Beating the Pain Game: Non-Opioid Analgesic Strategies Amid an Opioid Crisis

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I have no actual or potential conflicts of interest that pertain to the content of this presentation

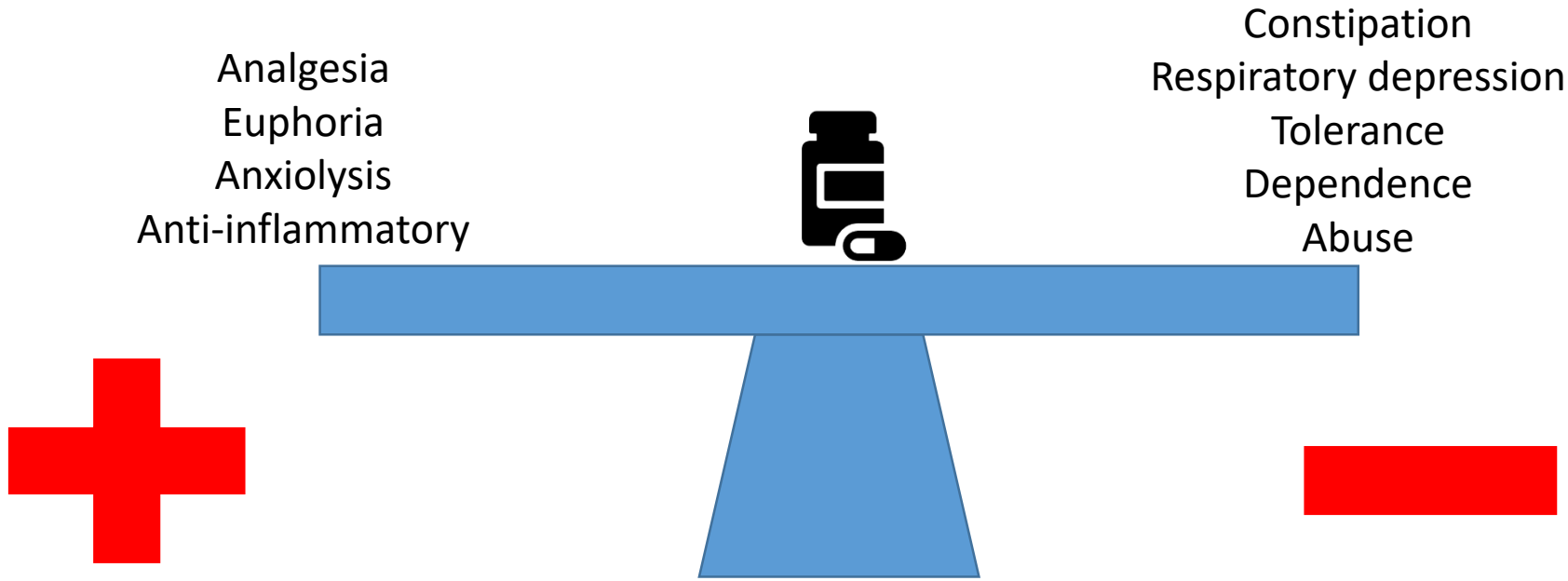
Images through subscription software unless otherwise stated

Learning Objectives for Pharmacists and Technicians

- Describe opioid analgesics and their potential for misuse and abuse leading to the opioid crisis
- Discuss non-opioid analgesic options for treatment of acute pain
- Explain safe practices for the use of opioids

What are opioids?

- Medications that bind to opioid receptors
  - Mu, delta, kappa



Stein C. *Annu. Rev. Med.* 2016. 67:5.1–5.19

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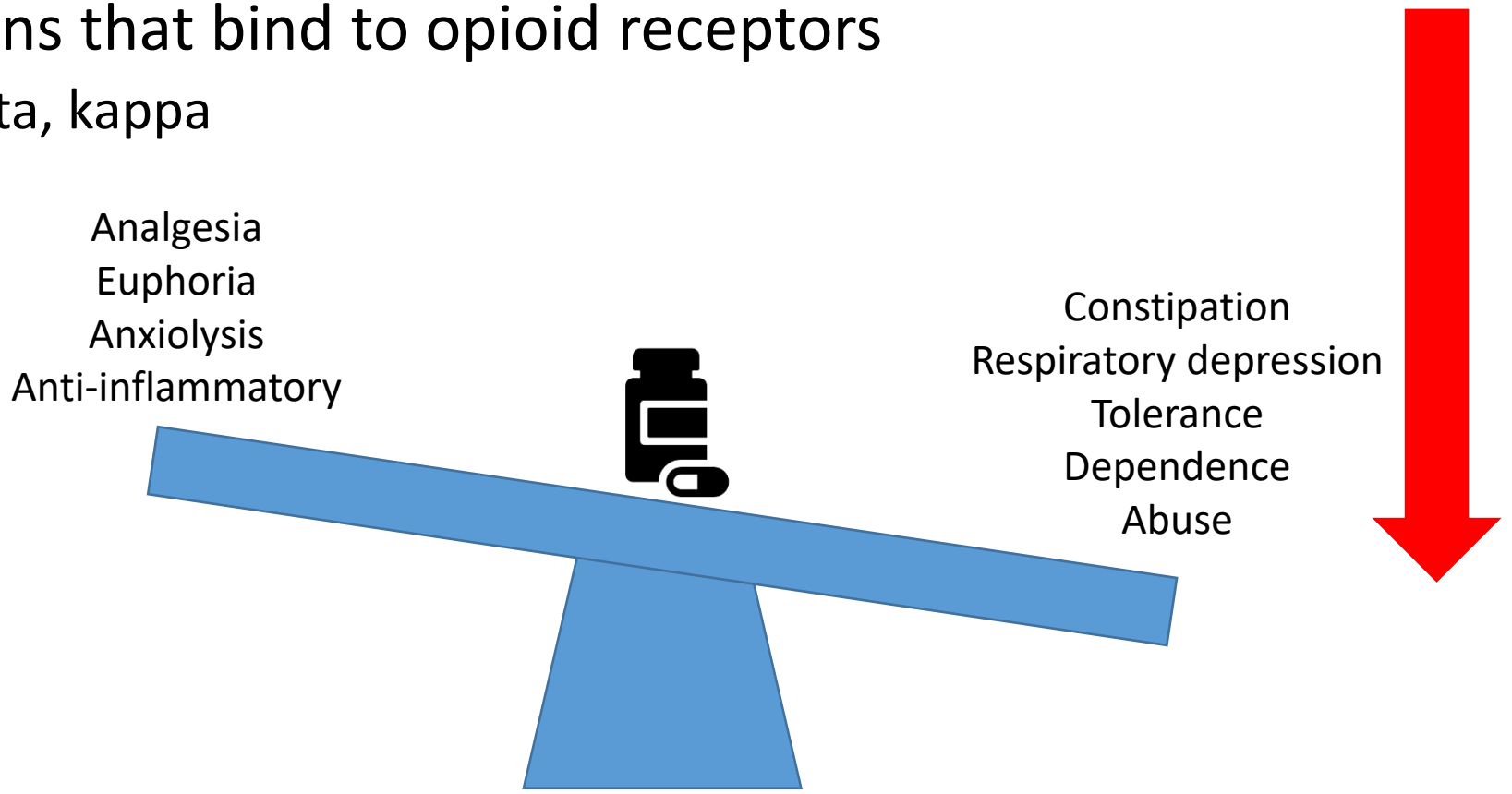


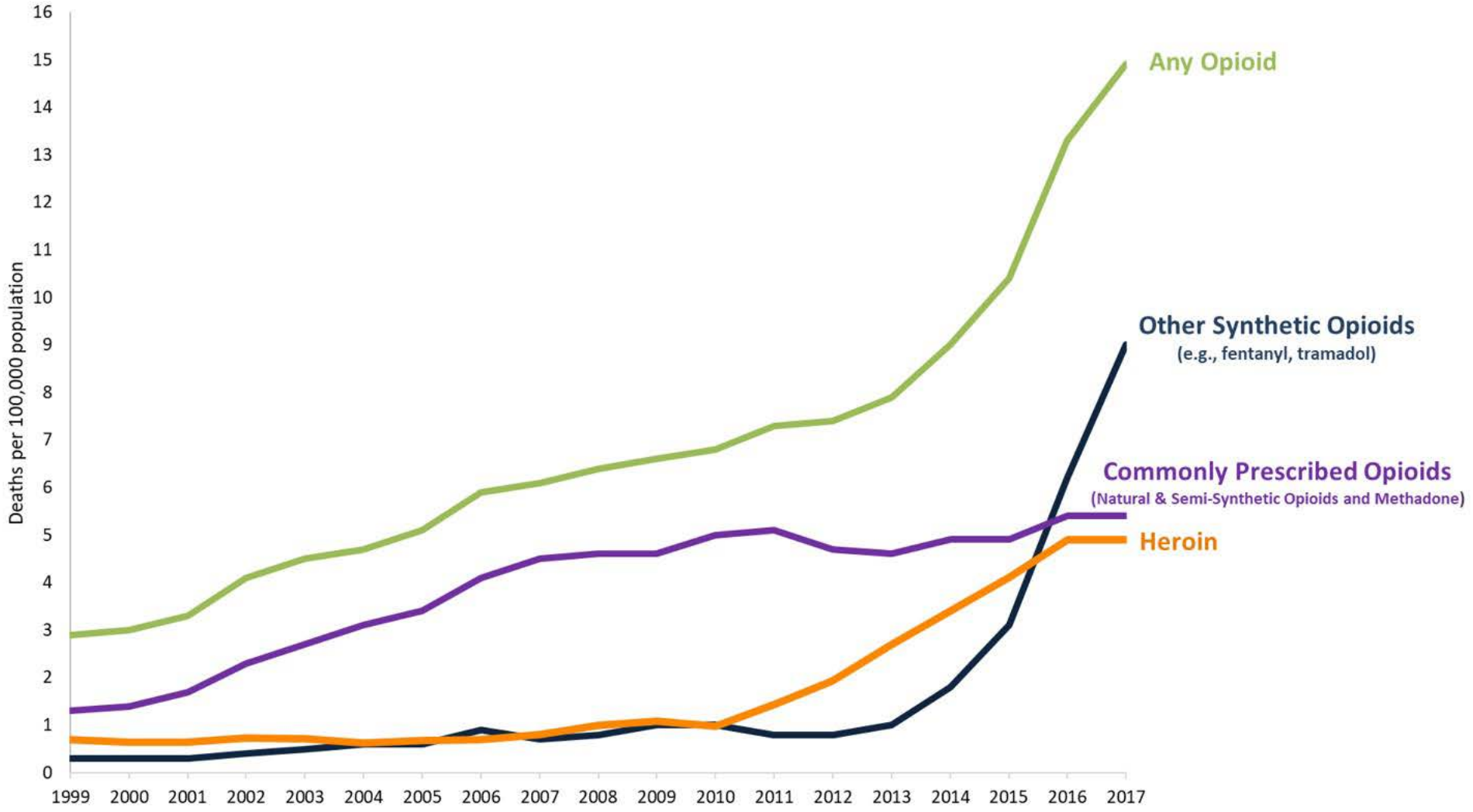
Stein C. *Annu. Rev. Med.* 2016. 67:5.1–5.19

Who is impacted?

- How many of you have been personally impacted by the opioid epidemic?

https://worktango.com/2017/09/24/everyones-sales-can-live-everyone-employee-engagement/

Overdose Death Rates Involving Opioids, by Type, United States, 2000-2017



SOURCE: CDC/NCHS, National Vital Statistics System, Mortality. CDC WONDER, Atlanta, GA: US Department of Health and Human Services, CDC; 2018. https://wonder.cdc.gov/.

www.cdc.gov
Your Source for Credible Health Information

THE OPIOID EPIDEMIC BY THE NUMBERS

130+
People died every day from opioid-related drug overdoses[3]
(estimated)

11.4 m
People misused prescription opioids[1]

47,600
People died from overdosing on opioids[2]

2.1 million
People had an opioid use disorder[1]

886,000
People used heroin[1]

81,000
People used heroin for the first time[1]

2 million
People misused prescription opioids for the first time[1]

15,482
Deaths attributed to overdosing on heroin[2]

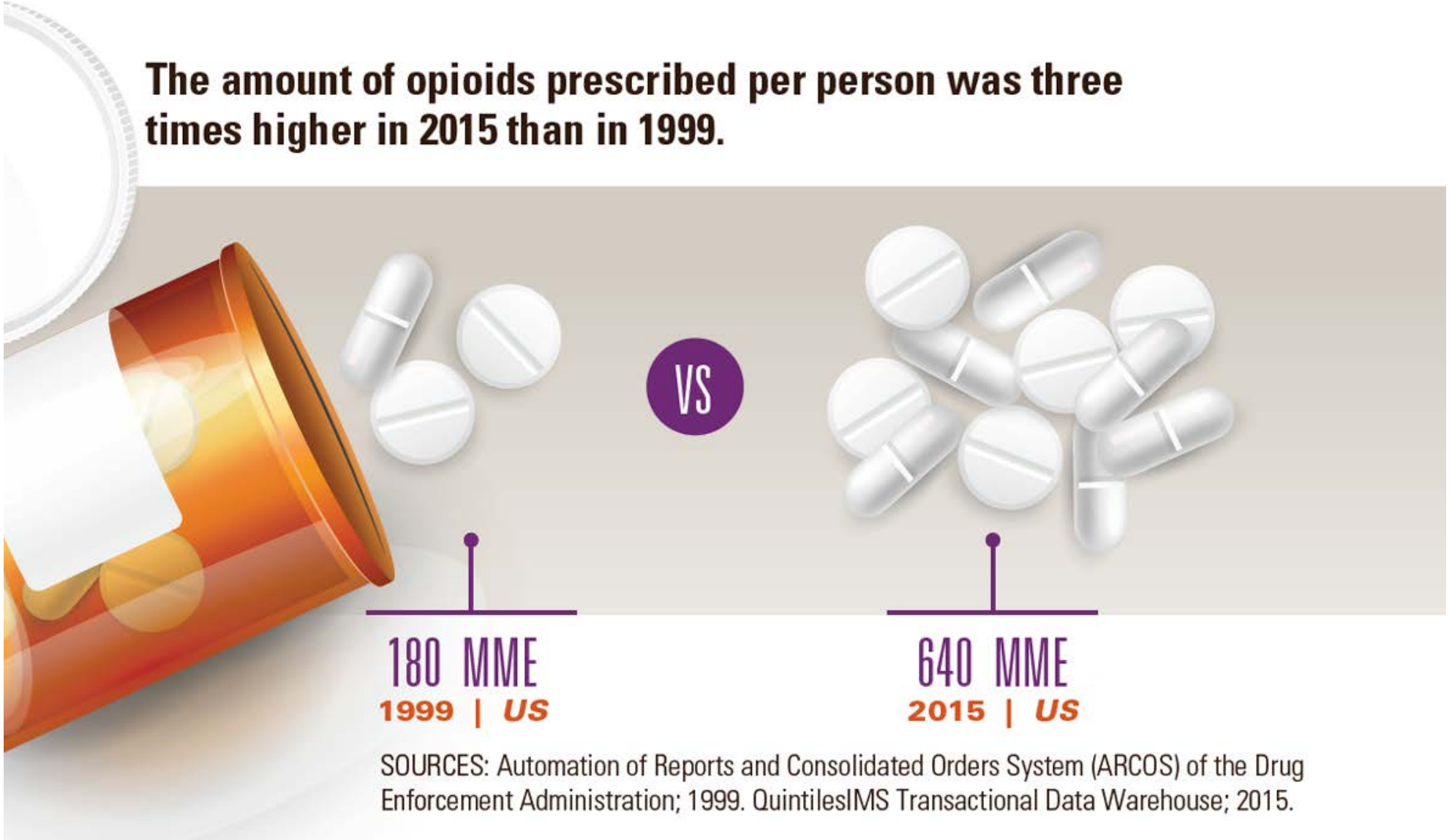
28,466
Deaths attributed to overdosing on synthetic opioids other than methadone[2]

SOURCES

1. 2017 National Survey on Drug Use and Health, Mortality in the United States, 2016
2. NCHS Data Brief No. 293, December 2017
3. NCHS, National Vital Statistics System. Estimates for 2017 and 2018 are based on provisional data.

HHS.GOV/OPIOIDS

How did we get here?



MME= morphine milligram equivalence

https://www.cdc.gov/vitalsigns/opioids/infographic.html#graphic-a

From Prescription Opioids to Heroin?

80% of people who use heroin first misused prescription opioids

https://www.drugabuse.gov/publications/drugfacts/prescription-opioids
https://www.bbc.com/news/uk-wales-47350817

How can we fix it?

Too many Rxs

- Use opioids **only** when benefits > risks
  - Maximize non-opioid alternatives and non-pharmacologic interventions

https://www.cdc.gov/vitalsigns/opioids/infographic.html#graphic-a
https://blogs.cdc.gov/publichealthmatters/2018/04/rxawareness/

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Too many days

- Use the shortest course possible

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How can we fix it?

Too many Rxs

- Use opioids **only** when benefits > risks
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Too many days

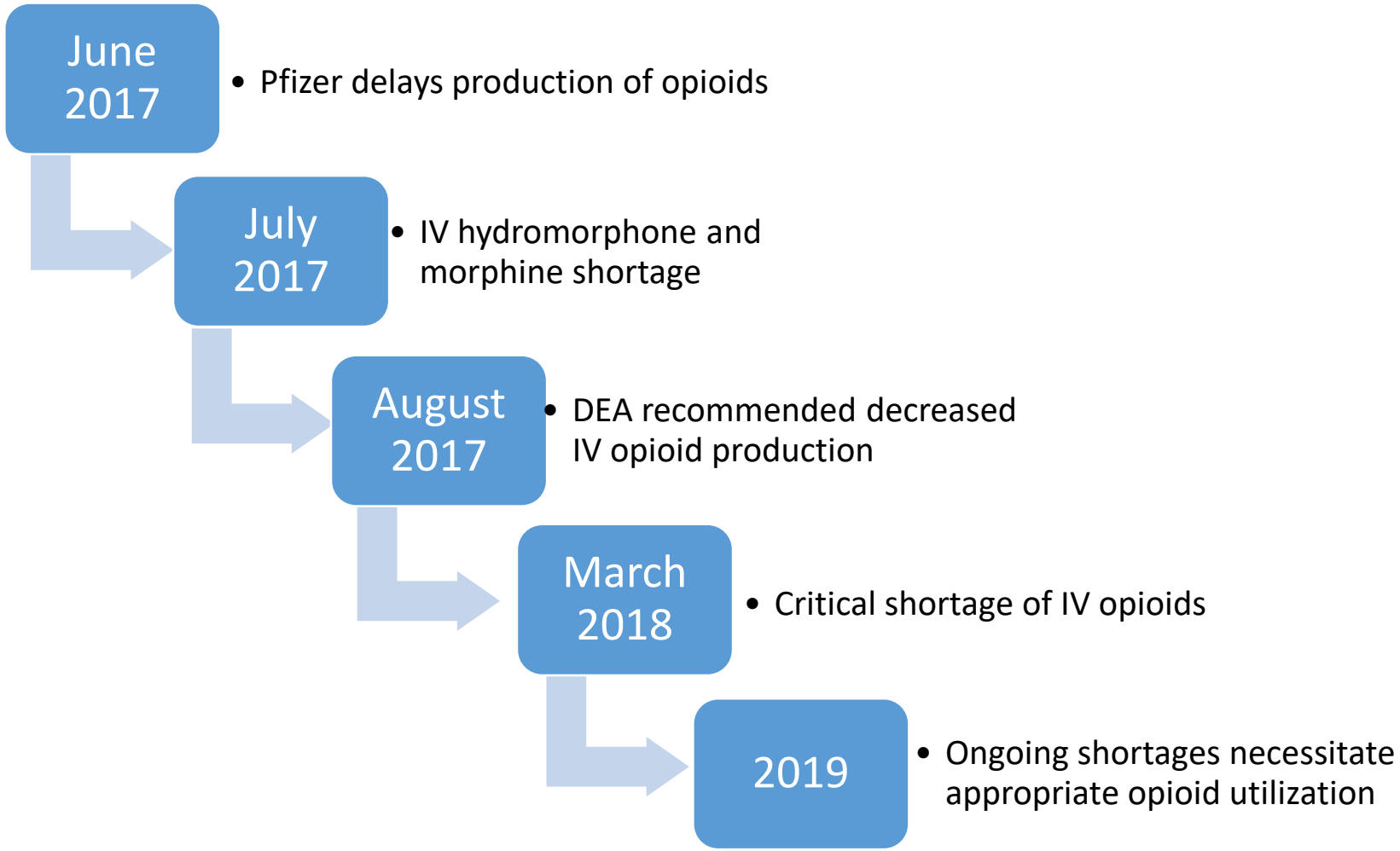
- Use the shortest course possible

Too high a dose

- Use the lowest dose possible

https://www.cdc.gov/vitalsigns/opioids/infographic.html#graphic-a
https://blogs.cdc.gov/publichealthmatters/2018/04/rxawareness/

Opioid Critical Shortages



https://www.ashp.org/Drug-Shortages/Shortage-Resources/Injectable-Opioid-Shortages-FAQ

Case 1

- SF is a 34-year-old male with past medical history (PMH) of opioid abuse in an active treatment program who presents to the emergency department (ED) with severe flank pain.
- Vitals: 101.3°F, HR 93 bpm, 131/74 mm Hg, RR 14 bpm
- Urinalysis: +nitrites, + leukocytes, WBCs >180, no RBCs, squamous epis 2
- Urine culture: pending

- What treatment options do we have available for SF?

Evaluate Pain

Types of Pain

- Nociceptive pain
  - Somatic
  - Visceral
  - Musculoskeletal pain
- Neuropathic pain

Pain Characteristics

- Episodic pain
- Malignant pain
- Acute vs. chronic pain
- Pain at rest vs. pain on movement

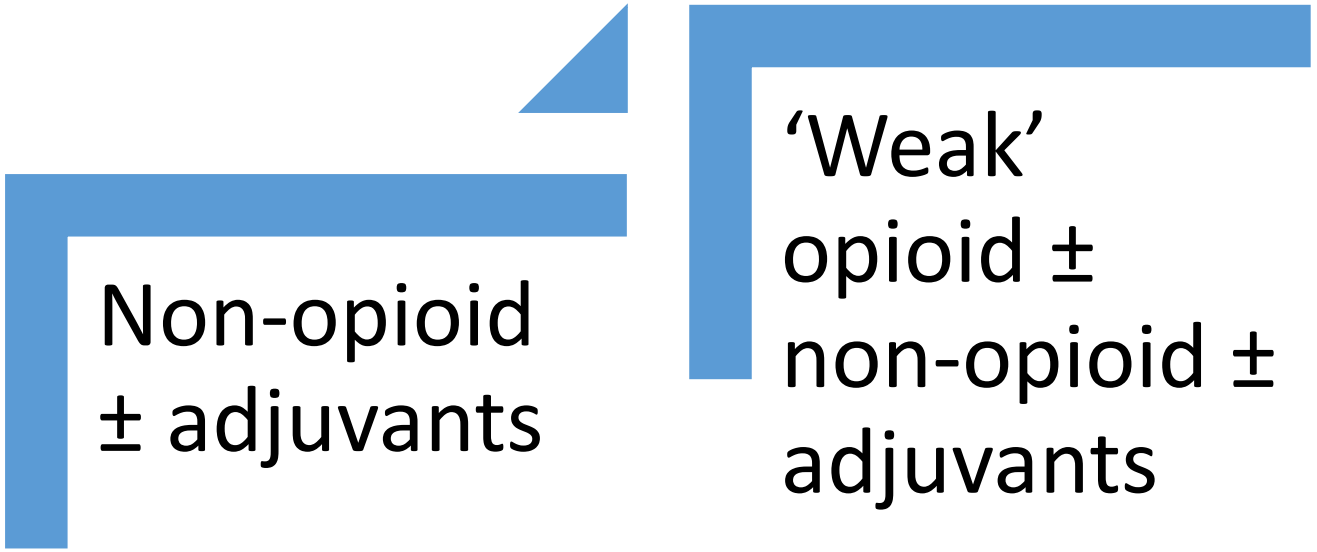
https://www.who.int/medicines/areas/quality_safety/Scoping_WHOGuide_non-malignant_pain_adults.pdf

WHO Pain Ladder

Non-opioid ± adjuvants

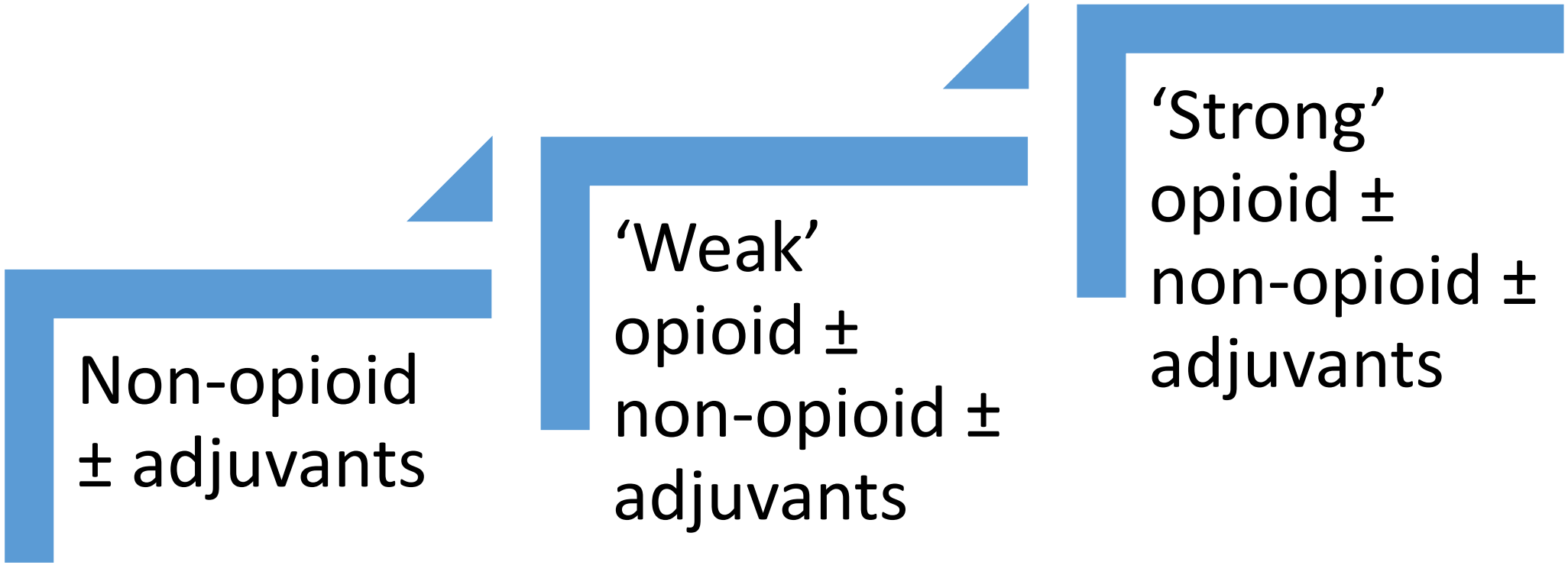
https://www.who.int/medicines/areas/quality_safety/Scoping_WHOGuide_non-malignant_pain_adults.pdf

WHO Pain Ladder



https://www.who.int/medicines/areas/quality_safety/Scoping_WHOGuide_non-malignant_pain_adults.pdf

WHO Pain Ladder



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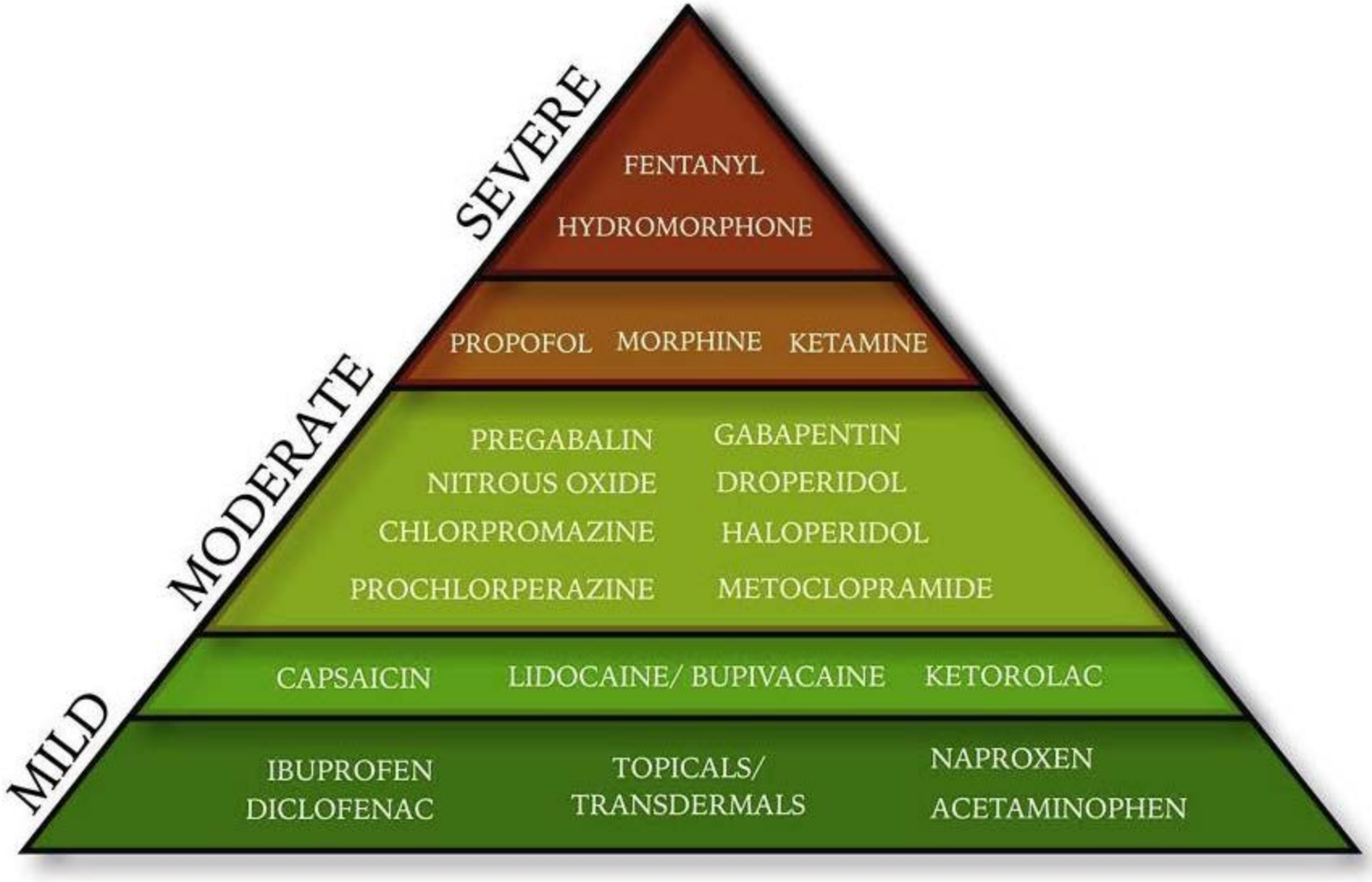

Turk J Emerg Med. 2018 Dec 10;19(1):1-11. doi: 10.1016/j.tjem.2018.11.003 . https://www.ncbi.nlm.nih.gov/pubmed/30793058

The Journal of Emergency Medicine, Vol. ■, No. ■, pp. 1–6, 2018
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0736-4679/$ - see front matter

ELSEVIER

AAEM
Position Paper

THE TREATMENT OF ACUTE PAIN IN THE EMERGENCY DEPARTMENT: A WHITE PAPER POSITION STATEMENT PREPARED FOR THE AMERICAN ACADEMY OF EMERGENCY MEDICINE

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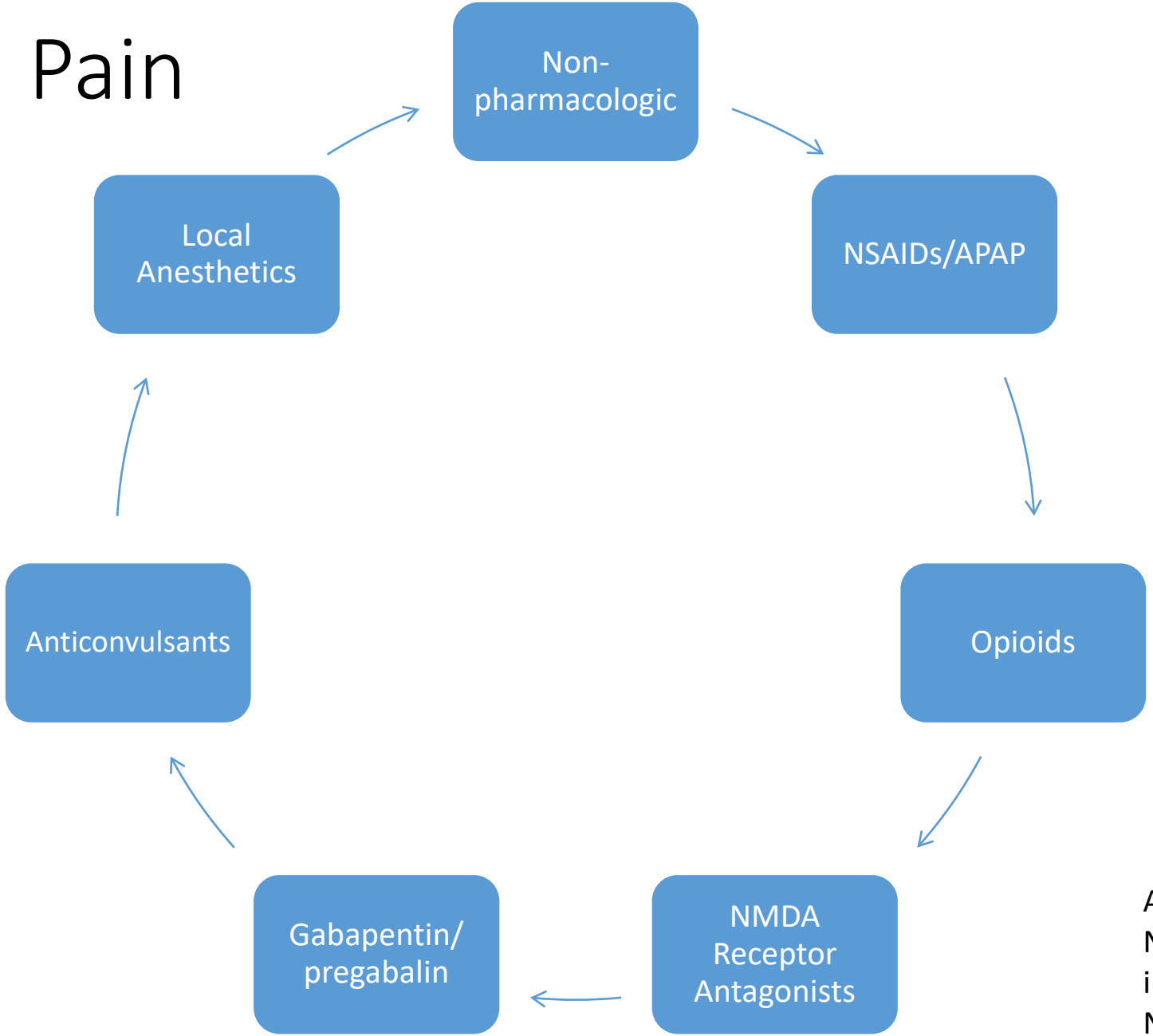
White Paper Pearls

Recommended Opioid Alternatives

- ✓Non-steroidal anti-inflammatory drugs (NSAIDs)
- ✓Acetaminophen (APAP)
- ✓Local/regional blocks
- ✓Sub-dissociative ketamine
- ? Lidocaine
- ? Nitrous oxide (pediatrics)

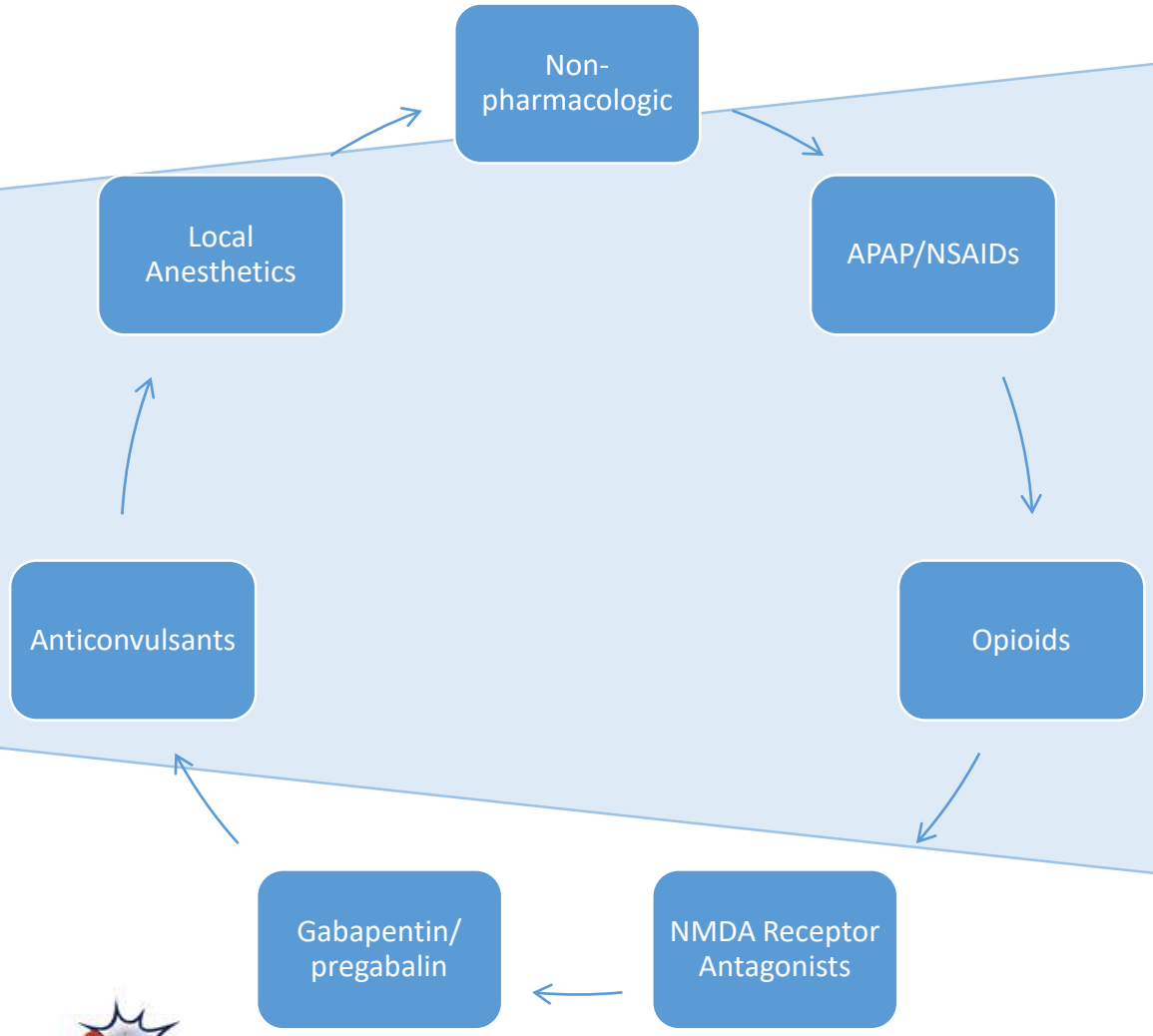
Multimodal Pain Control



APAP = acetaminophen
NSAIDs = non-steroidal anti-inflammatory drugs
NMDA = N-methyl-D-aspartate

Anesthesiology Clin 35 (2017) e115–e143 doi: 10.1016/j.anclin.2017.01.018.

Multimodal Pain Control



- Use of multiple, simultaneous interventions:
  - Reduce stress/physiologic derangement
  - Reduce overall doses of single agents
  - Minimize adverse effects
  - Limit/eliminate opioids

Anesthesiology Clin 35 (2017) e115–e143 doi: 10.1016/j.anclin.2017.01.018.

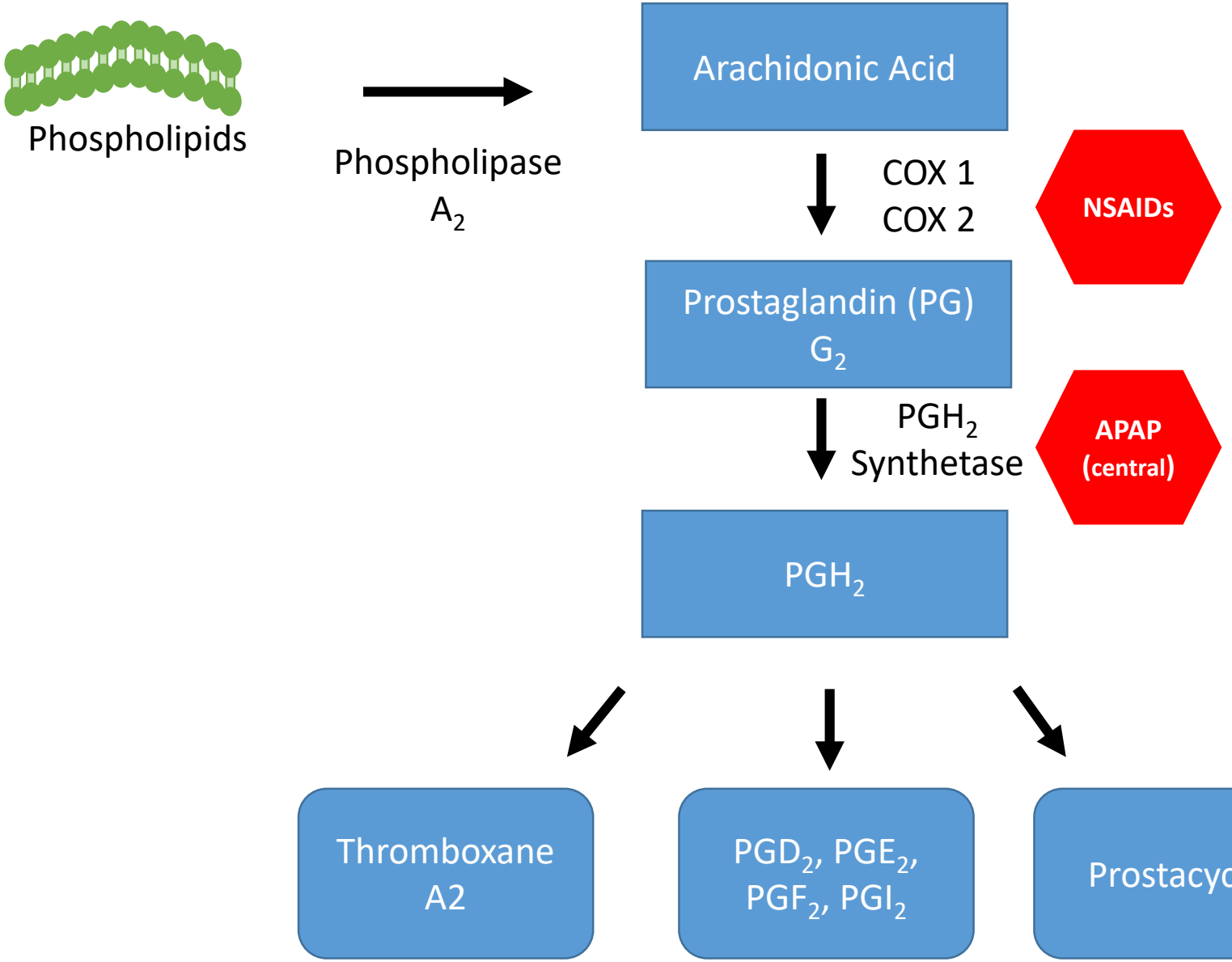
Non-Pharmacologic Interventions

Non-Pharmacologic Treatment of Pain

- Physical Comfort Measures:
  - Heating pads/Warm compresses
  - Ice Packs
  - Splint/support/brace for injury
  - Warm blanket or Pillow
  - Mouth swab or Ice chips/water
  - Repositioning (position of comfort, elevate for swelling)
  - Walking the halls
  - Warm bath (inpatient)
  - Stretching/Range of Motion exercises
- Activities that may Reduce Discomfort:
  - Books/Magazines
  - Drawing materials
  - Pet Therapy
  - Visitors (family/friends/volunteers)
  - Puzzles
  - Knitting
  - Journaling
  - Television
  - Music therapy (own music, harp or piano)
  - Spiritual options (visit from Chaplain, bible, attend mass)
  - Sleep or Relaxation
  - Mindfulness practice
  - Ear plugs, Eye shields, Headphones
  - Stress ball
- Recreational therapy consult available

NSAIDs & APAP

Mechanism of Action



Am J Ther. 2005 Jan-Feb;12(1):46-55.

Dosing – NSAIDs & APAP

Agent	Dose	Duration	Adverse Effects
Diclofenac	50 mg po (max 200 mg/day)	6-8 hours	• GI irritation • Bleeding • Renal dysfunction • Bronchospasm • Delayed wound healing
Ibuprofen	400-800 mg po (max 1200 mg/day)	8 hours	
Naproxen	250-500 po (max 1000 mg/day)	8 – 12 hours	
Ketorolac	10-30 mg IV/IM (max 60 mg/day)	6 hours	
Acetaminophen	325-1000 mg (max 4000 mg)	4 – 6 hours	• Nausea, vomiting • Liver toxicity

Turk J Emerg Med. 2018 Dec 10;19(1):1-11.

Where's the ceiling?

Study	Population	Intervention	Outcomes	Limitations

Ann Emerg Med. 2017 Aug;70(2):177-184.	RCT of 240 ED patients 18-65 years with moderate to severe acute pain (VAS ≥5)	Ketorolac 10 mg IV (n=80)
		Ketorolac 15 mg IV (n=80)
		Ketorolac 30 mg IV (n=80)
			• At 30 minutes:
			  • Ketorolac 10 mg group: mean VAS from 7.7 to 5.2 (difference -2.5)
			  • Ketorolac 15 mg group: VAS from 7.5 to 5.1 (difference -2.4)
			  • Ketorolac 30 mg group: 7.8 to 4.8 (difference -3.0)
				• Single center study, convenience sample
				• Many exclusions
				• Entire duration 120 minutes

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Ann Emerg Med. 2019 Aug 2.. [Epub ahead of print]	RCT of 225 ED patients 18+ with acute pain warranting ibuprofen	Ibuprofen 400 mg po (n=75)
		Ibuprofen 600 mg po (n=75)
		Ibuprofen 800 mg po (n=75)
			• At 60 minutes:
			  • Ibuprofen 400 mg group: mean VAS from 6.5 to 4.36 (difference 2.12)
			  • Ibuprofen 600 mg group: VAS from 6.35 to 4.50 (difference 1.85)
			  • Ibuprofen 800 mg group: VAS from 6.46 to 4.50 (difference 1.95)
				• Single center study, convenience sample
				• Many exclusions
				• Entire duration 120 minutes

From: **Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial**

JAMA. 2017;318(17):1661-1667. doi:10.1001/jama.2017.16190

Table 2. Numerical Rating Scale (NRS) Pain Scores and Decline in Pain Scores by Treatment Group

	NRS Pain Score, Mean (95% CI)[a]				
	Ibuprofen and Acetaminophen[b]	Oxycodone and Acetaminophen[c]	Hydrocodone and Acetaminophen[d]	Codeine and Acetaminophen[e]	*P* Value[f]
No. of patients[g]	101	104	103	103	
Primary end point: decline in score to 2 h	4.3 (3.6 to 4.9)	4.4 (3.7 to 5.0)	3.5 (2.9 to 4.2)	3.9 (3.2 to 4.5)	.053
Baseline score	8.9 (8.5 to 9.2)	8.7 (8.3 to 9.0)	8.6 (8.3 to 9.0)	8.6 (8.2 to 8.9)	.47
Score at 1 h	5.9 (5.3 to 6.6)	5.5 (4.9 to 6.2)	6.2 (5.6 to 6.9)	5.9 (5.2 to 6.5)	.25
Score at 2 h	4.6 (3.9 to 5.3)	4.3 (3.6 to 5.0)	5.1 (4.5 to 5.8)	4.7 (4.0 to 5.4)	.13
Decline in score to 1 h	2.9 (2.4 to 3.5)	3.1 (2.6 to 3.7)	2.4 (1.8 to 3.0)	2.7 (2.1 to 3.3)	.13

[a] Pain intensity was assessed using an 11-point NRS in which a score of 0 indicates no pain and a score of 10 indicates the worst possible pain.

[b] Patients received 400 mg of ibuprofen and 1000 mg of acetaminophen.

[c] Patients received 5 mg of oxycodone and 325 mg of acetaminophen.

[d] Patients received 5 mg of hydrocodone and 300 mg of acetaminophen.

[e] Patients received 30 mg of codeine and 300 mg of acetaminophen.

[f] Calculated using analysis of variance.

[g] One patient in each group had imputed NRS data.

Date of download: 8/13/2019

2019 ICHP Annual Meeting

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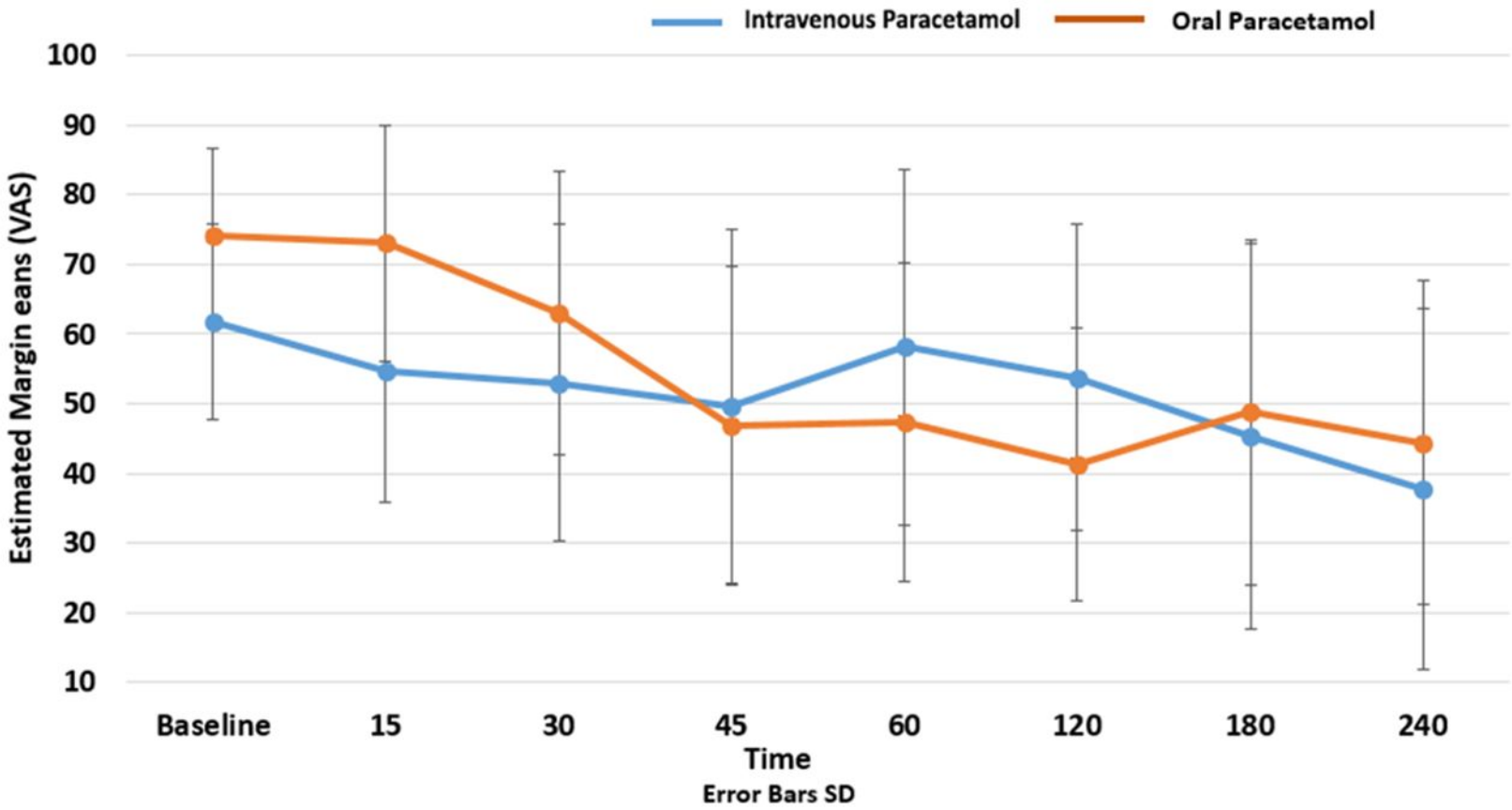
IV Acetaminophen

- Should not replace oral or rectal routes
- Variable effect in clinical trials
  - 3 of 14 RCTs including 1,472 patients found significant reduction in pain scores



Acad Emerg Med. 2016 May;23(5):543-53.
Emerg Med J 2018;35:179-184

For Your Consideration

- Schedule to get ahead of pain
- Be mindful of analgesic ceiling to mitigate adverse effects
- Try before opioids
  - If opioids deemed necessary, use as adjunct
- Reserve IV APAP for those who truly cannot take oral or rectal

Eur J Pediatr. 2017 Jul;176(7):979-982.

Case 2

MS is a 36-year-old male with no past medical history, medications or allergies who presents to the ED 48 hours after a low-speed motor vehicle crash with no airbag deployment. He is hemodynamically stable and complaining of neck and back pain (VAS =5).

- Which analgesic option(s) should we offer him?

Which of the following is NOT an opioid-sparing option for MS?

A. Acetaminophen 650 mg PO
B. Acetaminophen 1000 mg IV
C. Ketorolac 10 mg IVP
D. Fentanyl 25 mcg IVP

Lidocaine

Mechanism of Action

Image removed due to copyright. Refer to citation:

https://accessmedicine.mhmedical.com/ViewLarge.aspx?figid=69108478&gbosContainerID=0&gbosid=0&groupID=0

Lidocaine

Dose	• 1-1.5 mg/kg slow IVP • May follow with 0.5–3 mg/kg/hour continuous IV
Pharmacokinetics	• Active metabolite • Onset 45-90 seconds • Duration 1.5-2 hours
Adverse effects	• Dizziness, tinnitus, QRS prolongation, sinus slowing, hypotension, dysrhythmias • Local anesthetic systemic toxicity (LAST)

Pharmacotherapy. 2018 Dec;38(12):1250-1259.
Sci Rep. 2016; 6: 26253.

Where should we use it?

Indication	Comparator (N)	Efficacy	Comments
Abdominal pain[1]	• Hydromorphone (n=154)	• Mean VAS ↓3.8 lidocaine vs. 5.0 (difference 1.2; 95% CI 0.3 to 2.2)	• 120 mg lidocaine • Acute vs. chronic

1. Ann Emerg Med. 2019 Aug;74(2):233-240.

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Back pain[2]	• Ketorolac (n=41)	• VAS ↓ 7.5 lidocaine vs. 6.0 ketorolac	• Lidocaine 100 mg • Limited data

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Renal colic[4-7]	• Fentanyl (n=90) • Ketorolac (n=150) • Morphine (n=240) • Morphine (n=110)	• Lidocaine + ketorolac > lidocaine alone • Lidocaine > morphine in one RCT • Similar reduction in pain compared to fentanyl but higher failure rates	• Opioid sparing • *Most data

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3. Ann Emerg Med 1990;19:1079–82
4. BMC Urol 2012;12(13):1–5.
5. Am J Emerg Med. 2019 Jan 30. pii: S0735-6757(19)30070-1.
6. Am J Emerg Med. 2016 Mar;34(3):443-8.
7. Emerg (Tehran). 2017;5(1):e82.

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Adjunct to Opioids in ICU[9]	• Morphine (n=21)	• Morphine 6 hours: 8.3 vs 10 mg, P <0.01 • 12 hours: 41.8 vs 18.3 mg, P <0.01 • 24 hours: 93.5 vs 30.5 mg, P = 0.04	• Opioid sparing • One study

1. Ann Emerg Med. 2019 Aug;74(2):233-240.
2. Emerg Med J 2014;47(1):119–24
3. Ann Emerg Med 1990;19:1079–82
4. BMC Urol 2012;12(13):1–5.
5. Am J Emerg Med. 2019 Jan 30. pii: S0735-6757(19)30070-1.
6. Am J Emerg Med. 2016 Mar;34(3):443-8.
7. Emerg (Tehran). 2017;5(1):e82.
8. Emerg Med J 2015;32:516–9.
9. J Clin Pharmacol 2017;57(7):830–6

Where should we use it?

Indication	Comparator (N)	Efficacy	Comments
Abdominal pain[1]	• Hydromorphone (n=154)	• Mean VAS ↓3.8 lidocaine vs. 5.0 (difference 1.2; 95% CI 0.3 to 2.2)	• 120 mg lidocaine • Acute vs. chronic
Back pain[2]	• Ketorolac (n=41)	• VAS ↓ 7.5 lidocaine vs. 6.0 ketorolac	• Lidocaine 100 mg • Limited data
Migraine[3]	• Dihydroergotamine and chlorpromazine (n=76)	• 50% reduction in pain, similar to comparators	• 1990 • Limited data
Renal colic[4-7]	• Fentanyl (n=90) • Ketorolac (n=150) • Morphine (n=240) • Morphine (n=110)	• Lidocaine + ketorolac > lidocaine alone • Lidocaine > morphine in one RCT • Similar reduction in pain compared to fentanyl but higher failure rates	• Opioid sparing • *Most data
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Post-herpetic neuralgia[10]	• Placebo (n=24)	• Both groups ↓ VAS • Pressure-provided pain/allodynia only ↓ in lidocaine	• cIV lidocaine

1. Ann Emerg Med. 2019 Aug;74(2):233-240.
2. Emerg Med J 2014;47(1):119–24
3. Ann Emerg Med 1990;19:1079–82
4. BMC Urol 2012;12(13):1–5.
5. Am J Emerg Med. 2019 Jan 30. pii: S0735-6757(19)30070-1.
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7. Emerg (Tehran). 2017;5(1):e82.
8. Emerg Med J 2015;32:516–9.
9. J Clin Pharmacol 2017;57(7):830–6
10. J Pain Symptom Manage. 1999 Jun;17(6):429-33.

Case 3

- NR is a 56 year old male with PMH of hypertension, hyperlipidemia, and diabetes. He presents to the ED with severe flank pain (VAS=10). CT notes multiple kidney stones.
- Home medications: amlodipine 10 mg po daily, atorvastatin 10 mg daily, metformin 500 mg po BID
- Vitals: 98.9°F, HR 76, 137/84, RR 12

- Which analgesic option(s) should we offer him?

Ketamine

Mechanism of Action

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https://accessmedicine.mhmedical.com/ViewLarge.aspx?figid=69108478&gbosContainerID=0&gbosid=0&groupID=0

Ketamine for Sub-dissociative Pain

- Dosing:

Route	Dose	Onset	Duration
IV	0.1–0.3 mg/kg	30 seconds	10–15 minutes
IM	0.1–0.5 mg/kg	2-5 minutes	30 – 75 minutes
IN	0.2–1 mg/kg	5-10 minutes	45 – 120 minutes
SubQ	0.1–0.6 mg/kg	10 – 30 minutes	45 – 120 minutes
Oral	0.3–1.25 mg/kg	5 – 20 minutes	2 – 4 hours

- Adverse effects: “feeling of unreality”, headache, dizziness, nausea/vomiting, hallucinations

Reg Anesth Pain Med. 2018 Jul;43(5):456-466

REGIONAL ANESTHESIA AND ACUTE PAIN

SPECIAL ARTICLE

OPEN

Consensus Guidelines on the Use of Intravenous Ketamine Infusions for Acute Pain Management From the American Society of Regional Anesthesia and Pain Medicine, the American Academy of Pain Medicine, and the American Society of Anesthesiologists

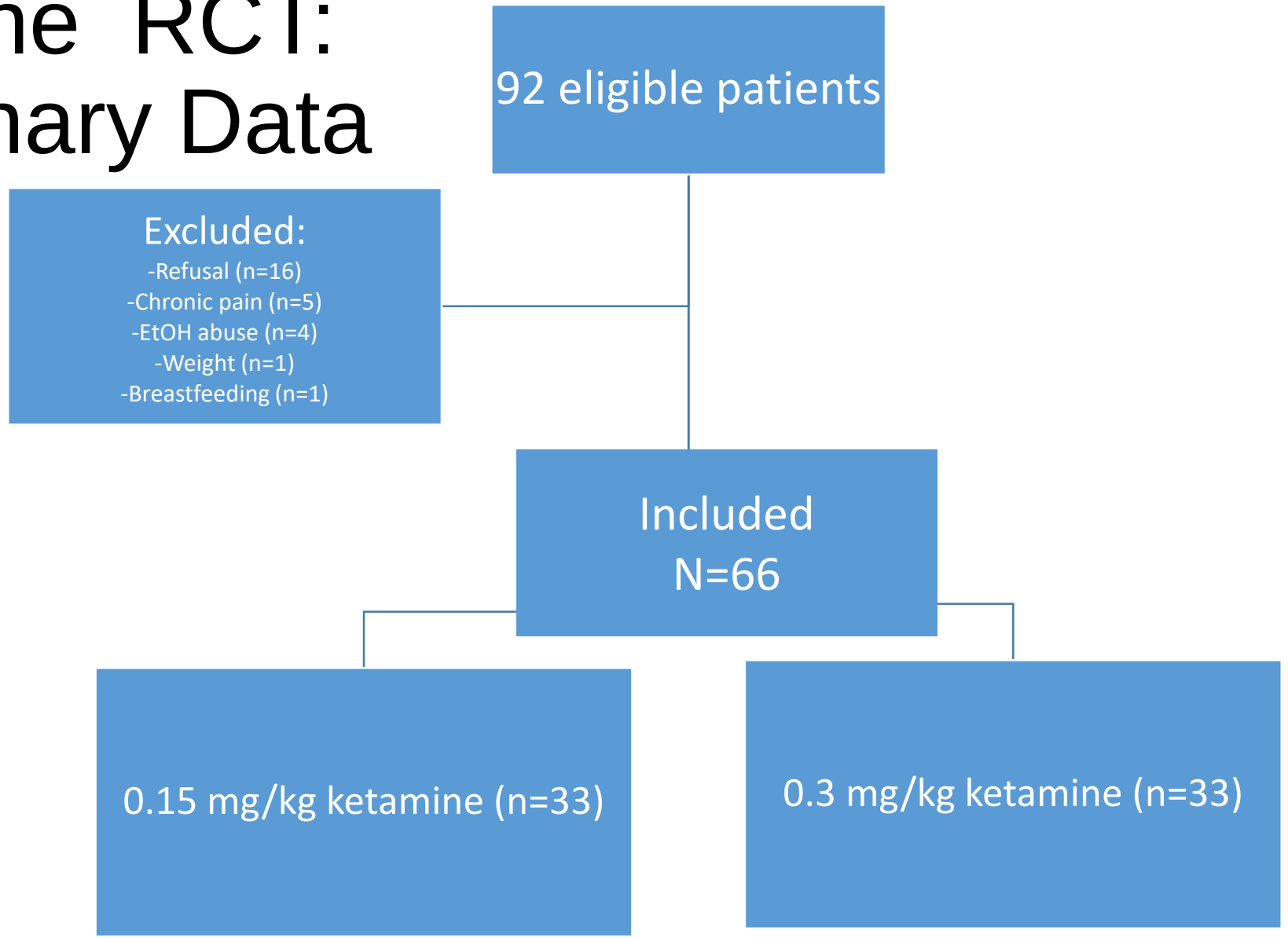
Eric S. Schwenk, MD, Eugene R. Viscusi, MD,* Asokumar Buvanendran, MD,† Robert W. Hurley, MD, PhD,‡ Ajay D. Wasan, MD, MSc,§ Samer Narouze, MD, PhD,|| Anuj Bhatia, MD, MBBS,** Fred N. Davis, MD,†† William M. Hooten, MD,‡‡ and Steven P. Cohen, MD§§*

"Most studies evaluating ketamine in an acute pain setting show… ketamine reduces opioid consumption, pain levels, or both"

Measuring up to Morphine

Study	Population	Intervention	Outcomes	Limitations
Ann Emerg Med. 2015 Sep;66(3):222-229.e1	RCT of 90 adults 18 – 55 years with abdominal, flank, or musculoskeletal pain	ketamine 0.3 mg/kg vs. morphine at 0.1 mg/kg Both over 15 minutes	• No difference in reduction in pain scores at 30 minutes • No difference in rescue analgesia • No serious adverse outcomes, but increased minor AEs in ketamine group	• Single center • Limited size • Convenience sample • Exclusion criteria • Morphine dose
Am J Emerg Med. 2018 May 16. [Epub ahead of print]	RCT of 60 adults ≥65 years acute abdominal, flank, musculoskeletal, or malignant pain	ketamine 0.3 mg/kg vs. morphine at 0.1 mg/kg Both over 15 minutes	• No difference in pain scores at 30, 60, 90 or 120 minutes • Higher AEs at 15 min post-administration (86.7% vs. 46.7%) and at 30 min (73.3% vs 36.7%) • Mostly dizziness and fatigue	• Single center • Poor enrollment • Exclusion criteria • Morphine dose

Ketamine RCT: Preliminary Data



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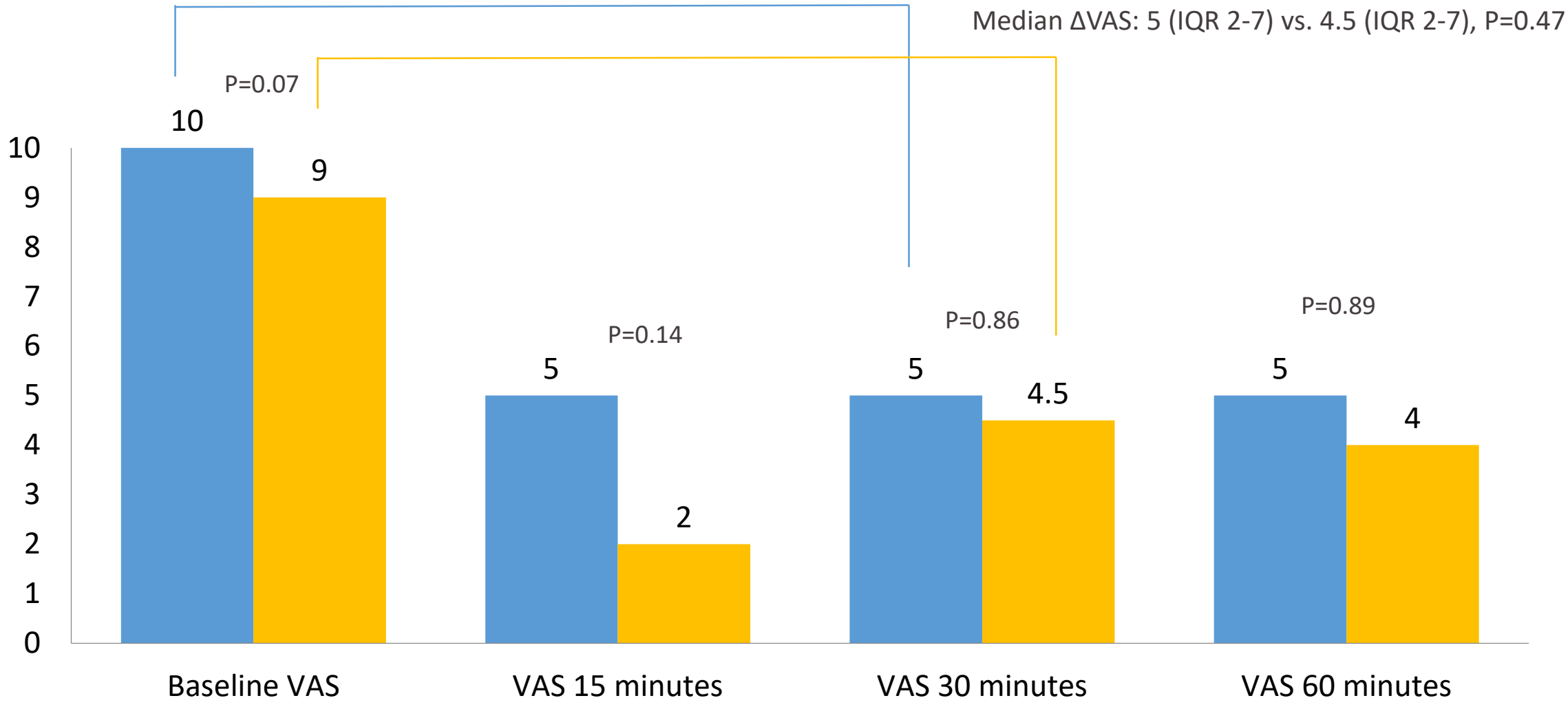
Results: Efficacy



VAS = visual analog scale

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Results: Safety

Characteristic	Ketamine 0.15 mg/kg (n=33)	Ketamine 0.3 mg/kg (n=33)	P value
RASS 30 minutes, median (IRQ)	0 (0)	0 (0)	0.92
SERSDA 30 minutes, n (%)			
Fatigue	17 (51.5)	11 (33.3)	0.26
Dizziness	19 (57.5)	22 (66.7)	0.29
Headache	9 (27.3)	4 (12.1)	0.31
Feeling of "unreality"	13 (39.4)	21 (63.6)	0.11
Hearing changes	1 (3)	5 (16.1)	0.23
Vision changes	6 (18.2)	13 (39.4)	0.18
Mood alteration	4 (12.1)	8 (25)	0.35
Discomfort	9 (27.3)	9 (27.3)	0.5
Hallucinations	0 (0)	4 (12.1)	0.36

Preliminary conclusions:

- 0.15 mg/kg ketamine is non-inferior to 0.3 mg/kg
- No difference in adverse outcomes

SERSDA = side effects rating scale for dissociative anesthetics; IQR = interquartile range

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Calcium Channel Blocking Anticonvulsants

Gabapentin & Pregabalin

Indication

- Diabetic neuropathy
- Post-herpetic neuralgia
- Fibromyalgia

Dosing

- Gabapentin: 300 mg po (max 1200 mg three times/day)
- Pregabalin: 50–75 mg po (titrate up to 50 -100 three times/day; max 600 mg/day)

Adverse effects

- Dizziness, fatigue, ataxia, peripheral edema, nystagmus, tremor, rhabdomyolysis, angioedema, and weight gain
- Caution in elderly, impaired renal function, & concomitant opioid use

Other Novel Pain Management Strategies

- Regional blocks
- Topical agents
  - NSAIDS
  - Capsaicin
  - Lidocaine
- Dopamine receptor antagonists
  - Metoclopramide, prochlorperazine, chlorpromazine, haloperidol, and droperidol
- Tricyclic antidepressants
- Nitrous oxide
- Sedatives:
  - Propofol
  - Dexmedetomidine

When Opioids are Unavoidable

The Journal of Emergency Medicine, Vol. ■, No. ■, pp. 1–6, 2018
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0736-4679/$ - see front matter

ELSEVIER

AAEM
Position Paper

THE TREATMENT OF ACUTE PAIN IN THE EMERGENCY DEPARTMENT: A WHITE PAPER POSITION STATEMENT PREPARED FOR THE AMERICAN ACADEMY OF EMERGENCY MEDICINE

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ACEP White Paper Pearls

- Safe Opioid Practices
  - Lowest possible dose
  - Oral morphine preferred
  - Consider cardiopulmonary monitoring
  - Limit opioid ℞ to 2-3 days
  - Informed decision making

Thoughtful Opioid Administration

- Exhaust other options
- Evaluate risk factors for opioid-related adverse events
- Review the prescription drug monitoring program (PDMP)
- Shared decision-making
- Offer naloxone if applicable

J Hosp Med. 2018 Apr;13(4):263-271. doi: 10.12788/jhm.2980.

Opioid Equivalency

Opioid (mg/day)	Conversion Factor
Codeine	0.15
Fentanyl transdermal (in mcg/hour)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone 1-20 21-40 41-60 ≥ 61-80	 4 8 10 12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

- ≥50 MME/day:
  - Monitor and assess pain and function more frequently
  - Discuss reducing dose, tapering, and discontinuing opioids
  - Consider offering naloxone
- ≥90 MME/day:
  - Avoid or carefully justify increasing dosage

MME= morphine milligram equivalents

https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf

During Hospitalization

- ✓ Use multimodal analgesia
- ✓ Opioid dosing:
  - ✓ Lowest effective dose
  - ✓ Shortest duration possible
  - ✓ Use immediate-release opioid formulations (morphine preferred)
  - ✓ Oral route of administration whenever possible
- ✓ Use an opioid equivalency table or calculator to understand the relative potency of different opioids
  - ✓ 1) when initiating opioid therapy
  - ✓ 2) when changing from one route of administration to another
  - ✓ 3) when changing from one opioid to another
  - ✓ ↓ by 25-25% when changing from one opioid to another
- ✓ Mitigate adverse effects:
  - ✓ Bowel regimen
  - ✓ Avoid central nervous system depressant medications
- ✓ Set goals with patients and families
- ✓ Monitor the response to opioid therapy
- ✓ Prescribing at the time of hospital discharge:
  - ✓ Ask patients about any existing opioid supply at home and account for any such supply
  - ✓ Prescribe the minimum quantity of opioids anticipated to be necessary

J Hosp Med. 2018 Apr;13(4):263-271. doi: 10.12788/jhm.2980.

Let’s put it together!

Which strategies should be implemented to prevent opioid overuse and misuse?

A. Use opioids only when benefit outweighs the risk
B. Maximize non-opioid alternatives and non-pharmacologic interventions first
C. Prescribe the shortest opioid course possible
D. Use morphine immediate release if an opioid is needed
E. All of the above

Case 3 revisited

- Two hours later NR is in severe pain (VAS=10) precipitating nausea and vomiting. The decision is made to initiate opioid therapy for refractory pain.

- What are some considerations prior to initiating analgesia?

- Which agent would you select?

Summary

- Opioid analgesics have high abuse potential and appropriate opioid stewardship is needed
- A multimodal approach should be used to treat acute pain
  - Non-pharmacologic interventions, adjuvants agents and opioids
- Many novel opioid-sparing agents are available to prevent or minimize opioid use
- If needed, opioids should be prescribed thoughtfully

Beating the Pain Game: Non-Opioid Analgesic Strategies Amid an Opioid Crisis

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I have no actual or potential conflicts of interest that pertain to the content of this presentation

Beating the Pain Game: Non-Opioid Analgesic Strategies amid an Opioid Crisis

Megan A Rech, PharmD, MS, BCPS, BCCCP

Self-Assessment

1) What is the analgesic ceiling for ibuprofen?
    a. 200 mg po x1
    b. 400 mg po x1
    c. 600 mg po x1
    d. 800 mg po x1

2) Which of the following is an appropriate use for parenteral lidocaine for acute pain?
    a. Renal colic
    b. Diabetic neuropathy
    c. Musculoskeletal pain
    d. Malignant pain

3) Which strategies should be implemented to prevent opioid overuse and misuse?
    a. Use opioids only when benefit outweighs the risk
    b. Maximize non-opioid alternatives and non-pharmacologic interventions first
    c. Prescribe the shortest opioid course possible
    d. Use morphine immediate release if an opioid is needed
    e. All of the above

4) Which of the following is the most appropriate dosing strategy for ketamine for acute pain?
    a. 0.5 mg/kg intravenous
    b. 0.1 mg/kg intranasal
    c. 0.3 mg/kg intravenous
    d. 1 mg/kg intramuscular

Answer Key:

1) **Correct answer: B.** Studies have shown that doses beyond 400 mg do not produce additive analgesia and may put patients at risk for adverse effects like gastrointestinal bleeding and renal dysfunction.
2) **Correct answer: A.** Lidocaine is an effective treatment for renal colic.
3) **Correct answer: E.** All of these strategies helps to minimize exposure to opioids and ensure they are prescribed in a way that mitigates risk of opioid abuse.
4) Correct answer: C. Sub-dissociate pain doses of ketamine fall within the range of 0.1 – 0.3 mg/kg intravenously. Doses exceeding this range may cause sedation.