

Acute Pain Floor Management Quick Guide (2/26/19)

Basic multimodal medications:

OxyContin/MSCContin determined it is needed based on 24 h usage

Oxycodone 5-15 mg q3h

Tylenol 650-1000 mg ATC

Gabapentin 300mg TID (if > 70 yrs: 100mg TID)

Celebrex 100 mg BID

For patients who do not have catheters or are NPO and need to be escalated beyond the above:

IV lidocaine 1 mg/kg/hr infusion to start with q8h lidocaine plasma level checks. Goal is 3-5 ng/ml. Very safe medicine but consider heart disease as a relative contraindication that may require supervisor input or a consult before starting. Check liver function, it is cleared through the liver.

IV ketamine can be used on all floors 0-30 mg/hr. Higher doses require ICU and telemetry. Usual starting dose is 5-10 mg/hr and it is safe to titrate every 2-3 hours for acute pain. Relative contraindication with significant mental disease, cardiac disease, or liver disease.

Nerve catheters:

Interscalene

Cheung/Costouros can go home with catheters case by case

Supraclavicular and Infraclavicular catheters: pulled when pt is comfortable, can go home with these catheters if pt reliable

Femoral nerve: for hip fractures can stay in until before they leave for rehab. For **TKA**, post-op day 2 (unless extenuating circumstance ie opioid naïve, opioid tolerant, frail) **POD #2 Order bupr off at 0430 and D/C catheter by 0730.**

Adductor canal: Post-op day # 2 unless extenuating circumstance (as above) **POD #2 Order bupr off at 0430 and D/C catheter by 0730.**

Popliteal: Can stay in, pt can go home with catheter if pt reliable

Bilateral TAP for Plastics: remove post op day #2, if a study patient, do not bolus, do not write additional meds. Can increase meds they already have. Plastics writes infusion orders. When pulling for study patient postop day 2, discontinue PCA.

Troubleshooting – Assess motor and sensory function and compare with expected loss of function. **If no block**, bolus lidocaine 1% 5-10 ml or bupivacaine 0.25-0.5% 5-10 ml in divided aliquots over 5 minutes. Reassess for confirmation of numbness/weakness. If block sets up or pain improves, consider catheter as functioning. If block is not working, initiate multimodal regimen, consider IV lidocaine, consider replacing catheter or removing catheter (only after discussion with patient)

If too weak or too numb – initial block wore off, gained function in between block wearing off and hooking up new pump, and now “caught up” and again having numbness. Check distribution and weakness to ensure if consistent with block. Can consider clamp trial – stop infusion and see if it wears off several hours (council patient they may have increased pain). Can consider decreasing infusion rate. If patient strongly dislikes, can discuss with patient removing with understanding they can have increased pain (clamp trial assist in making decision)

If leaking - check where the leak is (tubing, connection, insertion site). Common to have leakage at insertion site. Provide reassurance, dressing can be reinforced with towel/gauze. Ok if slightly pink-tinged. Consider decreasing infusion rate.

Redness – check and see if other sx's concerning for infection, if concern, should remove catheter.

LAST symptoms – get help, monitor patient closely, stop infusion, consider intralipid (bottom of regional cart)

Paravertebral – can cause epidural like presentations (sympathetic blockage, hypotension). Anticoagulation similar to epidurals.

Interscalene – large bolus can take out entire brachial plexus (motor function). 100% of cases get ipsilateral phrenic palsy – sensation of difficult breathing, raised hemidiaphragm on CXR, usually benign but with respiratory disease can become issue. Can get sympathetic chain blockade – Horner's syndrome, nasal congestion. Can get recurrent laryngeal nerve blockage – hoarseness.

Communication with Regional team: Find out who the 2-3 residents are on regional, and create email/text thread. Regional residents make daily followup calls for outpatient catheters so communicate whenever you discharge a patient with a nerve catheter. The acute pain resident covers Block pager (25625) overnight and fields outpatient catheter issues – let the regional team know the next morning if any overnight events.

Patients going home with peripheral nerve catheters:

1. Review discharge instructions pamphlet (Patients Guide to Ambulatory Pain Relief) and zip inside bag. These are available in NP office or block area.
2. Page BLOCK pager to let regional resident know pt is being discharged with a Nimbus
3. Note: Patient must be reliable and be able to communicate over the phone with the Regional resident. If any questions with language barrier, talk to Regional before sending pt home with On Q. The pt cannot have infection, catheter site must be inspected (site not red, catheter secure), pt must be willing to remove own catheter

Epidurals:

We have 3 infusion lines:

1. **Local:** bupivacaine, (lidocaine if we want combined systemic and local effect). We sometimes change bupr to lido if the dermatomes are too low or if the patient has

acute pain that is in a separate location from the epidural (ie trauma patients).

2. **Opioid:** Hydromorphone (diffuses across dermatomes and can help with pain no matter where the epidural is located)
3. **Opioid:** PCEA. Basic order is fentanyl 10-25 mcg q 15 minutes. This works basically as an IV PCA with similar pharmacokinetics as IV. We also have mixed PCEAs with the basic order being bupivacaine 0.25% mixed with fentanyl 4 mcg/ml given as a 3 ml bolus q 15 minutes. This allows a patient with an epidural block that is a bit too low to bolus local anesthetic themselves to cover. This is a great first move for half-way functioning epidurals (patchy or too low). This will not help a non-epidural catheter.
4. Use epidural order set

Weakness – As above. Only local anesthetics infused in the very low thoracic spine or in the lumbar spine cause lower extremity weakness and numbness.

Opioid – nausea, vomiting, itching and sedation are all opioid related side effects. Decrease or stop epidural opioids (usually hydromorphone first). Hydromorphone may need 10-12 hours to clear out of epidural space.

For evaluation:

1. Look at the site. Does it look like it is lumbar or thoracic? How deep is the catheter under the tape? Has it been pulled out?
2. Evaluate the patient clinically with ice cube and motor exam. Is there a block? Where is it?
3. If no block, bolus lidocaine 1% or bupivacaine 0.25-0.5% 2-3 ml q 3-5 minutes depending on patient clinical status (ie risk of hypotension or frail, go slow). There should be significant numbness/weakness after 5-10 ml given and waiting 10-15 minutes. **If there is no block**, there is no epidural catheter and other modalities should be used to cover pain or catheter should be replaced.

If patients are comfortable, minimal evaluation is needed. **If patients are uncomfortable**, evaluate dermatomes and myotomes covered by epidural. Thoracic epidurals are expected to create thoracic or abdominal numbness (T5-12) with **no lower extremity motor** weakness. Low thoracic epidurals and high lumbar epidurals may cover abdomen with numbness, but this may extend down to pelvis and hips in T12-L2 numbness with associated hip flexor weakness. Lumbar epidurals will frequently only provide numbness to pelvis and legs and miss abdomen completely. Leg weakness and numbness is expected with a lumbar epidural depending on how much local anesthetic is infused. This is important because a **true thoracic epidural should never cause lower extremity symptoms** like weakness or numbness with the exception of the low thoracic epidural that causes some hip weakness (L2). This should still spare knee and ankle function however (these are L3-S1 dermatomes).

Any unexpected clinical effect from an epidural could BE AN EMERGENCY. If toes are numb from a T11 epidural, then this is an epidural hematoma until proven otherwise

Side Effects:

Hypotension – only local anesthetics cause hypotension. If severe and patient symptomatic, stop local. If borderline, decrease infusion rate and monitor. Consider increasing hydromorphone or fentanyl PCEA if local is decreased. If consulting service desires all infusions off (after educating that epidural opioids work the same as IV/PO opioids and don't cause hypotension) then consider PCA and IV lidocaine to replace catheter.

HEMATOMA:

Don't miss this. If the epidural location and medication infusions don't make sense clinically with progressive numbness and/or weakness unexplained by catheter location, then this is a hematoma until proven otherwise. Example: T11 epidural with stable infusion rate for 2 days now develops leg weakness. Hematoma. T12 epidural with mild hip flexor weakness that goes away when local anesthetic is stopped. Not a hematoma.

When there is a suspicion for hematoma (ALWAYS!) and the clinical scenario doesn't make complete sense, stop the local anesthetic. Whatever numbness or weakness that was concerning should abate within 60-90 minutes. If it stays the same or progresses, then hematoma is more likely. If it stops progressing or decreases, then it is likely due to the local anesthetic rather than mass effect on the spine. Clinical exam is the BEST indicator of hematoma. Don't rely on back pain or bowel and bladder dysfunction. These patients are on pain meds and they have catheters. The clinical exam will tell you what is going on.

So you think it is a hematoma? Call your fellow and attending immediately. Call neuro radiology for stat MRI. Call OR front desk for possible emergent case. This patient needs to have the catheter pulled (not MRI compatible) and be in the MRI scanner within 1-2 hours and be in the OR within 3-4 hours. Irreversible damage occurs at 8 hours.

Anticoags:

Hold morning dose of Heparin/Lovenox prior to catheter discontinuation

INR >1.4 – precludes manipulation of the catheter due to risk of epidural hematoma

***epidural hematoma** is one of the most devastating risks associated with epidural analgesia/anesthesia – bleeding into a confined space leads to progressive, often painless, compression of neural structures and potentially permanent neurologic sequelae! If you are ever concerned, this must be immediately evaluated with MRI, and emergent neurosurgical evaluation for decompression

An INR >1.2 should be discussed with fellow/attending
Prior to discontinuation of catheter with INR of 1.4 – reconfirm lab value, administration of FFP, neurochecks, postpone catheter discontinuation if INR trending down

Heparin 5000 units SQ BID don't worry about it. ASRA says no contraindication.

Heparin 5000 units SQ TID hold one dose and pull 6 hours after last dose. Next dose in 1-2 hours. ASRA recommends caution.

Lovenox we generally don't combine epidurals and Lovenox at Stanford. If this happens it is usually by accident and ASRA guidelines apply. 40 mg qd = hold for 12 hours. Anything more = hold for 24 hours.

Plavix – we are stuck with the catheter for 7 days. This happens rarely and usually in NICU

NSAIDS - these are fine but keep in mind overall clinical risk of patient. By this we mean the overall combination of patient frailty, liver function, platelets, other medications can combine to create a high risk. But in general these are fine.

Specific services

Ortho: We generally manage catheter and multimodal orders

Ortho TKA/THA: everything

Foot/ankle: no Celebrex, pt can keep popliteal catheter, can go home with catheter

Urology: Gill ok for pain team to write multimodals + epidural

Shoulder/arm: gabapentin ok, no Celebrex, Interscalene catheters get pulled POD # 1 usually do not go home with interscalenes

Spine: manage epidural and meds, if they placed the epidural, they will pull it, Alamin does not want gabapentin unless it was a home med

Trauma: prefers weaker blocks to assess nerve function, can write for pain medications

Berry/Backhaus: epidural opioids ok

Open Pneumonectomy POD#4 or at primary team request

Shrager: manage epidural bupri only, his team will write all other pain orders

Berry: manage epidural with bupri/dilaudid/fent pcea

Be aggressive with hypotension, decrease/stop bupri rate, contact primary team for fluid bolus if warranted.

Urology:

Epidurals bupri/dilaudid/fent pcea

D/C in collaboration with team

List management:

Anesthesia may pick "Yes" to pain consult, pt will appear on list, this pt may fall off the list if they go home and are not admitted

Anesthesia may pick "yes" to pain consult, pt will go thru PACU and PACU resident will add "TT Acute Pain"

Both scenarios will have pt on list, to get pt off list, double click on "yes" then pick no AND end "TT acute pain" as treatment team.

Pt will appear on the list for unknown reason, this happens when a team consults pain service via an order or they have ordered lidocaine (ie in the ICU). Ordering team is still REQUIRED to call us. To get this pt off the list, d/c consult order in orders.

To make your pain list:

Drag acute and chronic pain under whatever title you create. Then go to system lists, click New MD Consults, click New Pain and send to your list.

Advanced Practice Providers(APP):

Tracey Mallick, NP (cell phone: 650-400-2409)

Pam Schreiber, CNS (cell phone: 650-529-5142)

Jason (Chen Der) Low (cell phone: 650-839-3747)

Tammy Campbell, NP (cell phone: 408-502-1342)

Karen Muller (cell: 408 674-8019)

CV surgery:

Myocardial bridge unroofing surgery pts:

Paravertebral catheters

Single catheter 0.2% ropi autobolus 10mg q 60 min +5ml q 30 min pt demand

2 catheters 0.1% ropi autobolus 10mg q 60 min +5ml q 30 min pt demand

Recommend multimodal medications:

Gabapentin 300mg TID, Tylenol 650mg q 6h, oxycodone 5mg q 4 h prn

Pull at primary team request or when chest tube is d/c'd

Thoracic surgery: writes own meds, we mainly manage catheters only

Paravertebral catheters

Single catheter 0.2% ropi autobolus 10mg q 60 min +5ml q 30 min pt demand

2 catheters 0.1% ropi autobolus 10mg q 60 min +5ml q 30 min pt demand

Epidurals: Thoracic team, will page us. Epidurals pulled (usually).

Shrager no epidural opioids