OPTIMIZING NON-OPIOID PAIN MANAGEMENT IN THE PERI-OPERATIVE PERIOD

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Disclosures

- I have no conflicts of interest to report.

Case Presentation

- 42 y/o male with ESLD due to Hep C undergoing autologous liver transplantation
- Previous history of IVDA.
  - Has been clean for years
  - Maintained on buprenorphine/naloxone (suboxone)
- Was on suboxone up until day prior to transplant

POD #1

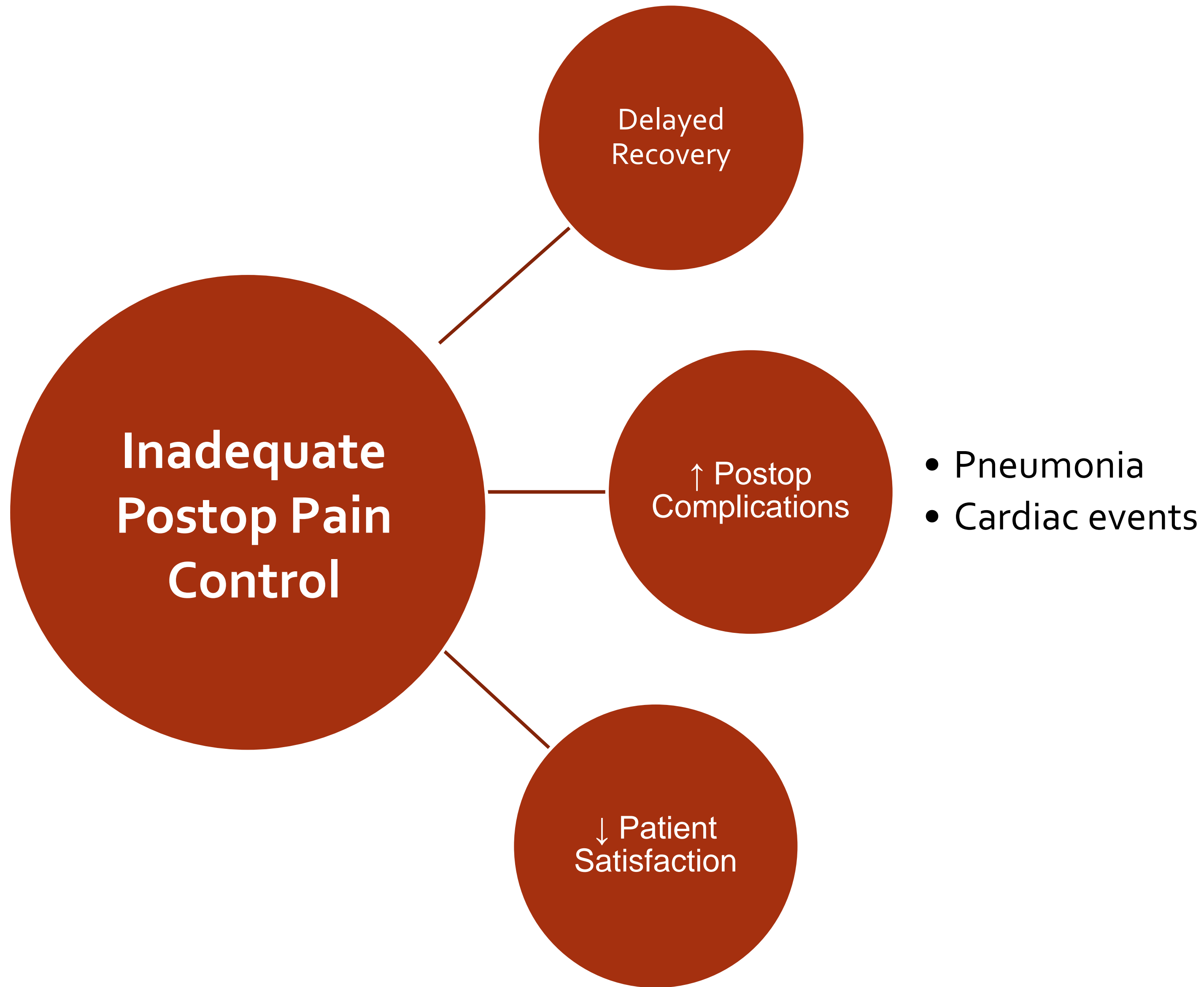
- Transplantation completed successfully…

- Pain service consulted to help with pain management.
  - Doing well on his hydromorphone PCA
  - Plan was to transition to oral medications – opioids and non-opioids.
  - Depending on length of stay, can transition him to suboxone before discharge

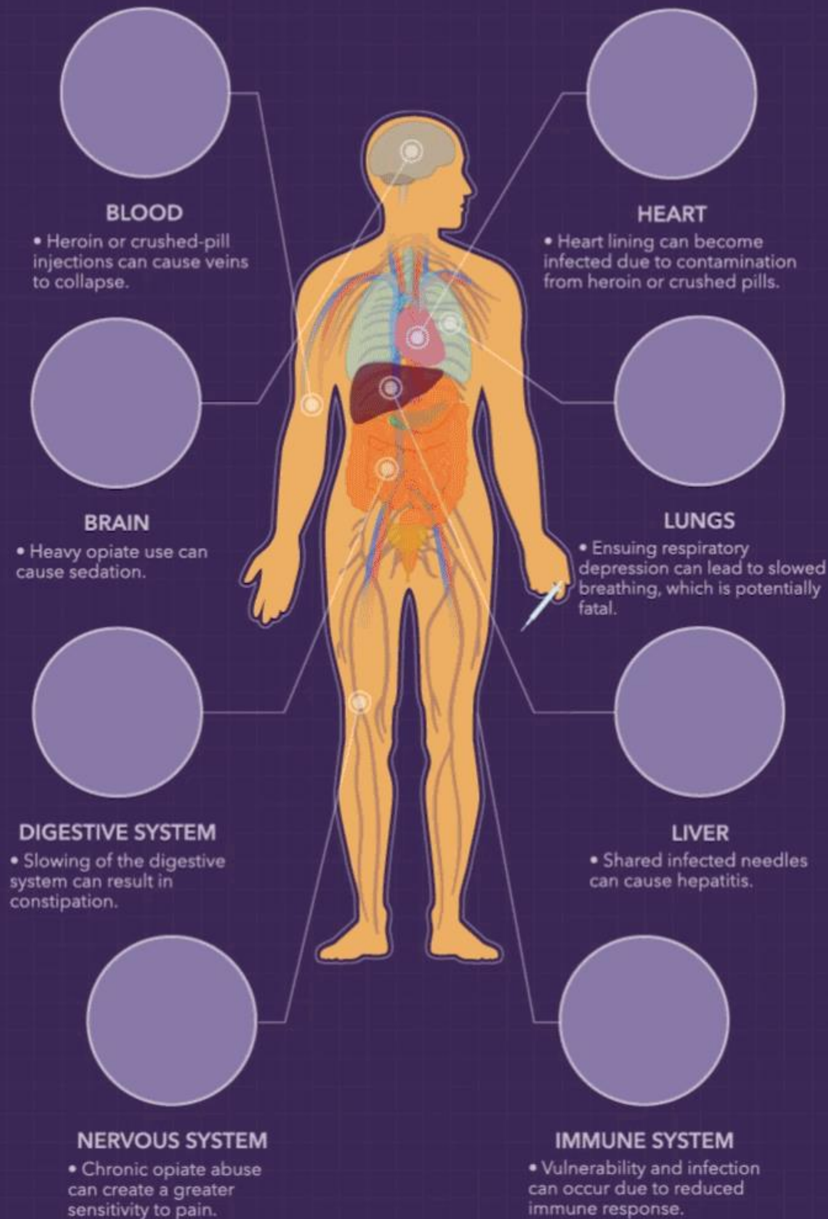
Hospital Course

- Patient started refusing to stop using rescue IV medication
- Refused to transition to suboxone therapy only
- Threatened to leave AMA
- Found with needle in his arm – girlfriend had brought heroin to his room

- Why discuss this patient?
- This is a real problem – not far fetched

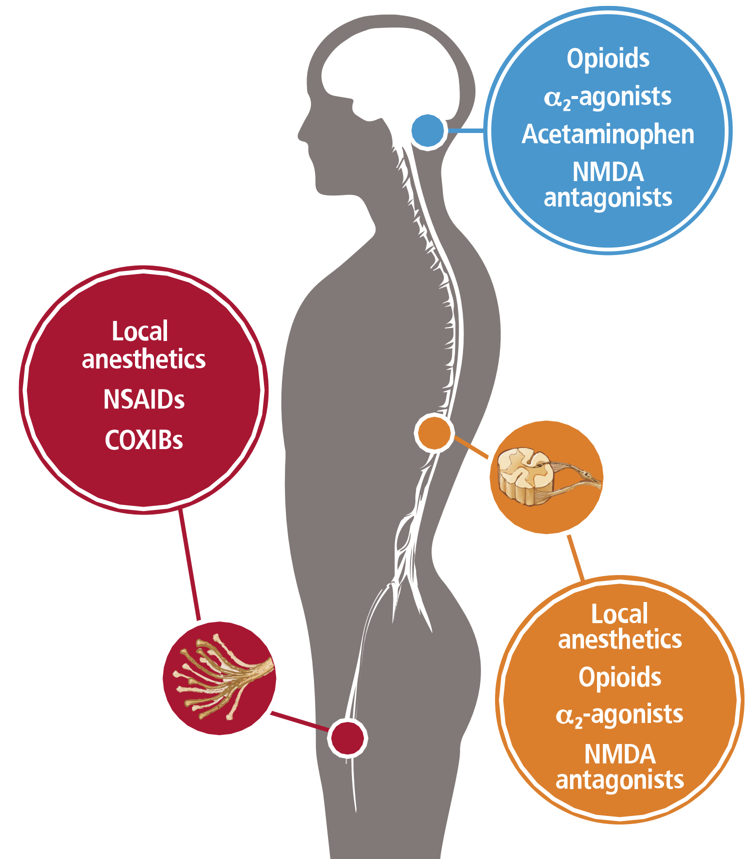


- Pneumonia
- Cardiac events


THE EFFECTS OF OPIATES ON YOUR BODY
BLOOD
• Heroin or crushed-pill injections can cause veins to collapse.
HEART
• Heart lining can become infected due to contamination from heroin or crushed pills.
BRAIN
• Heavy opiate use can cause sedation.
LUNGS
• Ensuing respiratory depression can lead to slowed breathing, which is potentially fatal.
DIGESTIVE SYSTEM
• Slowing of the digestive system can result in constipation.
LIVER
• Shared infected needles can cause hepatitis.
NERVOUS SYSTEM
• Chronic opiate abuse can create a greater sensitivity to pain.
IMMUNE SYSTEM
• Vulnerability and infection can occur due to reduced immune response.
www.DrugAbuse.com

Multimodal Analgesia

- When multiple modalities are used to provide pain relief - Various parts of the pain pathway targeted.
  - Decreased dependence on single modality agents → decreases the risk of side effects.
- May include
  - Pharmacological (opioids, NSAIDS, gabapentanoids)
  - Regional analgesia (nerve blocks, indwelling catheters)
- Enhanced recovery protocols



Pre-op

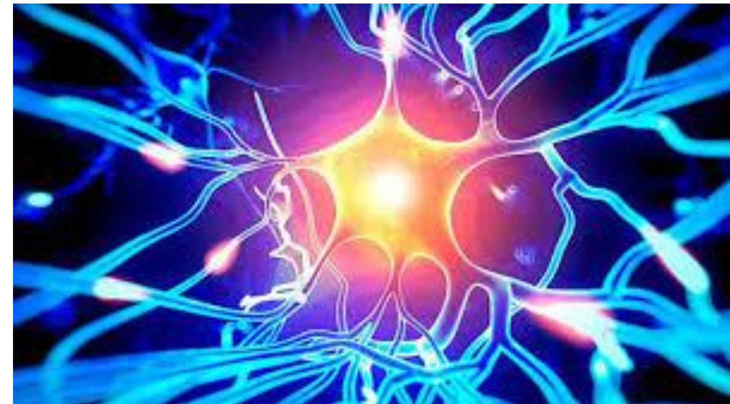
- Pre-op medications – taken 1 hr prior to induction
  - Gabapentin (calcium channel blocker) – 300-800mg
  - Acetaminophen – 975mg
  - Celecoxib (COX2 inhibitor) – 100-200mg

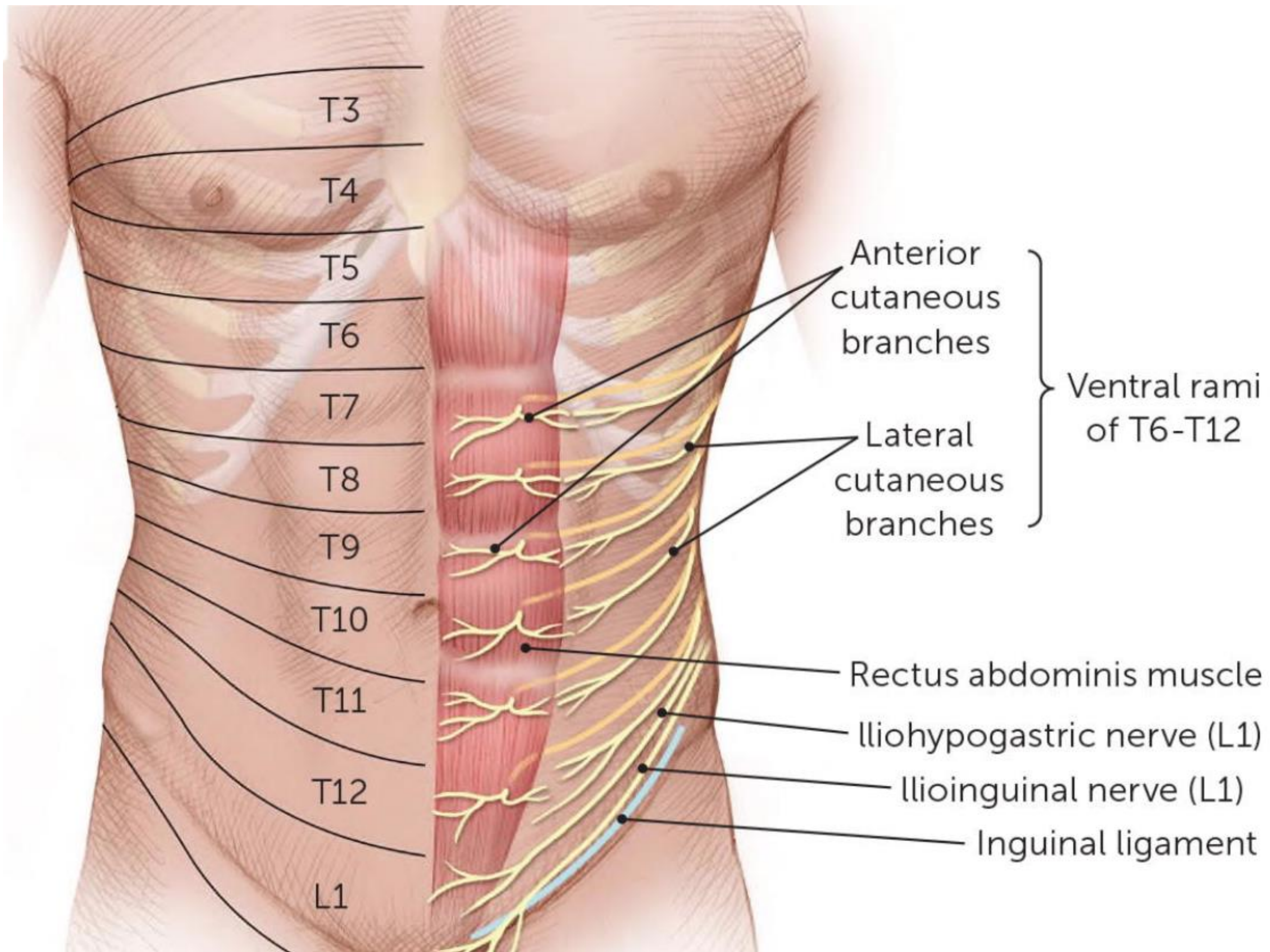
- Regional Techniques, if appropriate

Regional

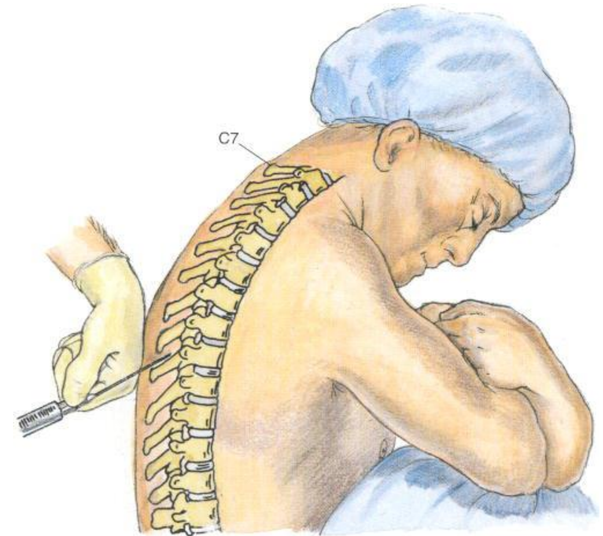
- Epidural & paravertebral catheters
  - open abdominal & thoracic procedures

- Peripheral nerve catheters or single shots
  - Transverse Abdominal Plain blocks
  - Extremities blocks




T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
L1
Anterior cutaneous branches
Lateral cutaneous branches
Ventral rami of T6-T12
Rectus abdominis muscle
Iliohypogastric nerve (L1)
Ilioinguinal nerve (L1)
Inguinal ligament

Thoracic epidurals

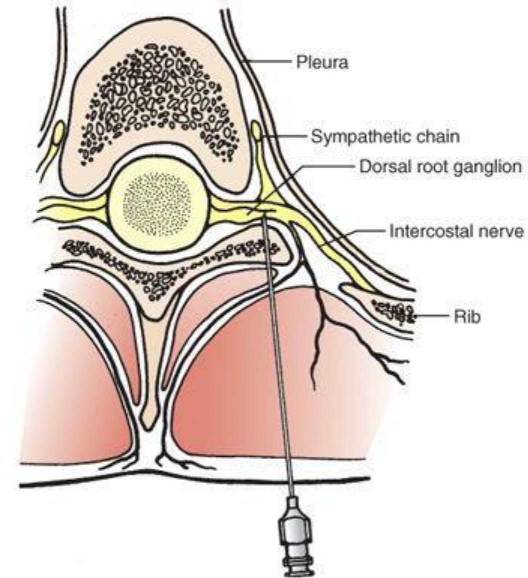


- Epidural placed between T9-11 levels
- Mix of local anesthetic and a very low concentration of fentanyl

BENEFITS	RISKS
Superior pain control	Hypotension
Minimal lower extremity weakness – patient able to walk/participate in PT	Risks associated with procedure (headache, hematoma, abcess)

Thoracic Paravertebrals

- Targets the DRG and intercostal nerve
- Useful in thoracic procedures, rib fractures



BENEFITS	RISKS
less hypotension	Risk of pneumothorax (although less of an issue with lung procedures)

Intrathecal Morphine

- Used for laparoscopic procedures
- 1 Intrathecal dose of morphine = 100 IV dose
- Post-op monitoring required

Intra-op pain management

- Ketamine infusion - 0.25mg/kg/hr
- Lidocaine Infusion – 2mg/kg/hr

- Avoid hydromorphone
- Limit fentanyl to 2-4 mcg/kg entire surgery

- Local anesthetic infiltration at surgical site

Post op

- Continuation of multimodal analgesia is important
  - Continue scheduled gabapentin
  - Continue scheduled acetaminophen (3000 mg daily) & NSAIDs
- Transition quickly to oral opioids
- Limit IV opioids

Suboxone therapy for addiction

- Recent editorial published challenging conventional practice for patient receiving Suboxone (Buprenorphine/naloxone)
- Data suggesting we should not stop suboxone therapy in the peri-operative period
- Treat more like a long acting opioid – methadone, etc.

Continued Challenges with Pain Management

- Patient expectations regarding post-op pain
  - We need to set up realistic expectations in the clinic regarding pain control

- Inconsistent practices
  - Personal preferences and departmental variations

Take Home Points

- Multimodal approach to pain management important throughout peri-operative period
  - Pre-op, intra-op, post-op

- Teamwork between surgical team, anesthesia team and acute pain team will give our patients the best outcomes

Take Home Points

- Set up appropriate expectation with our patients regarding pain

- Patients on suboxone for addiction – CAUTION!

References

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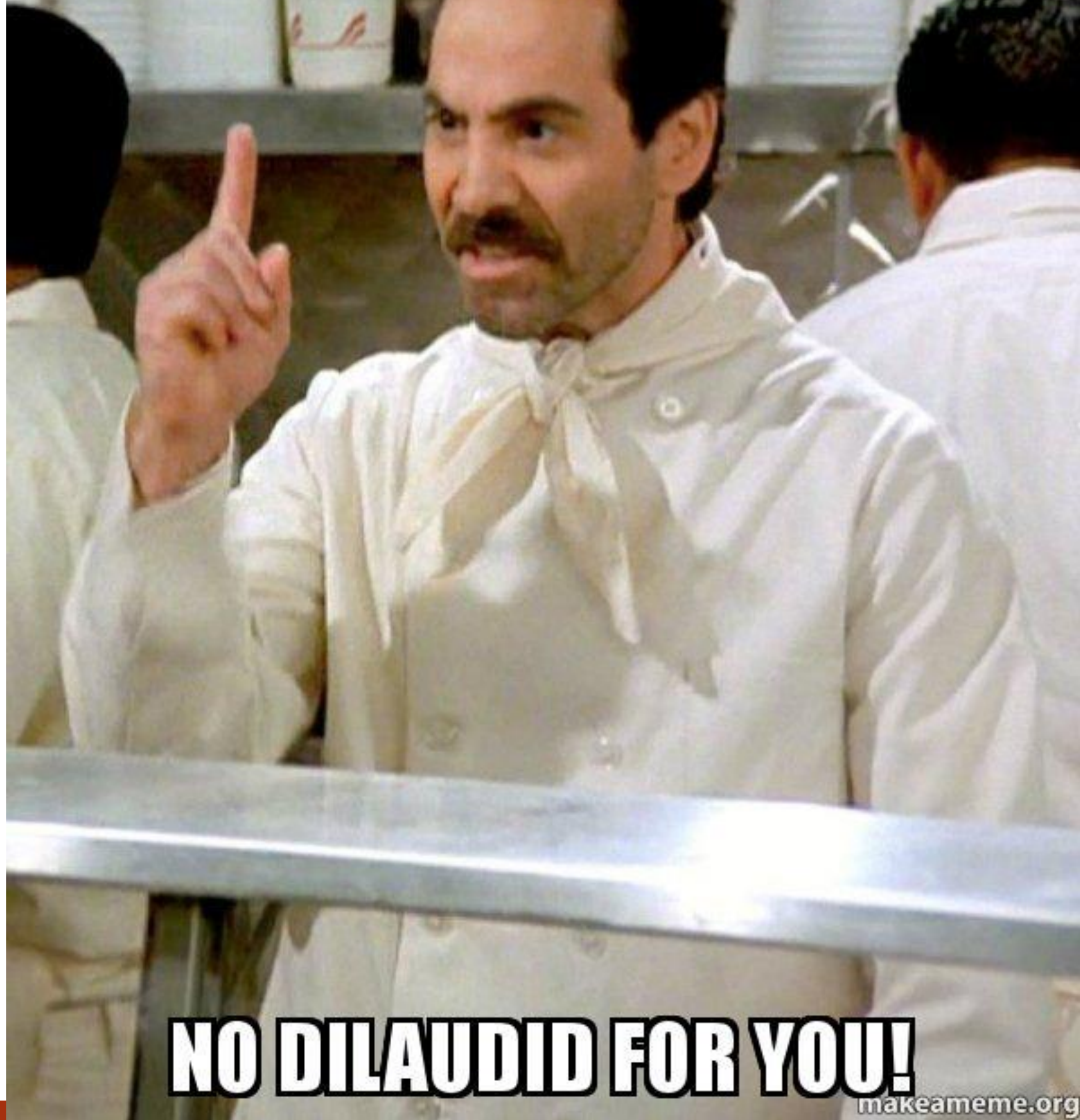
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