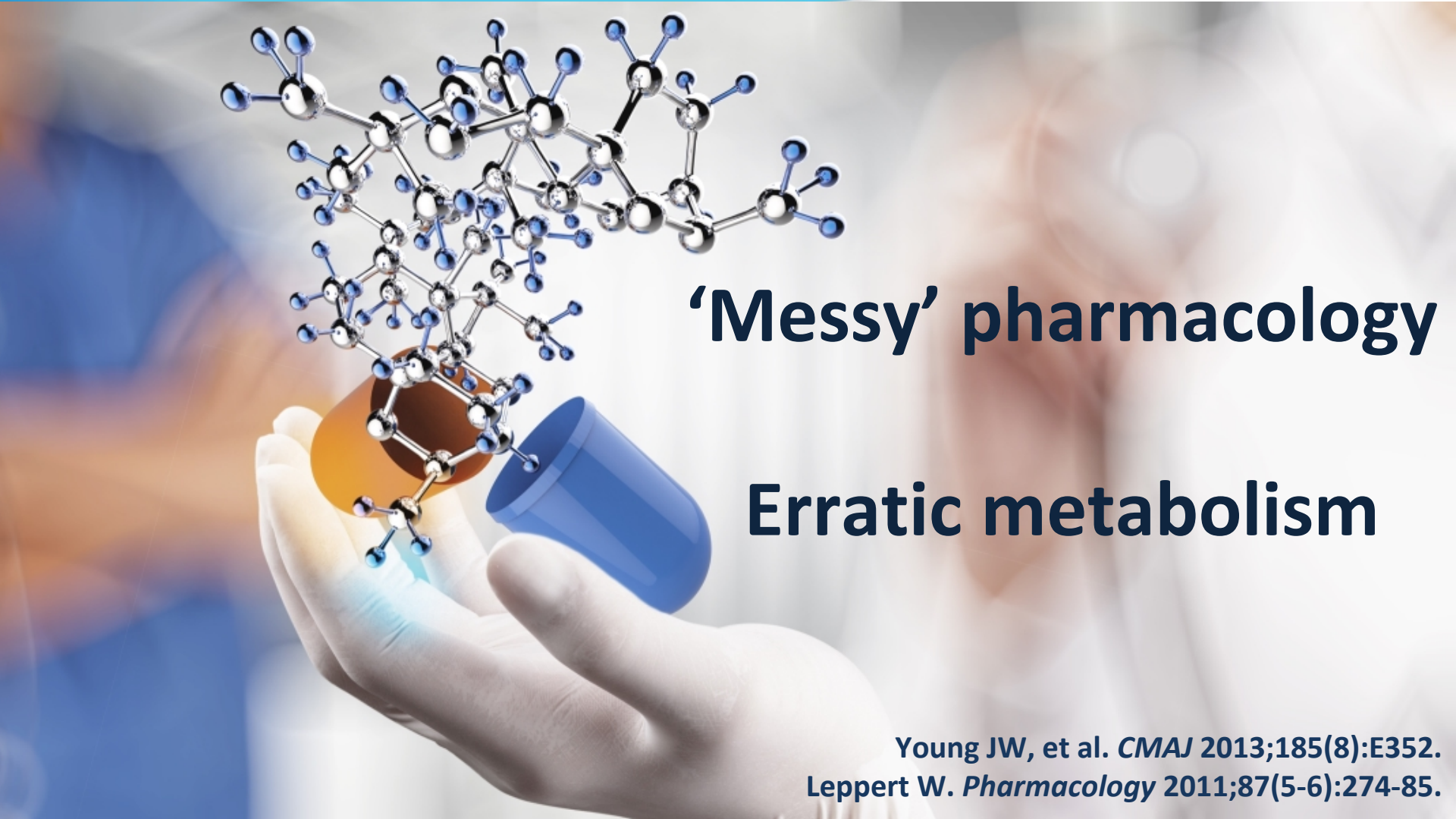
Which of the following problems may be associated with tramadol?

A Warfarin interaction

B Hypoglycemia

C Seizures

D Erratic metabolism



‘Messy’ pharmacology

Erratic metabolism

Young JW, et al. *CMAJ* 2013;185(8):E352.
Leppert W. *Pharmacology* 2011;87(5-6):274-85.

DOES IT WORK?

Osteoarthritis: modest

Neuropathic: comparable to alternatives

Cepeda MS, et al. *Cochrane Database Syst Rev* 2006;(8):CD005522.
Hollingshead J, et al. *Cochrane Database Syst Rev* 2006;(3):CD003726.

IN THE ED

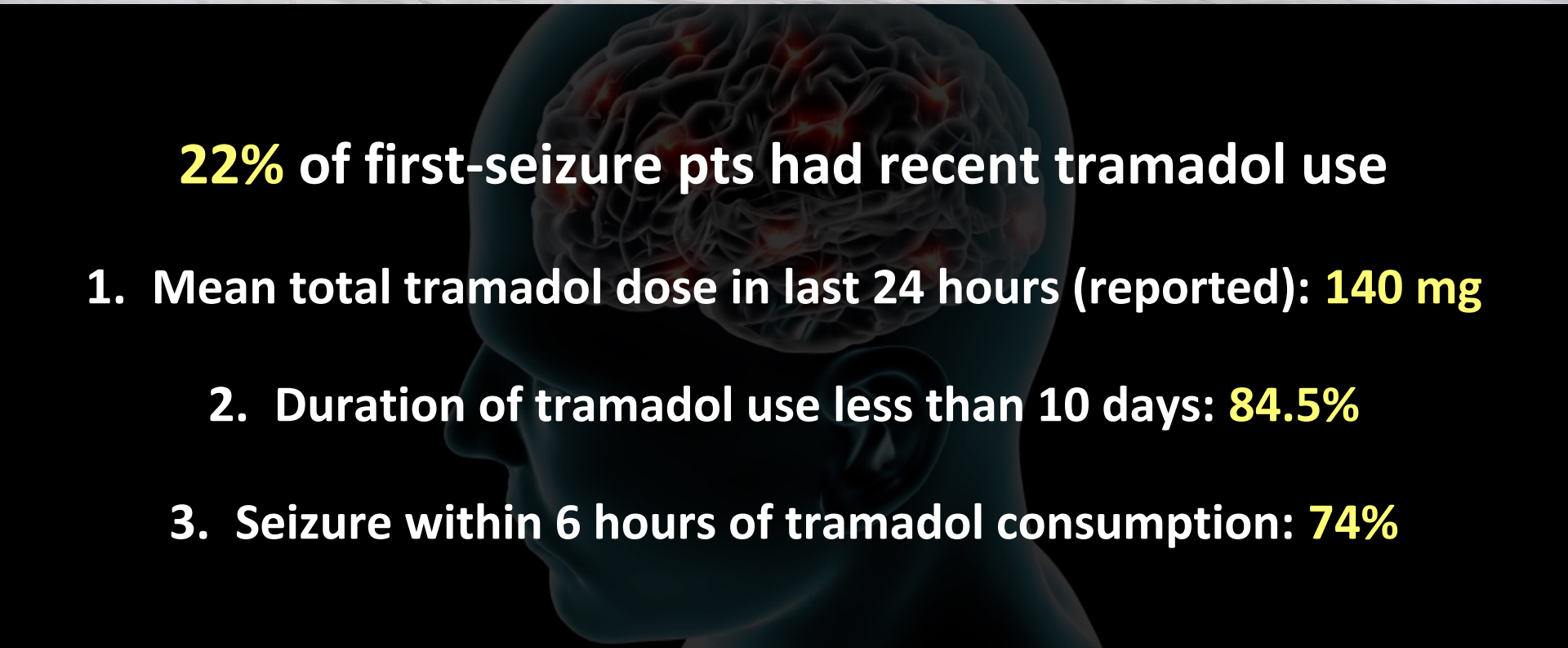
MS: ↓ hydroc/APAP

Ankle: = hydroc/APAP

Turturro MA, et al. *Ann Emerg Med 1998*;32(2):139-43.
Hewitt DJ, et al. *Ann Emerg Med* 2007;49(4):468-80.

Prevalence of Tramadol Consumption in First Seizure Patients: a One-Year Cross-Sectional Study

Asadi P, et al. *Emerg (Tehran)* 2015;3:159-61.

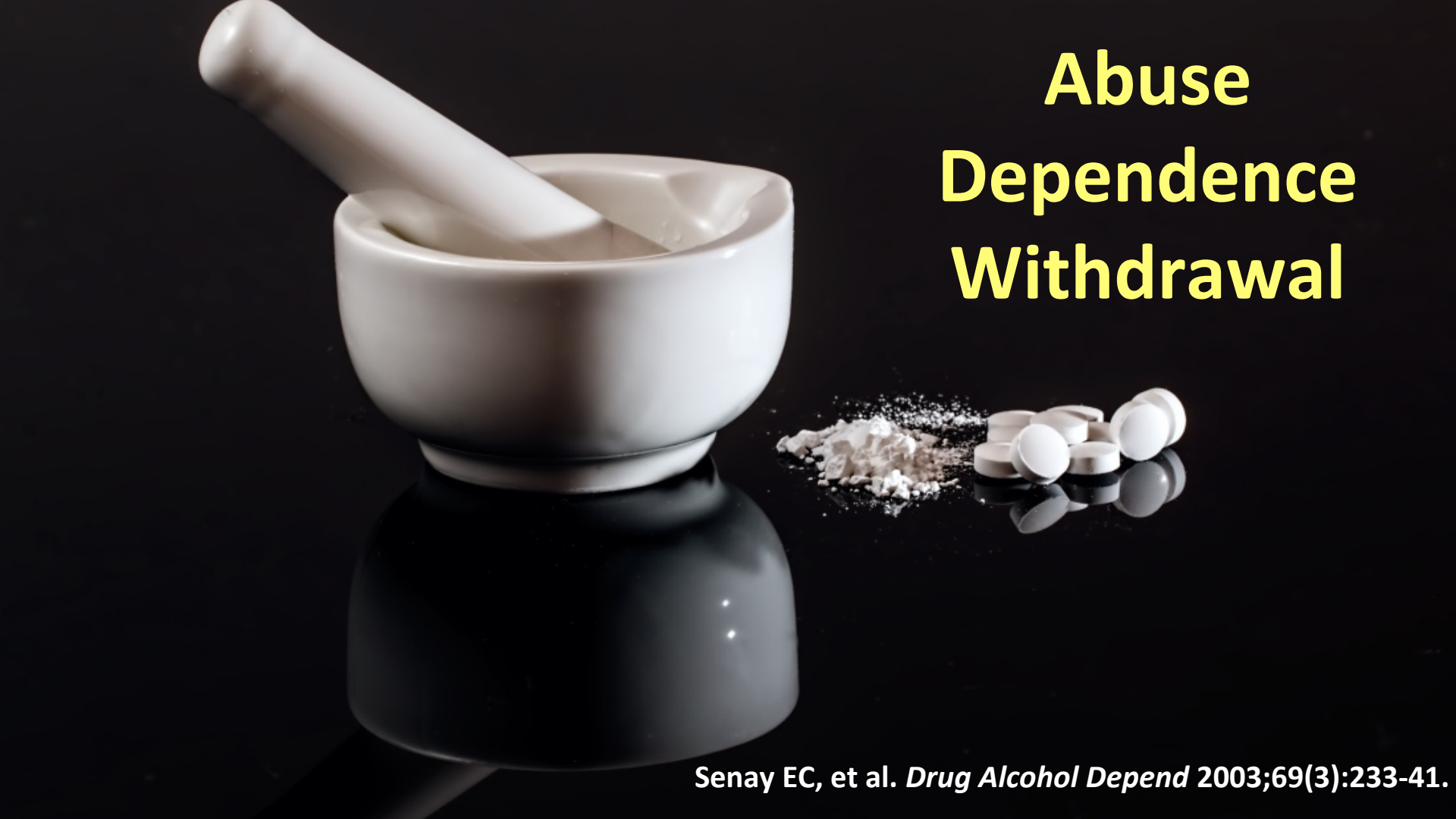


22% of first-seizure pts had recent tramadol use

1. Mean total tramadol dose in last 24 hours (reported): **140 mg**
2. Duration of tramadol use less than 10 days: **84.5%**
3. Seizure within 6 hours of tramadol consumption: **74%**

Hypoglycemia

Fournier JP, et al. *JAMA Intern Med* 2015;175(2):186-93.



Senay EC, et al. *Drug Alcohol Depend* 2003;69(3):233-41.

Warfarin Interaction

Hosono T, et al. *Yakugaku Zasshi* 2017;137(8):999-1003.

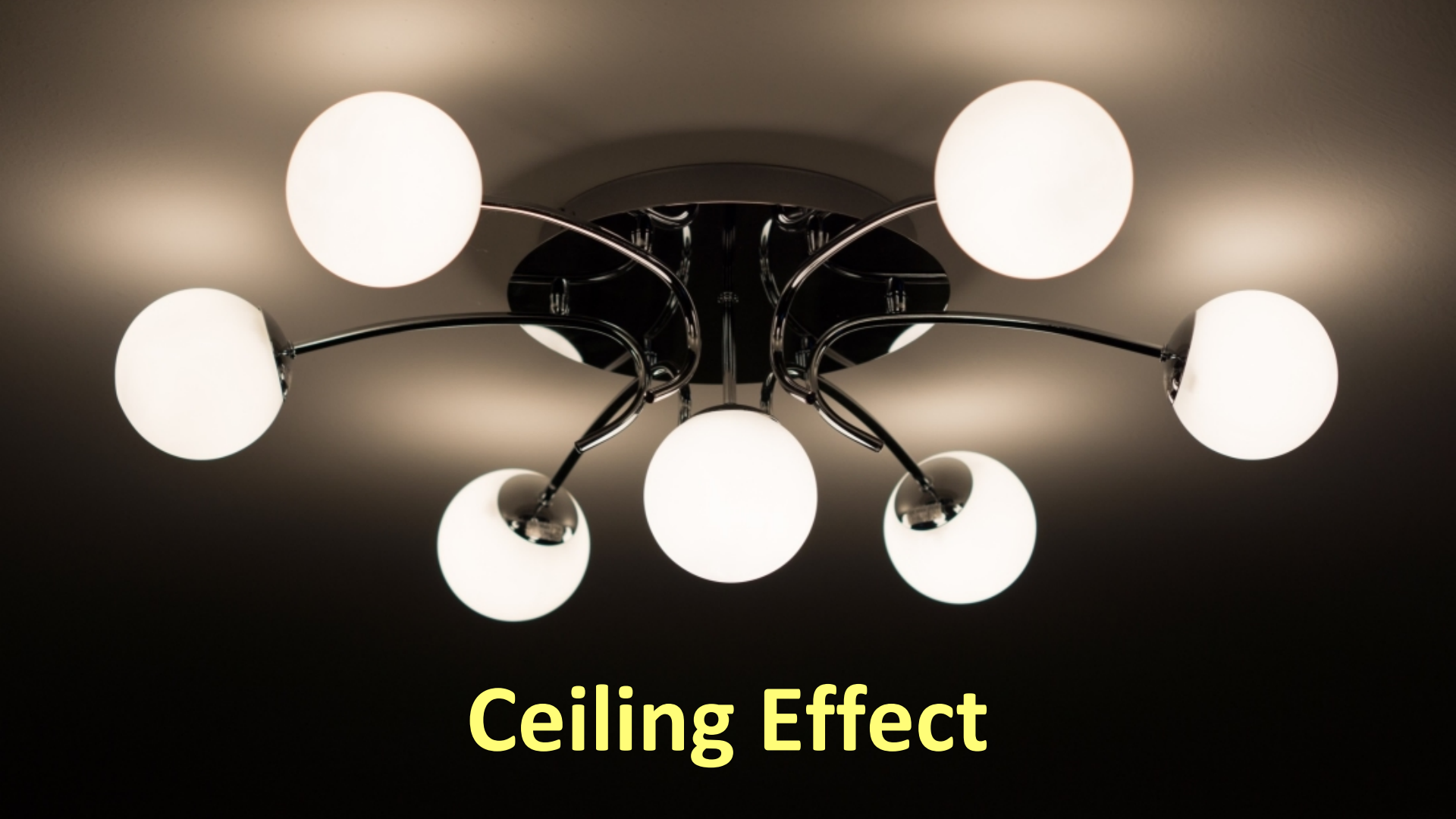
A 30 year old male presents with acute back pain after playing basketball. Which dose of ketorolac is appropriate?

A 60 mg IM

B 30 mg IM

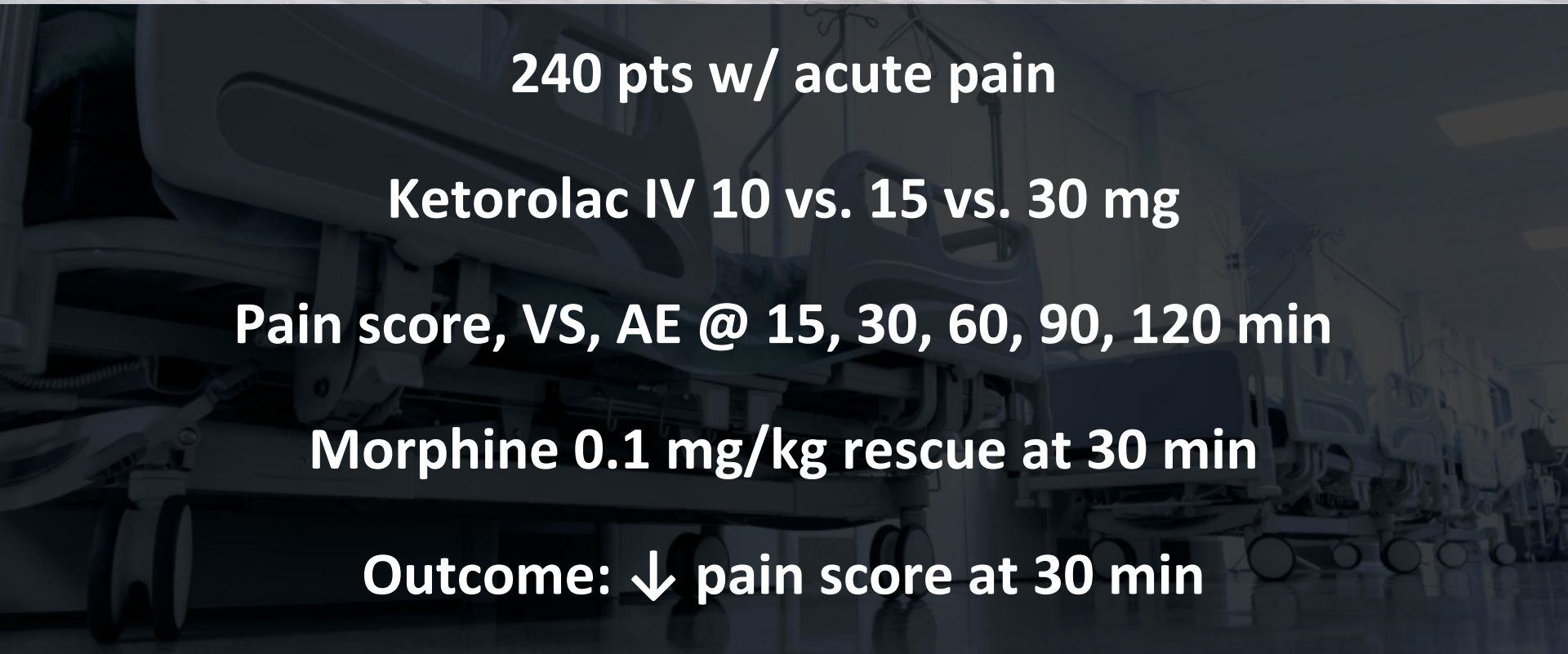
C 30 mg IV

D 15 mg IV


Ceiling Effect

Comparison of Intravenous Ketorolac at Three Single-Dose Regimens for Treating Acute Pain in the ED: A Randomized Controlled Trial

Motov S, et al. *Ann Emerg Med* 2017;70(2):177-84.



240 pts w/ acute pain

Ketorolac IV 10 vs. 15 vs. 30 mg

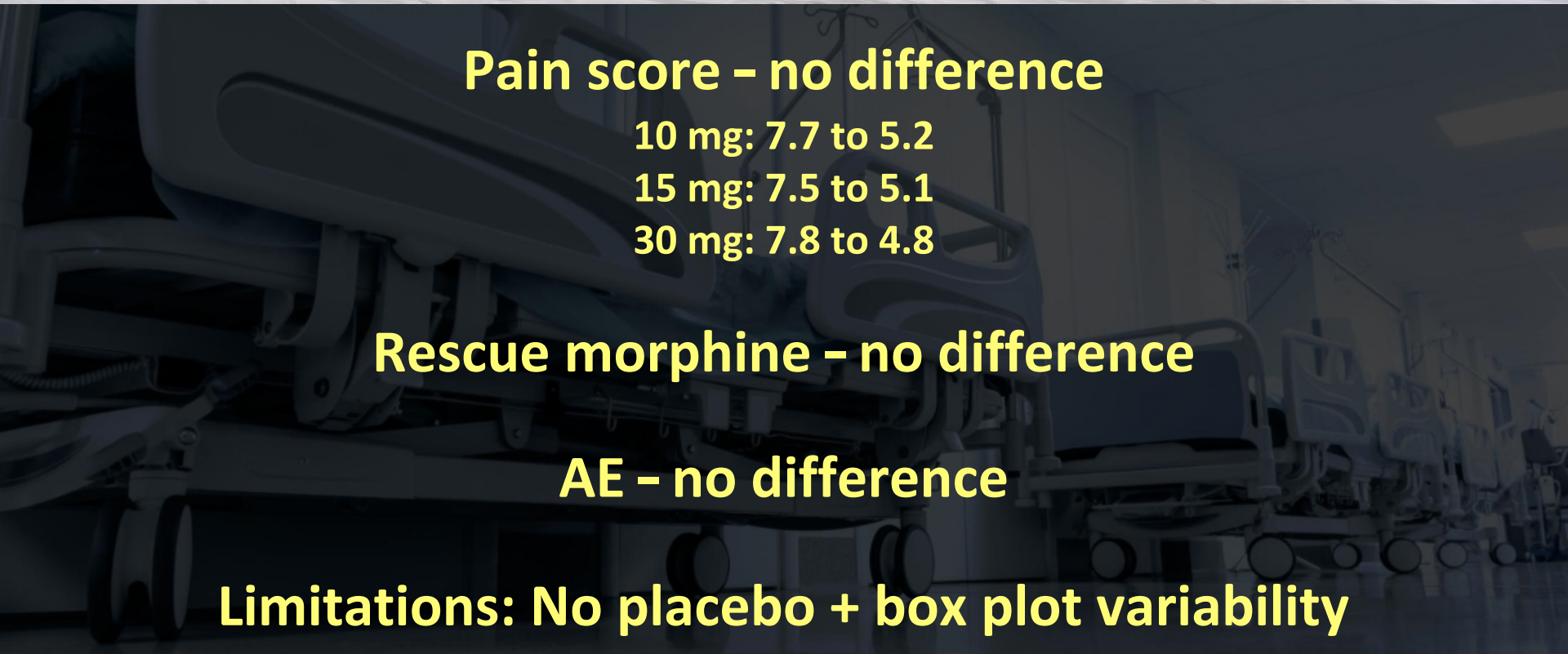
Pain score, VS, AE @ 15, 30, 60, 90, 120 min

Morphine 0.1 mg/kg rescue at 30 min

Outcome: ↓ pain score at 30 min

Comparison of Intravenous Ketorolac at Three Single-Dose Regimens for Treating Acute Pain in the ED: A Randomized Controlled Trial

Motov S, et al. *Ann Emerg Med* 2017;70(2):177-84.



Pain score – no difference

10 mg: 7.7 to 5.2

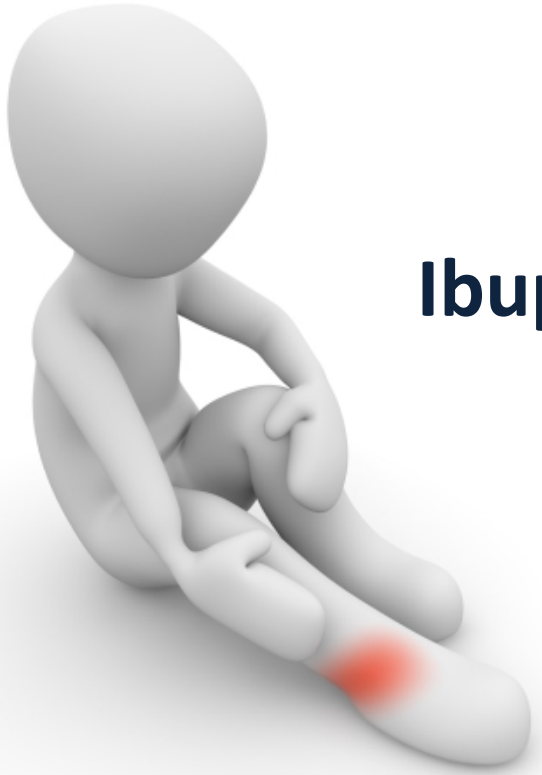
15 mg: 7.5 to 5.1

30 mg: 7.8 to 4.8

Rescue morphine – no difference

AE – no difference

Limitations: No placebo + box plot variability



Ketorolac 10-15 mg = 30 mg (or 60)

↑ dose = ↑ AE

Ibuprofen ceiling 400-600 mg

Anti-inflammatory

A 30 year old male presents with acute back pain after playing basketball. Which dose of ketorolac is appropriate?

A 60 mg IM

B 30 mg IM

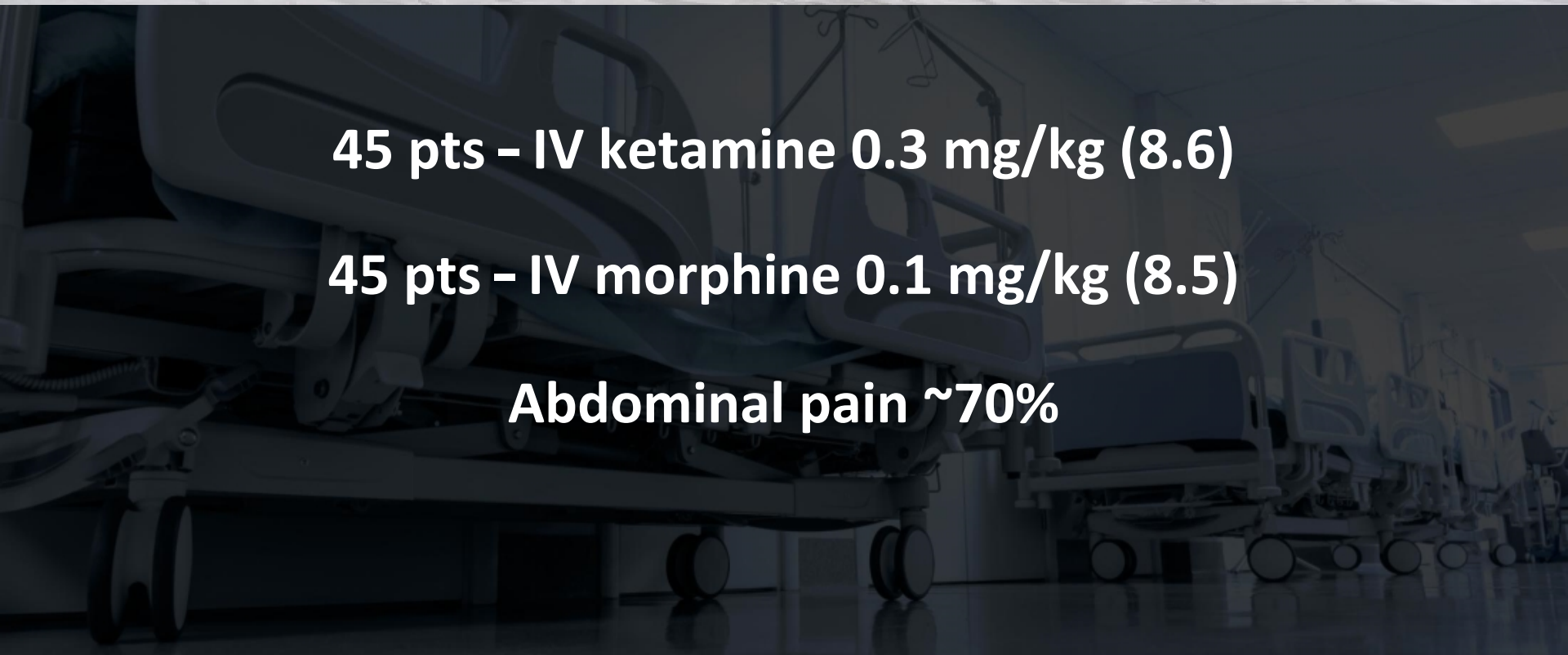
C 30 mg IV

D 15 mg IV


WARNING
KETAMINE

Intravenous Subdissociative-Dose Ketamine Versus Morphine for Analgesia in the ED: A Randomized Controlled Trial

Motov S, et al. *Ann Emerg Med* 2015;66(3):222-9.



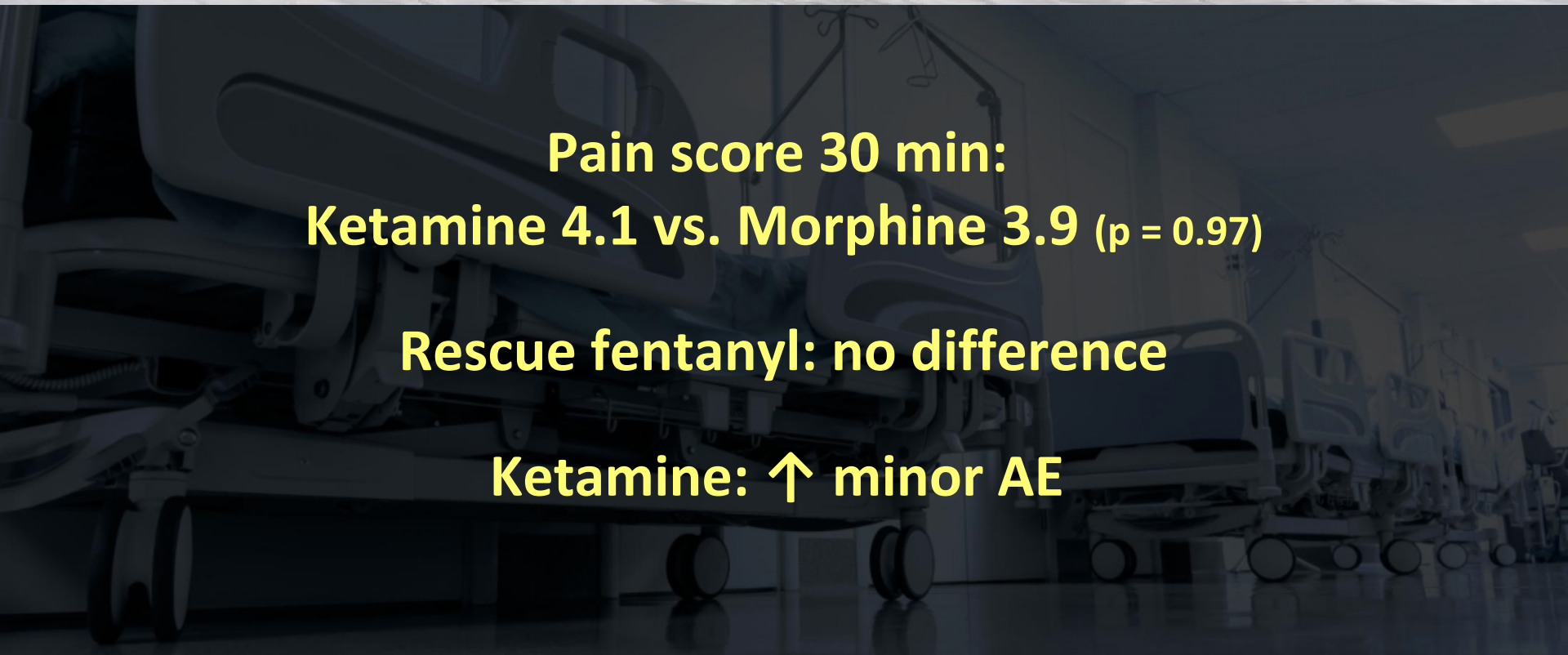
45 pts – IV ketamine 0.3 mg/kg (8.6)

45 pts – IV morphine 0.1 mg/kg (8.5)

Abdominal pain ~70%

Intravenous Subdissociative-Dose Ketamine Versus Morphine for Analgesia in the ED: A Randomized Controlled Trial

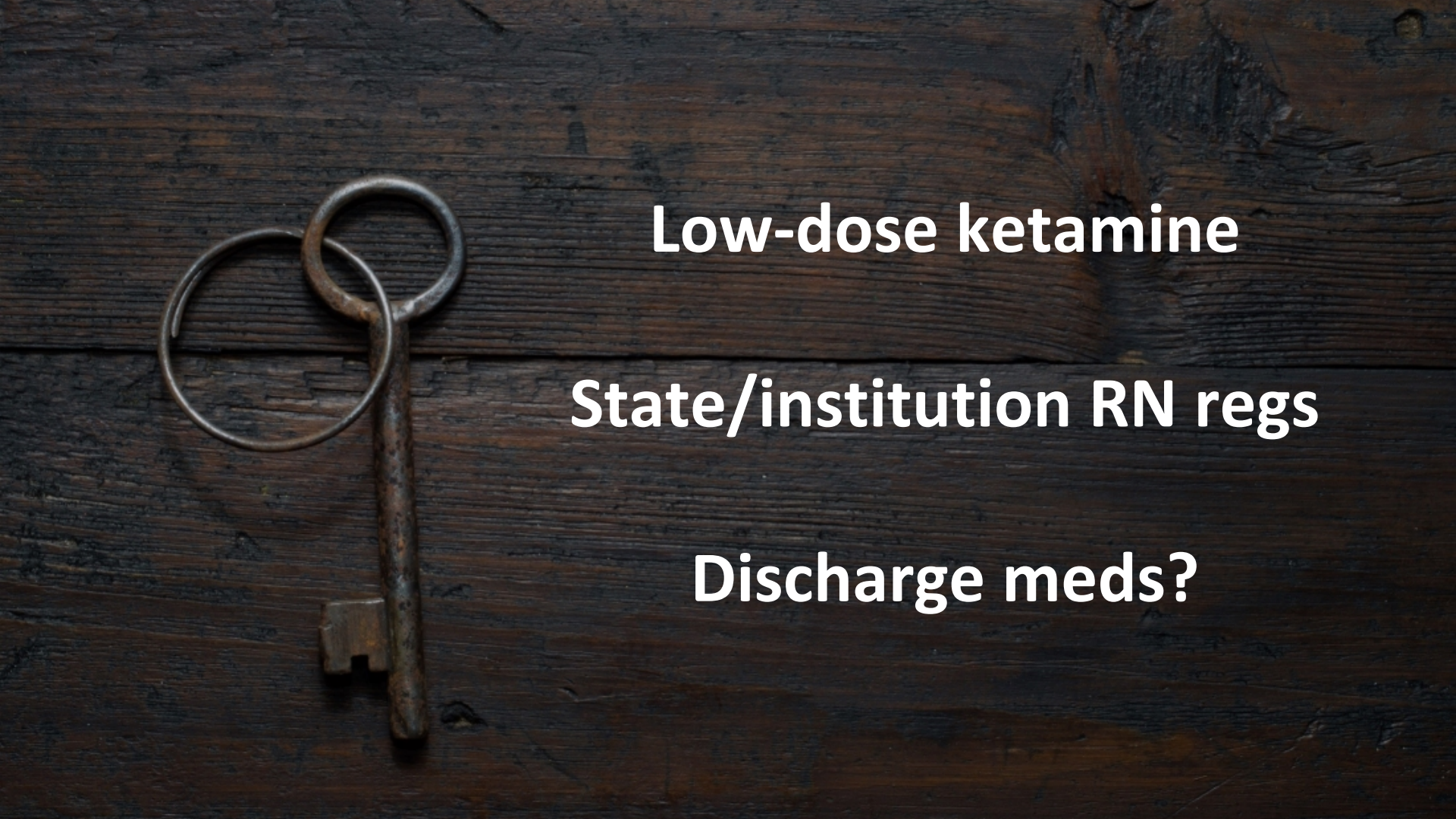
Motov S, et al. *Ann Emerg Med* 2015;66(3):222-9.



Pain score 30 min:
Ketamine 4.1 vs. Morphine 3.9 ($p = 0.97$)

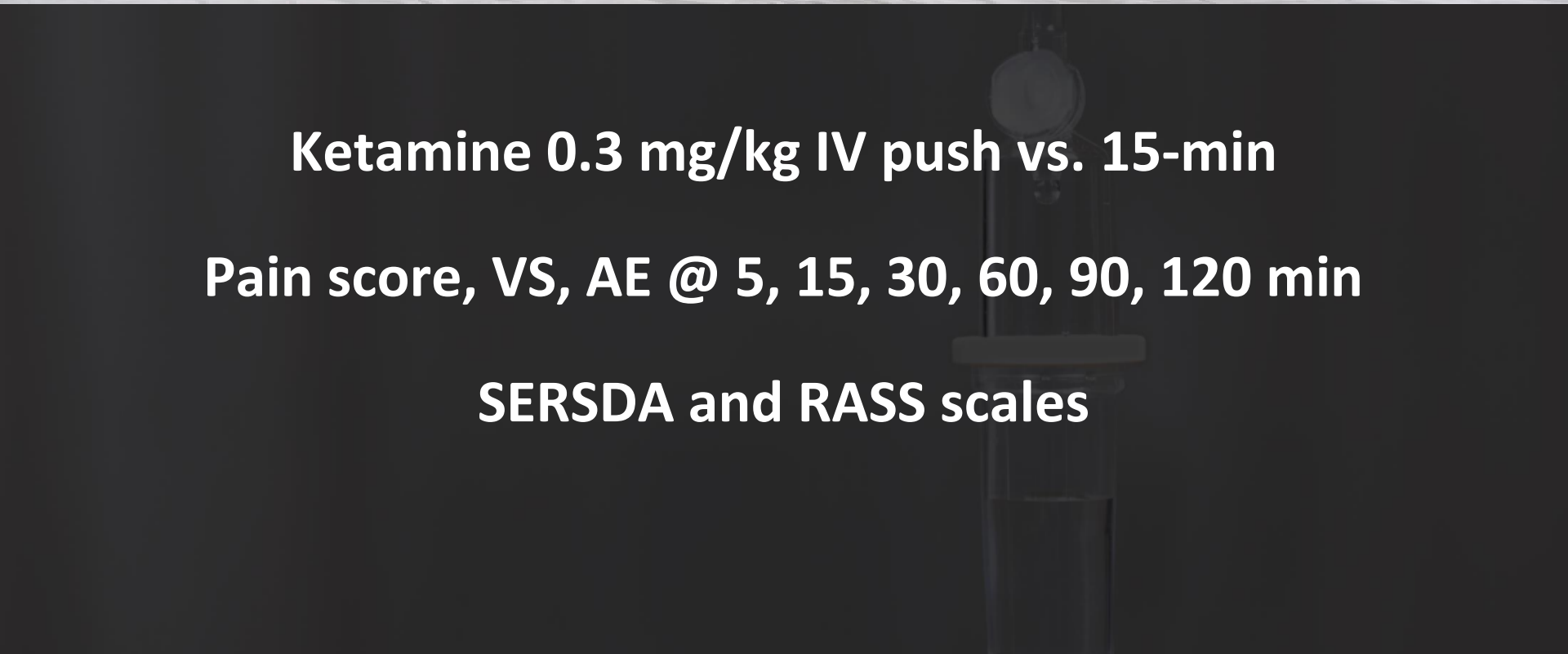
Rescue fentanyl: no difference

Ketamine: ↑ minor AE


Low-dose ketamine
State/institution RN regs
Discharge meds?

A prospective randomized, double-dummy trial comparing IV push low dose ketamine to short infusion for treatment of pain in the ED

Motov S, et al. *Am J Emerg Med* 2017;35(8):1095-1100.



Ketamine 0.3 mg/kg IV push vs. 15-min

Pain score, VS, AE @ 5, 15, 30, 60, 90, 120 min

SERSDA and RASS scales

A prospective randomized, double-dummy trial comparing IV push low dose ketamine to short infusion for treatment of pain in the ED

Motov S, et al. *Am J Emerg Med* 2017;35(8):1095-1100.

24 patients in each group

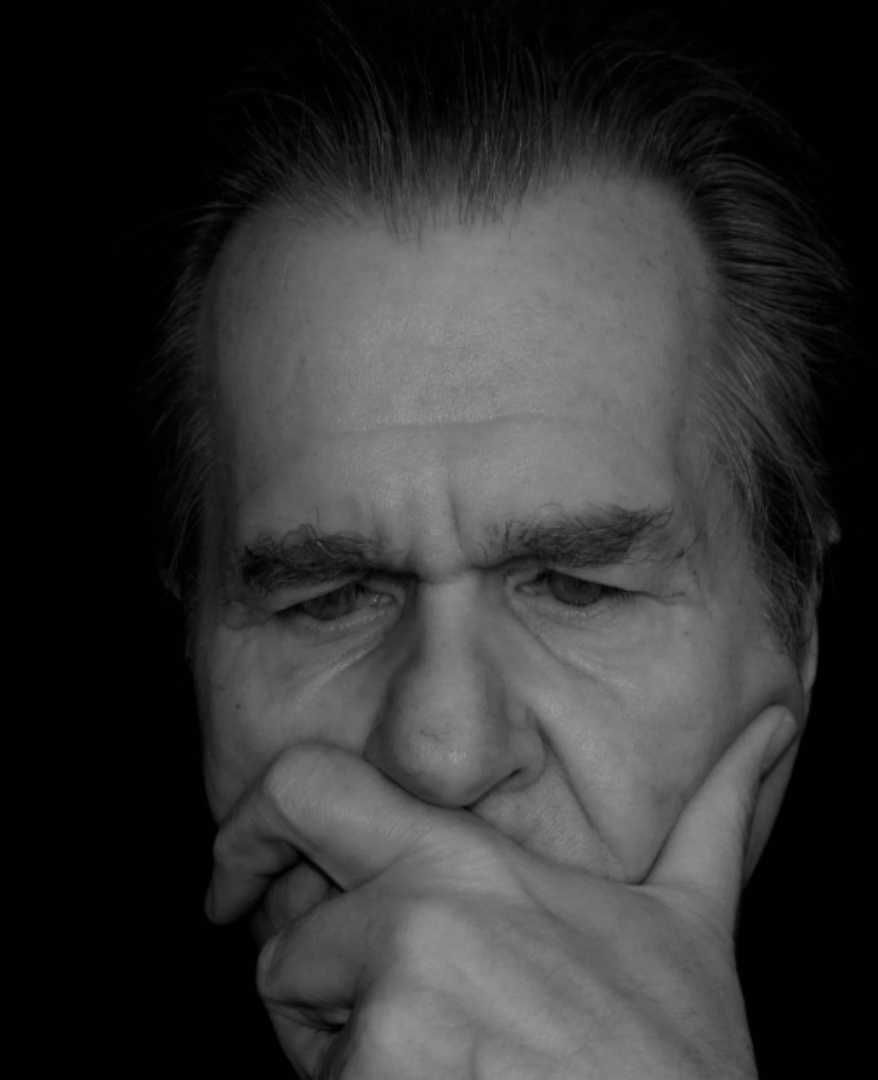
SERDSA: IV push 3.0 vs infusion 0.0 (p = 0.001)
RASS: IV push -2.0 vs. infusion 0.0 (p = 0.01)

Pain, VS, AE: no difference

Dilute in 100 mL NS

Infuse over 15 min

Sin B, et al. *J Emerg Med* 2017;52(5):601-8.



Use outside ED

Still may need opioids

3-6% risk of dependence?
(Shah, MMWR 2017)

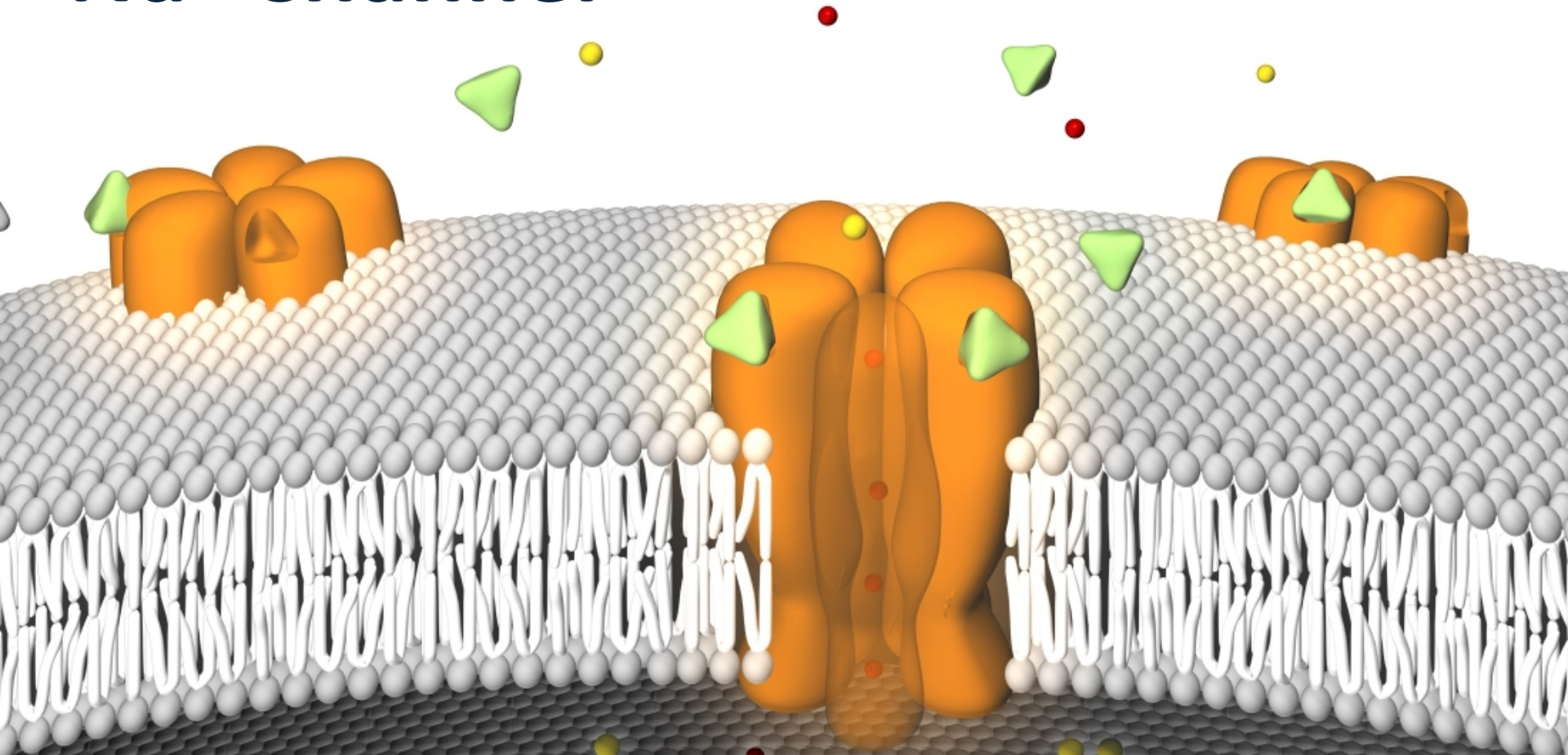
IN ketamine

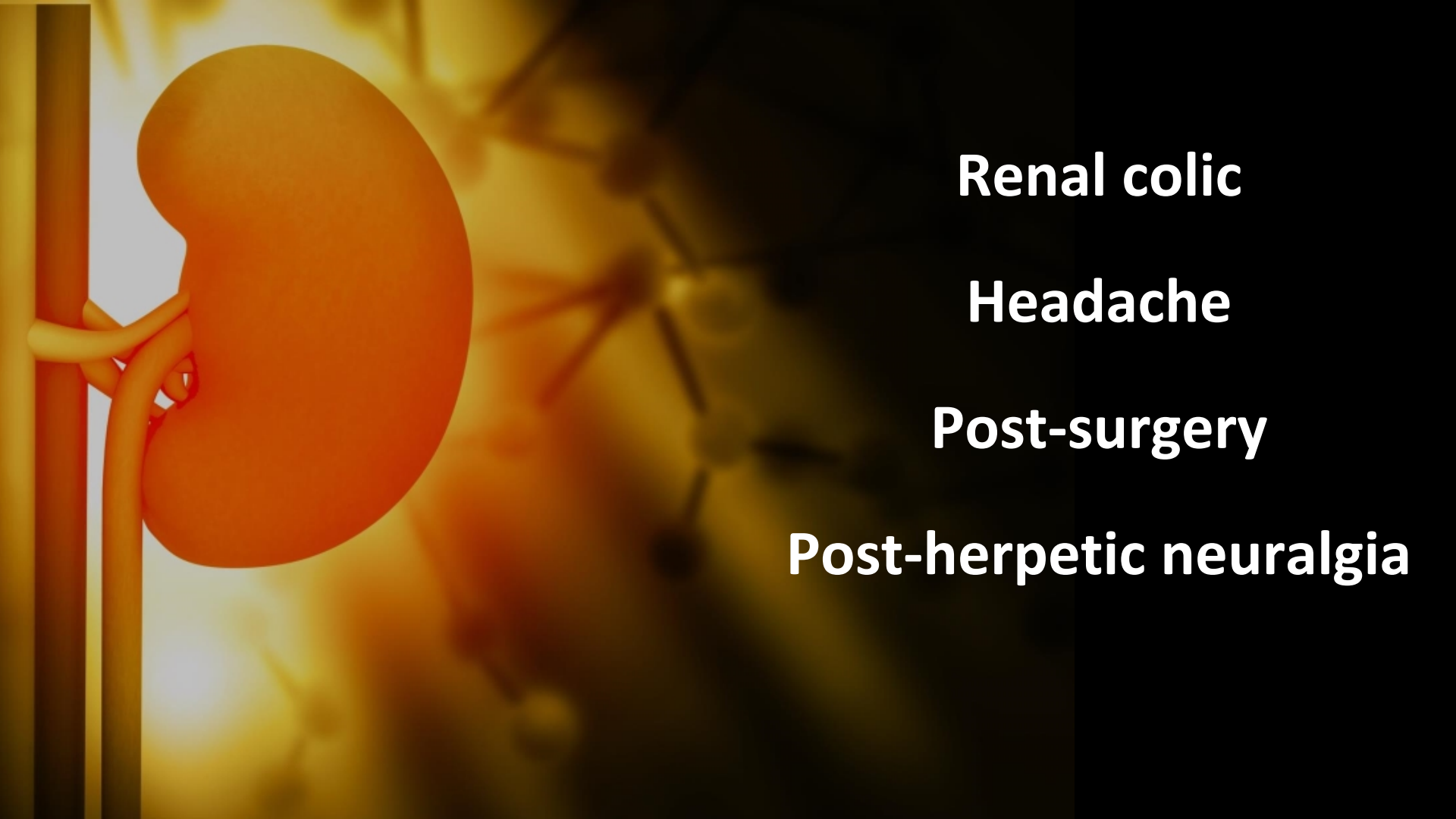
LIDOCAINE

Topical or IV

Golzari SEJ, et al. *Anesth Pain Med* 2014;4(1):e15444.

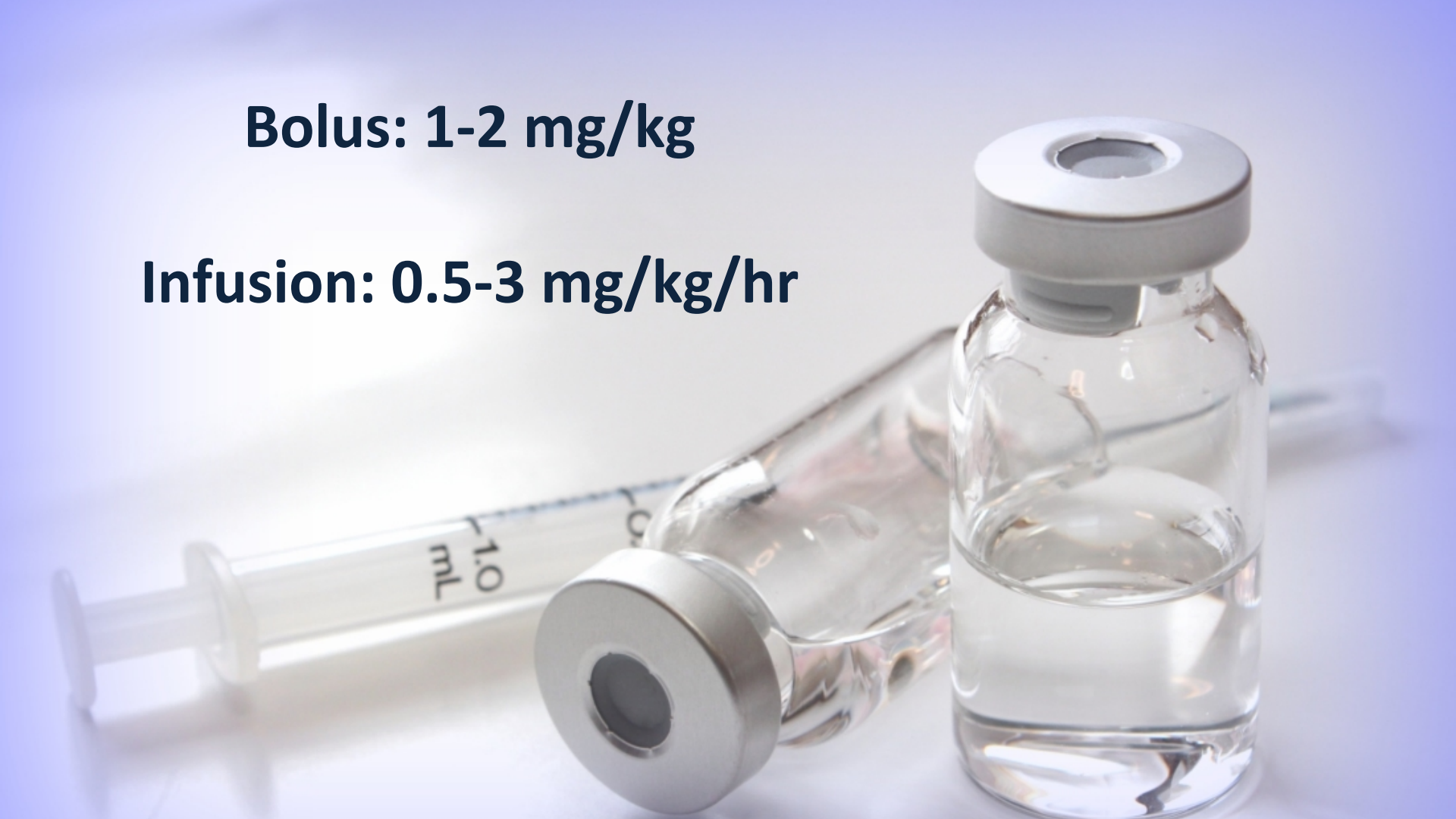
Na^+ Channel




Renal colic
Headache
Post-surgery
Post-herpetic neuralgia

Bolus: 1-2 mg/kg

Infusion: 0.5-3 mg/kg/hr



SAFE + EFFECTIVE

Daykin H. *Br J Pain* 2017;11(1):23-31.

Tanen DA, et al. *J Emerg Med* 2014;47(1):119-24.
Avcu N, et al. *Ann Emerg Med* 2017;69(6):743-51.

Lidocaine > morphine *

* NSAIDS?

Soleimanpour H, et al. *BMC Urol* 2012;12:13

PATCH

4% = $1.67

5% = $9

Castro E, et al. *Pain Manag.* 2017 Aug 14. [Epub]

Sample Acute/Chronic Back Pain Protocol

- **Oral/Topical Regimen**
  - Ibuprofen 400-800 mg
  - Acetaminophen 500-1000 mg
  - Muscle Relaxant: Diazepam 5 mg or Methocarbamol 500-1500 mg
  - Lidocaine patch-5% no more than 2 patches per 12h

- **Parenteral Regimen**
  - IV Ketamine infusion: 0.3 mg/kg bolus over 15 min, 0.15-0.25 mg/kg/hr infusion with titration q30 min by 5 mg
  - IV Lidocaine (preservative-free): 1.5 mg/kg over 10 min (Max 200 mg)
  - IV Ketorolac (only if cannot tolerate po) 10-15 mg

- **If no improvement-admit for observation**
  - IV Ketamine: 0.3 mg/kg bolus over 15 min, 0.15-0.25 mg/kg/hr infusion with titration q30 min (no more than 24h)
  - IV Lidocaine: 2.5 mg/kg/hr (100 mg IV bolus over 20 min, if no side effects, start infusion at 2.5 mg/kg/hr)

Topical analgesics

Trigger Point Inj

Nitrous Oxide

Chai PR, et al. *J Med Toxicol. 2*017 Jun 23. [Epub]

Summary

1. Tramadol is not safe
2. NSAID ceiling for pain
3. Ketamine may reduce opioids
4. Lidocaine IV or topical

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Clinical Meeting & Exhibition

Opioid Alternatives for Treatment of Acute Pain

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