



Optimizing Pain Management in ED

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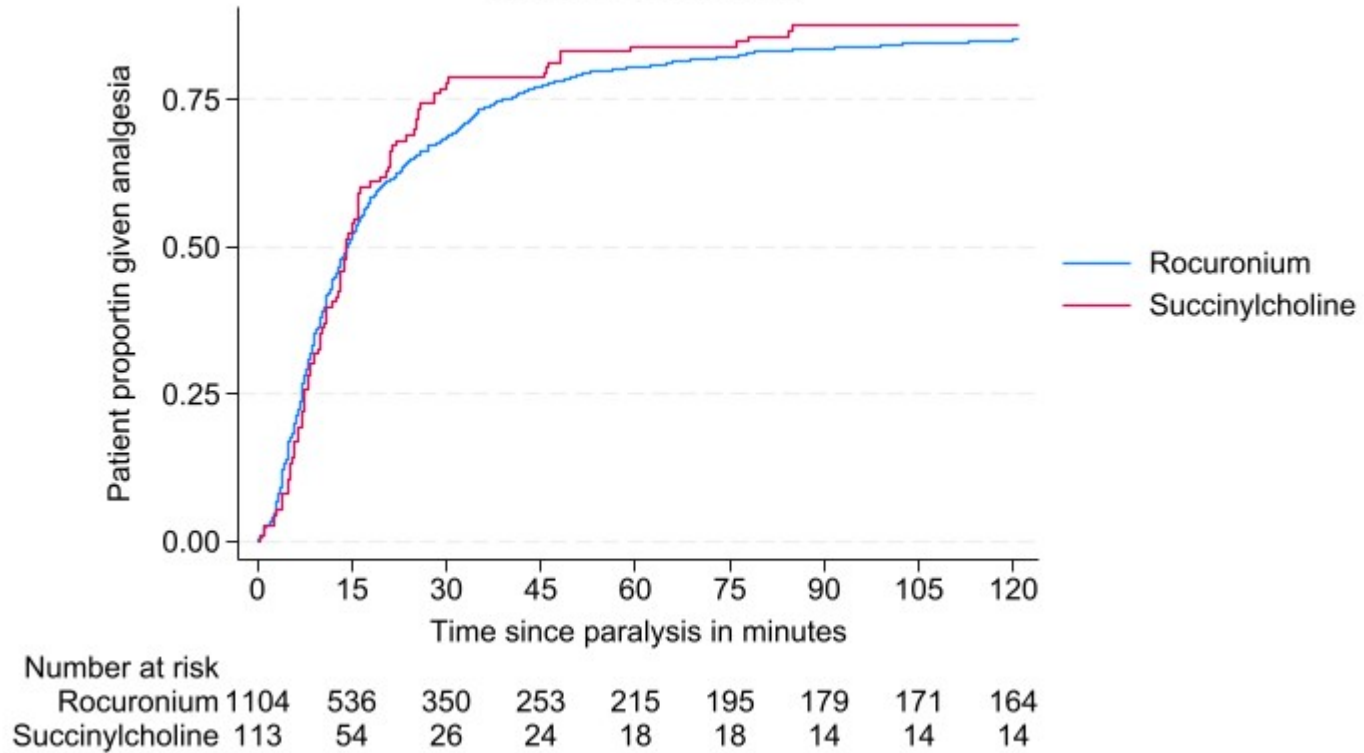
No disclosures

Potpourri Outline

- Intubation hurts
- Non-opioid - APAP / ibuprofen / topicals
- Fascia Iliaca Block
- Opioid dosing and pearls
- Opioid treatment in patients with OUD/AUD

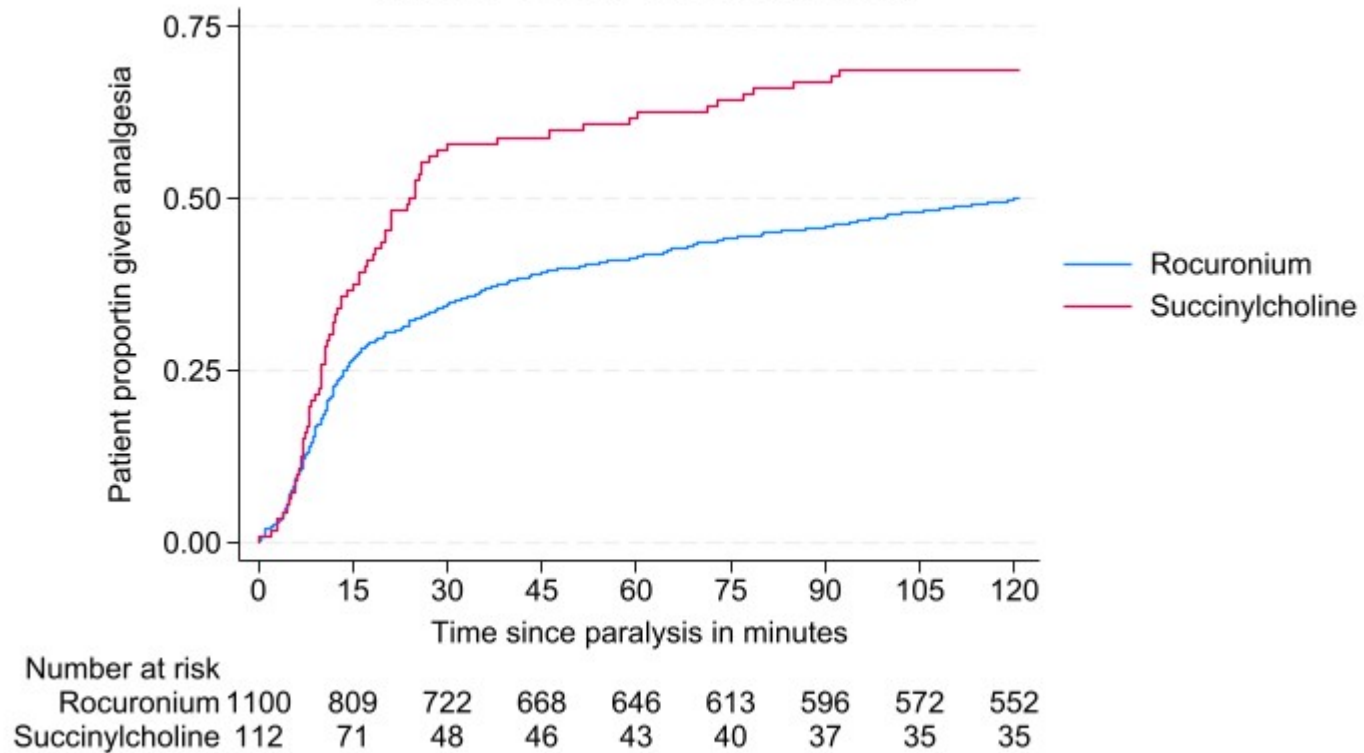
Does Intubation Hurt?

Time to Sedation





Time to First Pain Medication

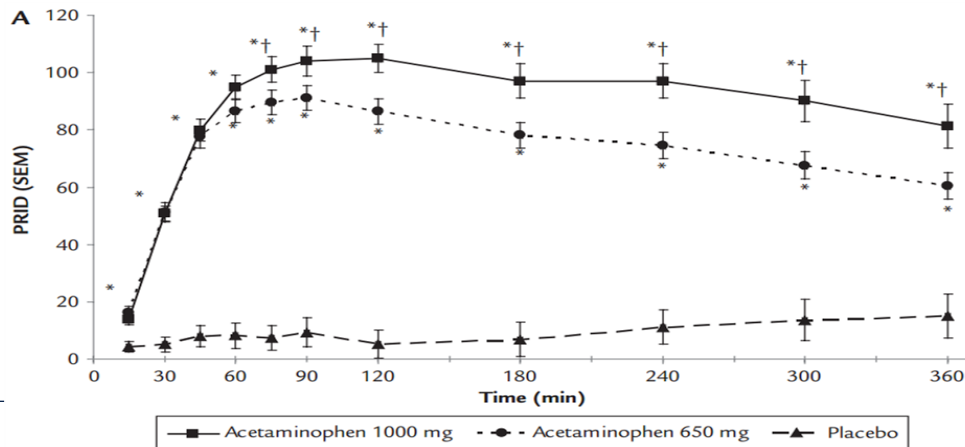


Non-opioid pain medications...

Don't Forget the Basics

- APAP what dose?

Patients	Intervention	Comparison	Outcome
Adult post surgical dental pain patients	APAP 1000mg (239)	APAP 650mg (241) Placebo (60)	1000 mg > 650 mg Both > placebo



How expensive is acetaminophen IV?

🔗 Direct costs \$0.02 tab vs \$29.72 IV



Patients	Intervention	Comparison	Outcome
Post abd-surgery pts n=579	1000 mg IV APAP q6h x 48hrs	Placebo	1* = SpO2 <90% - NS 2* = opioid use - NS 2* = pain scores - NS
Mild-mod pain in ED in AUS n=87 *received @ least one dose of opioid pre-intervention	1000 mg IV APAP x1	1000 mg po APAP x1	1* = pain @30min - NS 2* = opioid rescue - NS 2* = pt satisfaction - NS 2* = ED LOS - NS



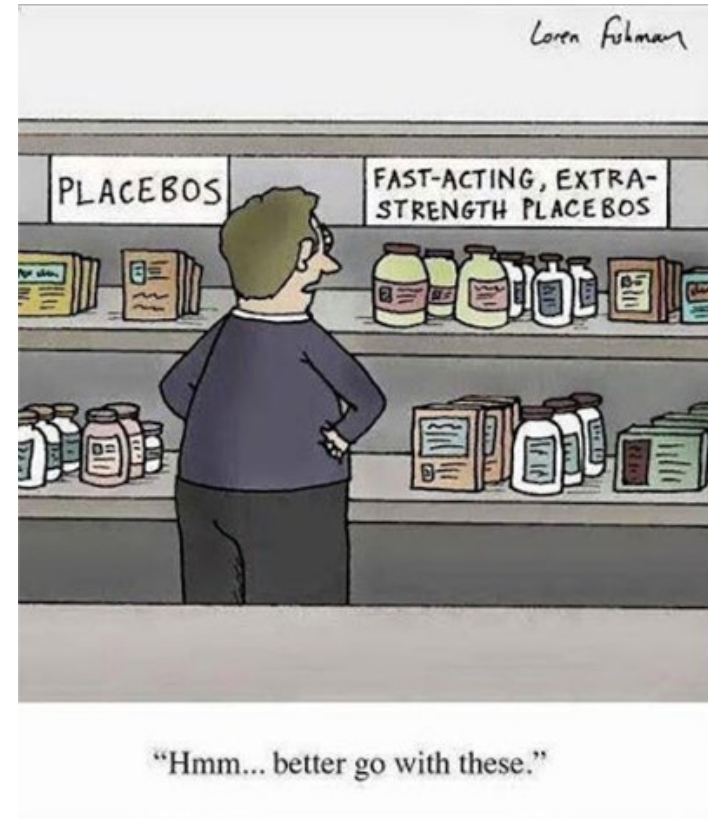
Don't Forget the Basics

- Ibuprofen/ketorolac what dose?

Patients	Intervention	Comparison	Outcome
Post molar extraction adults n=~300	Ibuprofen 50 mg Ibuprofen 100 mg Ibuprofen 200 mg Ibuprofen 400 mg	Placebo	ALL > Placebo 50 mg ~ 100 mg 200,400 mg > 50 mg 200 ~ 400mg
Abdominal pain >5 presenting to ED n=240	Ketorolac 10 mg	Ketorolac 15 mg Ketorolac 30 mg	No difference in pain reduction at 30 mins

Lidocaine patches

- What we use them for
 - BP/MSK
- Only indicated for
 - Post herpetic neuralgia
 - Non-indicated cost: ~\$600 for 30 count
- Max dose of patches at once: #3 (2100 mg)
- Approximate dose absorbed ~5%
- Recommend OTC 4% patch
 - 6 count ~\$10



Patients	Intervention	Comparison	Outcome
30 CBP, @3&6 weeks	Lidocaine 5%	Placebo	No difference Both reduced perceived pain by 50%
55 rib fractures in polytrauma pts	Lidocaine 5%	Placebo	No difference in opioid usage
100 pts LBP, @2&6wks	Lidocaine 5%	Placebo	No difference in pain scores
215 pts, chronic axial LBP, @q2wks x12 wks	Lidocaine 5%	Placebo	30% pain score decrease in both groups

Mol Pain. 2012 Apr 24;8:29.

J Am Coll Surg. 2010 Feb;210(2):205-9.

EN3220-011 & EN3261-001 Clinical Trials

Other Topical Interventions

- ⌘ Cochrane Review (~200 studies, 30,000 participants)
- ⌘ 6-12 weeks of treatment looking into 50% symptom improvement
- ⌘ Diclofenac gel (\$20-100)
 - Acute MSK strains/sprains - NNT 2
 - Chronic osteoarthritic pain - NNT 5
- ⌘ Capsaicin cream (\$20-200)
 - Post-herpetic neuralgia - NNT 11, NNH 2.6
 - Cannabinoid induced hyperemesis?



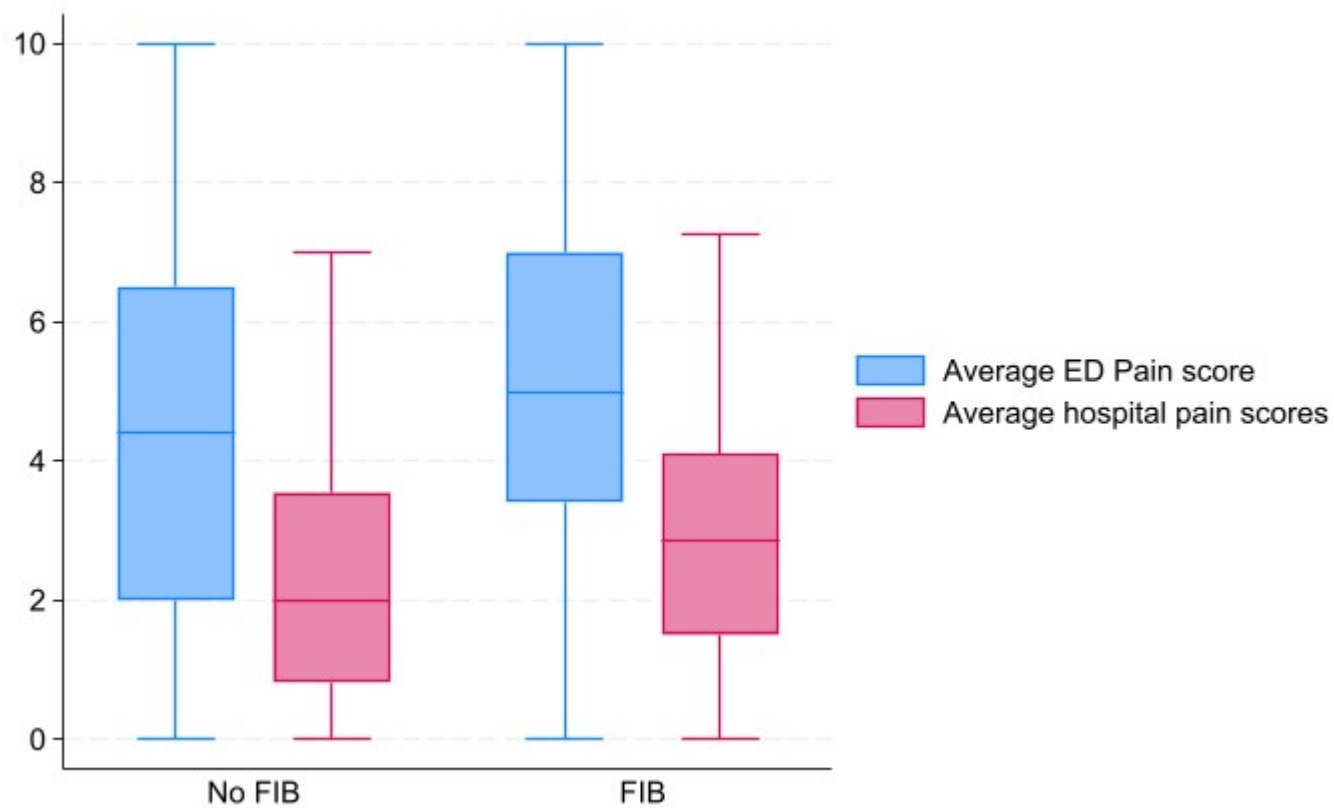
Muscle relaxers?

Patients	Intervention	Comparison	Outcome
Acute non-trauma LBP presenting to ED n=322	Naproxen + oxycodone/APAP (n=108)	Naproxen + placebo (n=107)	Pain & fnx score @ 3 weeks & 3 months
1 Bronx ED	Or Naproxen + cyclobenzaprine (n=108)		1* = NS 2* = more ADRs in non placebo groups Oxy/APAP NNH = 5.3 Cyclobenzaprine = 5.8

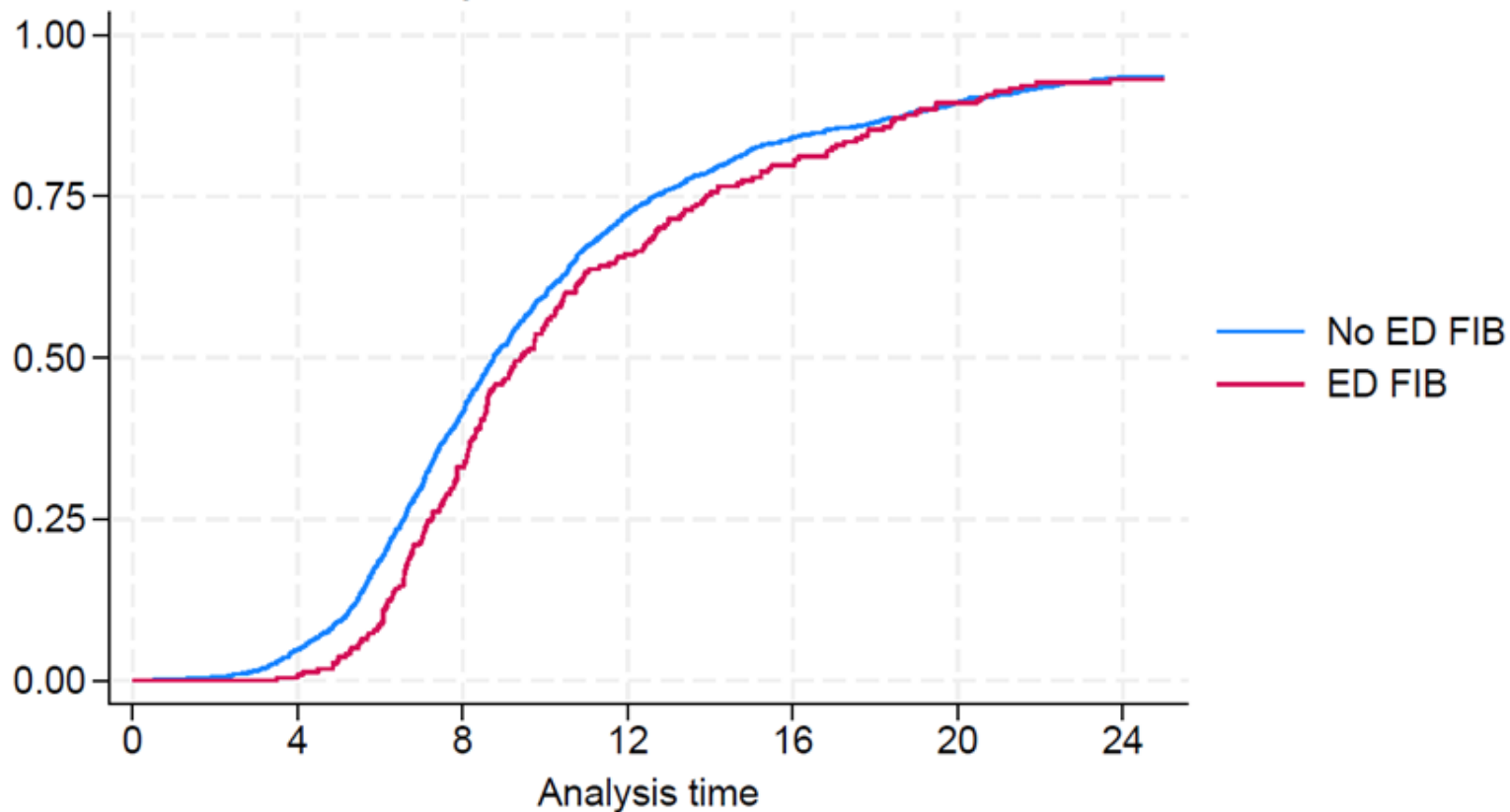


Fascia Iliaca Block

Patients	Intervention	Comparison	Outcome
98 Fractures: Femoral neck Intertrochanteric Subtrochanteric femur	US-guided FIB Bupivacaine 0.25% 40 ml n=33	No FIB n=59	17 vs 32 MME pre-op 37 vs 85 MME post-op 4 vs 5 hospital LOS
UCSF study 1583 hip fractures	US-guided FIB Ropivacaine 0.2% 40 ml n=218	No FIB n=1365	Outcomes (so far) Similar pain scores Similar opioid doses



ED LOS by FIB in ED Administration



Number at risk

No ED FIB 1364

1299

799

379

218

143

90

ED FIB 218

217

146

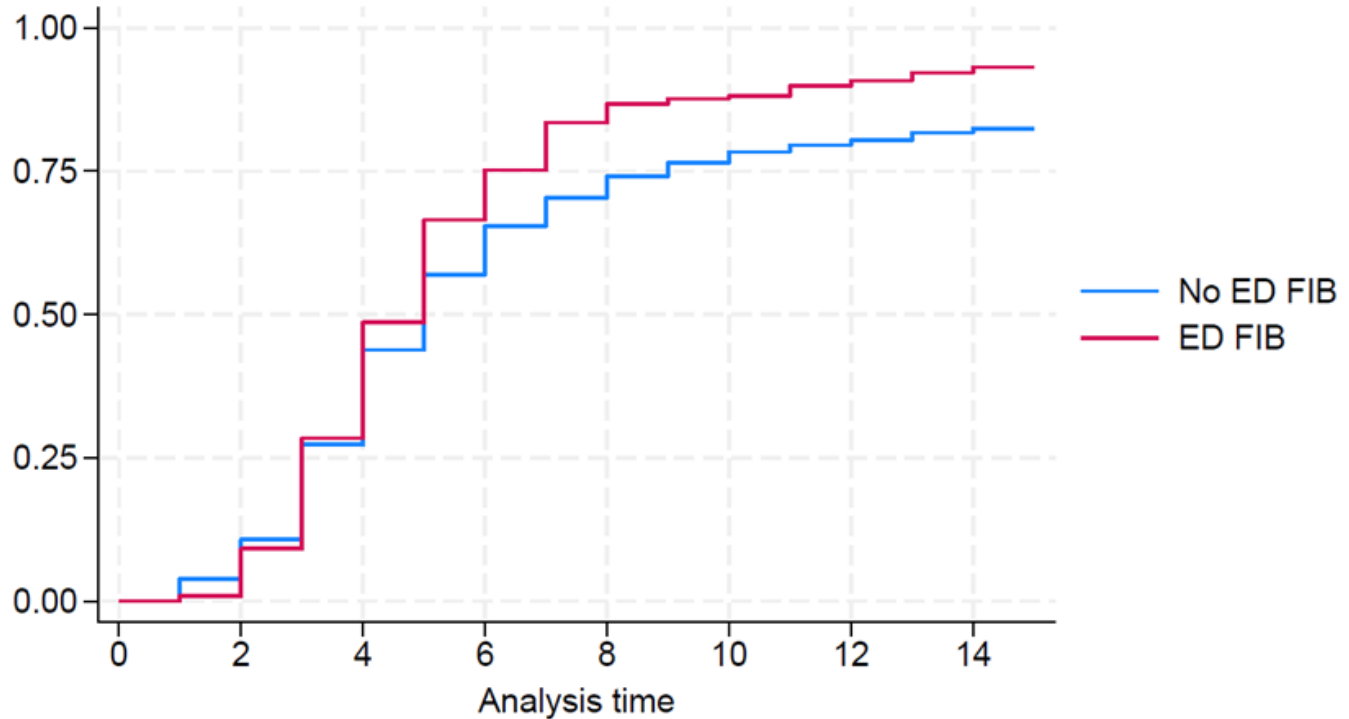
74

44

23

15

Hospital LOS by FIB in ED Administration



Number at risk

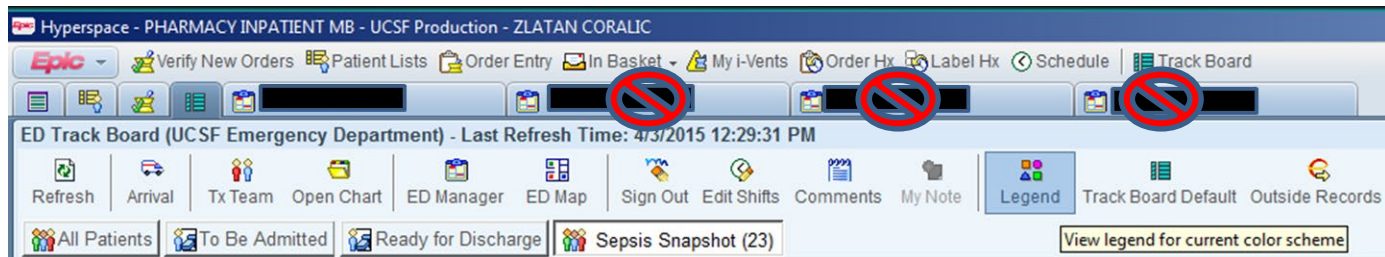
No ED FIB	1365	1312	992	588	405	321	279	250
ED FIB	218	216	156	73	36	27	22	17

General Non-Opioid Pearls

- ⌘ APAP 1000 mg PO x1
 - @ home encourage 1 gm PO TID ATC
- ⌘ Ibuprofen 600 mg PO x1
 - @ home encourage PRN/ATC
 - careful with GI, renal, and anticoagulants & DAPT
- ⌘ Use a lidocaine 5% or 4% patch (up to 3)
 - Prescribe with an insurance warning
- ⌘ Topical diclofenac reasonable
- ⌘ Muscle relaxers?
 - Caution, especially in elderly
- ⌘ Consider FIB for hip fractures

Opioids

Close Your Tabs!



Intravenous opioids & K

Drug (equivalence)	Initial IV ED dose*	Onset	Peak	Comment
Hydromorphone (1 mg)	0.5 mg q30min x 3	~5 min	~20-30 min	IV \neq PO #1 for med-mal
Morphine (7 mg)	4 mg q30min x 3	~5 min	~20-30 min	Renal clearance
Fentanyl (66 mcg)	50 mcg q15min x3	~1min	~10 min	Short duration
Ketamine (N/A)	0.1-0.3 mg/kg x1	~1 min	~5-10 min	Psych SE

*Assuming opioid naive

Opioid tolerant = 60 MME for >1 week or 40 mg of oxycodone daily x 1 week

Dangers of Fentanyl Patch

- Local depot formation
- Slow onset 6-12 hours
- BBW re: prescribing

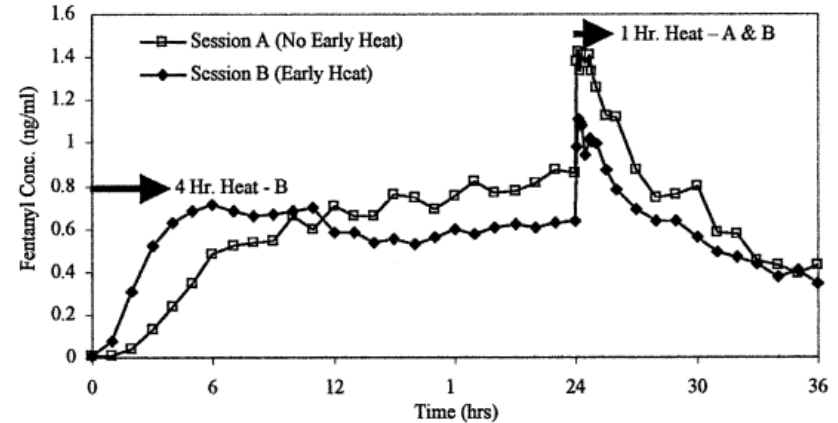









Figure 1. Mean serum fentanyl concentrations after transdermal fentanyl delivery with and without heat (n = 10).

General Approach to Pain Management with OUD/AUD

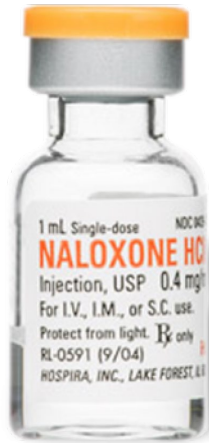
- Assess pt willingness to take opioids
- Buprenorphine
 - Give home dose if due
 - Give usual opioids
 - Do not stop buprenorphine
- Methadone
 - Give home dose if due (confirm dose with clinic)
 - Give usual opioids (may need higher doses)
- Naltrexone
 - Higher doses may be needed
- Communicate with clinic if giving Rx for opioids



Acute Pain Management

Drug(s)	Pregnancy	Breastfeeding
APAP (B)		
NSAIDs (C/D)		
Opioids (C/D)		
Local Anesthetics (B)		

If you have to give IV naloxone...



0.4 vs 0.04 mg



Opioid Summary

Opioid naive - start on lower end, titrate to effect

Limit repeat doses of IV opioids (e.g., x3)

Ketamine may be a useful adjunct

Pts with SUD with legitimate reasons for opioids should be given opioids

Pregnancy or breastfeeding does not contraindicate pain management

If able, be gentle with naloxone

Don't forget, intubation hurts and is uncomfortable