Multimodal Pain Management Guideline

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**Multimodal Pain Management Guideline**

Developed by the Georgia Quality Improvement Program

**Content**

The content for this publication was developed by the Georgia Quality Improvement Program through collaboration with stakeholders within the state of Georgia trauma system to provide guidance to hospitals in Georgia. This content was reviewed and edited by GQIP members and related content experts. This document is intended to be used as guidance only in the development of policies and protocols within hospitals in Georgia. This is a living document that will be reviewed every 3 years and updated as needed to maintain the standards of care set by national evidence-based findings.

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**Approval:**

GQIP Trauma Collaborative Members

**Review Dates:**

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1. **Purpose:**

To optimize use of multimodal pain control strategies for patients with traumatic injuries resulting in decreased utilization of opioid medications in the trauma population.

1. **Background:**

The opioid epidemic remains a prominent public health concern in the United States. The misuse of and addiction to opioid medication is an urgent national crisis fueled in part by continued prevalent opioid prescribing. According to the Centers for Disease Control and Prevention (CDC), trauma accounts for almost 40 million visits to the Emergency Department and two million inpatient admissions each year. The relative acuity and severity of pain at onset in this population poses a unique challenge, but increased understanding of pain physiology has facilitated alternative pain management approaches, collectively known as multimodal analgesia. This Guideline can serve as a reference for a multimodal approach to treating pain in the trauma patient as a quality initiative project for The Georgia Quality Improvement Program (GQIP).

1. **Goals:**

Provide a guide for the use of multimodal analgesia in the acute setting for trauma patients in the state of Georgia. This guideline will outline simultaneous use of multiple analgesic medications with different mechanisms of action to allow for synergistic effects that decrease reliance on narcotic medication. This strategy has the ability to improve patients’ pain control, satisfaction, and functional status. The goal for pain management is not “zero pain”; it is to aim for a tolerable pain level that will allow the patient to function and participate in their therapy and recovery. These guiding principles allow for each individual patient to have ongoing assessment and titration based on their individual needs.

1. **Definitions:**

**Multimodal Analgesia**: a pharmacologic method of pain management which consists of the administration of two or more medications with different mechanisms of action for providing analgesia.

**Types of Pain:**

* **Nociceptive Pain:** from tissue damage
* **Inflammatory Pain**: from inflammatory mediators produced at the site of injury
* **Spasmodic Pain:** from noxious stimulant at the site of injury
* **Neuropathic Pain:** related to nerve damage from tissue injury
* **Psychogenic Pain:** physical pain that can be increased by mental, emotional, or behavioral factors

1. **Guideline:**
2. **Medication Recommendations**

* Recommend use of a combination of ***two or more*** medication classes that are prescribed on a ***scheduled*** basis.
* Daily assessments should be conducted, and the regimen titrated as needed for optimal pain control.
* If opioid pain medication is needed, attempt to de-escalate as pain control improves prior to discharge.

| Recommended Pain Management Plan | | | | |
| --- | --- | --- | --- | --- |
| Scheduled Multimodal Analgesics | | | | |
| **Class** | **First 24-48 hours** | **Transition to PO** | **Weaning prior to discharge** | **Considerations** |
| Tylenol | 1000mg IV q 6 hours x 4 doses | 1000mg PO q 6 hours | Should be continued | Max 4G in 24 hours |
| NSAIDS | Toradol 15/30mg IV q 6 hours x 4 doses | * Toradol 10mg PO q 6 hours x 5 days * Ibuprofen 600mg PO q 6 hours * Naproxen 500mg q 12 hours * Naproxen 250mg q 12 hours for > 65 years | Aim to wean to prn | Monitor GFR |
| Antispasmodic | Methocarbamol 1000mg IV q 8 hours x 3-6 doses | * Methocarbamol 750 mg PO q 8 hours * Methocarbamol 500 mg PO q 6 hours for >65 years * Metaxolone 800mg PO q 8 hour * Cyclobenzaprine 5mg PO q 8 hours | Aim to wean to prn or discontinue while inpatient | * Sedating effects and cross reactions with other medications * Consider Baclofen 5mg PO q 8 hours for refractory spasms |
| Gabapentinoid | Pregabalin 75mg PO q 8 hours x 48 hours | Gabapentin 300mg PO q 8 hours | Can be continued | Sedating effects and rarely depression |
| Other | Lidocaine Patches 5%  Up to 3 patches |  | Should not be prescribed on discharge\* | Must have 12 hours off in each 24 hour period  \* Usually not covered by insurance, but patients can buy over the counter. |
| PRN Analgesics for Breakthrough | | | | |
| Opioid | * Dilaudid 0.25-0.5mg IV q 6 hours prn * Morphine 2-4mg IV q 6 hours prn | * Tramadol 100mg PO q 6 hours prn * Tramadol 50 mg PO q 6 hours prn if renal insufficiency or > 65 years * Oxycodone 5mg PO q 6 hours prn | Wean dose and frequency as able prior to discharge | Avoid Morphine in patients with renal insufficiency |
| Adjunct Medications | | | | |
| Bowel Regimen | * Docusate 100mg PO q 12 hours * Senna 17.2mg PO qHS * Polyethylene glycol 17mg q 12 hours * Bisacodyl Suppository prn | * Docusate 100mg PO q 12 hours * Senna 17.2mg PO qHS * Polyethylene glycol 17mg q 12 hours | Wean with return of regular bowel function | Continue bowel regimen for duration that patient is taking opioids  Chewing sugar-free gum can improve return of bowel function in NPO patients |
| Antiemetics | * Ondansetron 4-8mg IV q6hr prn * Promethazine PO or PR 12.5-25mg q6hr prn * Scopolamine patch | * Ondansetron 4-8mg PO or SL q 6 hours prn * Promethazine PO 12.5-25mg q 6 hours prn |  | Trend QTc if up-titrating |

**B. Regional Anesthesia**

* Regional analgesia is an adjunct to the multimodal pain medications and is considered a best practice in management of trauma patients.
* Recommend an Anesthesiology-led Acute Pain Service to administer regional anesthesia “blocks” and to monitor the patients in the peri-procedure and post-operative periods.
* Continuous regional analgesia is preferred to a single injection technique when pain is expected to last beyond 12 hours.

|  |  |
| --- | --- |
| **Injury Pattern** | **Potential Block** |
| Mandible fracture | Inferior alveolar (needs to be performed immediately preoperatively—not an option in non-operative fractures or if already in MMF) |
| Clavicle fracture | Superficial cervical plexus |
| Distal clavicle, scapula, proximal humerus | Interscalene (causes unilateral diaphragm paresis.  Axillary nerve and suprascapular nerve blocks an alternative in patients with respiratory insufficiency). Also causes Horner syndrome. |
| Injury lower than mid-humerus | Supraclavicular (50% diaphragm paralysis rate)  Infraclavicular (25% diaphragm paralysis rate)  Axillary nerve |
| Rib fractures | Serratus (lateral rib fractures)  Paravertebral blocks  Consider thoracic epidural |
| Sternal fractures | Transverse thoracic |
| Status post laparotomy | Rectus sheath  Quadratus lumborum |
| Lower extremity long bone fractures | Femoral  Fascia iliaca  Lateral femoral cutaneous  Sciatic (subgluteal, popliteal)  Adductor canal  Ankle blocks |

* For thoracic and abdominal pain, epidural and paravertebral blocks are comparably effective and provide superior analgesia compared to systemic opioids.
* If concern for possible compartment syndrome, avoid upper and lower extremity blocks.
* Local Anesthetic Systemic Toxicity – patients should be monitored for symptoms in the immediate post procedure period, and lidocaine patches should be avoided in conjunction with blocks due to increased risk.
* Strongly Recommend hospital support and resource commitment to provide acute pain services 24/7 to limit the use of opioids whenever possible
* Potential regional anesthesia options:

1. **Discharge Planning:**
   * At discharge all prescriptions should be given based on the inpatient regimen specifically targeted to the types of pain patient is experiencing.
   * Opioid pain medications should be prescribed for no more than 72 hours post discharge, and the plan to wean from opioids should be discussed with the patient prior to discharge.
   * All other medications: patients should receive enough pain medications to last until the follow up appointments.
   * Patients should be provided clear instructions on how to titrate their medications at home and on red flag symptoms that should be reported to their provider.
2. **Discussion Points for In-Patients**

* All narcotics can cause some degree of itching, sedation, constipation and nausea.
* Lidocaine patches are not prescribed at discharge because they are not covered by most insurances. However, they are readily available over the counter.

***Goals***

* *Pain comes in many ways and requires different patient-specific treatment methods. Trauma and Acute Care Surgery is using multi-modal pain management, a strategy that involves the use of more than one medication that acts in different ways in the body to lessen the pain. This approach aims to lower pain while decreasing side effects and minimizing opioid use, which ultimately improves patient care and recovery time.*
* *Our goal involves the following several general steps to manage your pain:*
  + *Assess your type of pain*
  + *Choose the right medications at the right dose and at the right time*
  + *Review the effectiveness the treatment and side effects that you may experience*
  + *Review the process until your pain is managed with minimal side effects*
* *The purpose is to make your pain more manageable by using a multi-modal pain management approach.*
* *When your pain is controlled, you will have the ability to engage in your daily activities, participate in physical and occupational therapy, and promote early healing.*

***Types of Pain***

***Inflammation:*** *stiffness, aching, increased warmth and swelling*

*Examples of medications include ibuprofen (Motrin), acetaminophen (Tylenol), and ketorolac (Toradol)*

***Nerve pain:*** *pinprick, sharp, burning, tingling sensation*

*Examples of medications include gabapentin (Neurontin) and pregabalin (Lyrica), Lidocaine Patch*

***Muscle spasm:*** *cramping, stabbing, radiating, muscle tightening*

*Examples of medications include methocarbamol (Robaxin), metaxolone (Skelaxin), cyclobenzaprine (Flexeril)*

***Opioids***

*Multiple types of pain medications are prescribed which use different pathways to minimize/avoid opioid use, and possible addiction*

*Opioids are still prescribed, when necessary, because of their effectiveness in relieving many types of pain.*

*Examples of medications include fentanyl, morphine, oxycodone (Percocet), hydrocodone (Norco), methadone, and tramadol (Ultram)*

***Possible Side Effects of Opioid Medications\****

|  |  |  |  |
| --- | --- | --- | --- |
| *Upset stomach* | *Ulcers* | *Increased bleeding* | *Dizziness* |
| *Sleepiness* | *Headache* | *Dry mouth* | *Nausea* |
| *Constipation* | *Mental confusion* | *Skin flushing* | *Addiction* |

*\*Any of these side effects in excess may result in a longer recovery and delay in discharge from hospital.*

**D. Suggested Language for Patient Education at Discharge**

***How should I take my pain medication?***

*You have been given several pain medications. The medications are all at safe doses and work well together to provide pain relief while minimizing side effects. General guidelines are as follows:*

*Tylenol = every 6hrs while awake*

*Naprosyn = twice a day*

*Tramadol = every 6hrs while awake*

*Oxycodone = It may be taken as 1 or 2 tablets up to every 4 hours as needed. If not needed, it is not necessary to take. Most patients take this medication a few times daily including 30 minutes prior to physical therapy and bed time.*

*Gabapentin = Before bed*

*If your physician has prescribed a different pain medication regimen, it will be noted on your discharge sheet from the hospital.*

***While on narcotic pain medication, please refrain from:***

*Driving*

*Operating Heavy Machinery/Power Tools*

*Drinking alcohol*

*Staying by oneself*

*Making important decisions or signing legal documents*

***How do I wean off my pain medication?***

*To begin weaning, you should begin by trying to take oxycodone as needed. Once you are no longer requiring this medication on a regular schedule reduce the dose and frequency you take it. For instance, try decreasing the number of times you take Ultram (Tramadol) and take only as needed. Try taking Oxycodone only at night for one week and then not at all. You will begin to identify which medications work best for you and when you need them most. Once you no longer require the Oxycodone decrease the amount and frequency of "base line" medications if your pain is controlled. Tylenol and Naprosyn should be the last medications you wean off.*

***What if one of the pain medications makes me feel bad?***

*If one of the medications upsets your stomach or makes you feel "spacey" it is okay to stop that medication. Continue to take those medications you can tolerate. The addition of Tylenol to the regimen is also a great help for many patients who cannot tolerate one or more of the prescription pain medications. Remember, the goal is to keep you comfortable.*

***Why am I constipated?***

*It is common to be constipated after surgery and is related to your anesthetic and your pain medication. You were given Colace, a stool softener medication, upon discharge from the hospital. You are also encouraged to drink an 8 ounce glass of water 8 times daily. You may also utilize any dietary or over the counter medication (Metamucil or other dietary fibers) that have helped you in the past.*

***ADDITIONAL OVER THE COUNTER MEDICATIONS***

*ASA 325 mg once daily if NOT TAKING ANTI-INFLAMMATORY or BLOOD THINNER*

*Docusate 100mg daily (while taking pain medication)*

*Multivitamin 1 tab daily*

*Vitamin D 800mg daily*

*Vitamin C 500mg daily x 30 days*

***What are my pain medications? (See you discharge medication list for specifics)***

*Tylenol - This is your first line (BASE LINE) of pain control and should always been taken if in pain*

*Naprosyn - Works to strength Tylenol and decrease inflammation (BASE LINE)*

*Tramadol - Take with Tylenol for moderate pain*

*Oxycodone - Strong opioid, use as a \*rescue\* pain medication if the first 2 medications aren't working (Take it with the first 2)*

*Gabapentin - Take in the short term to help with nerve pain*

**E. Alternative Pain Management Appendix**

**Life Care Specialist**

* + Specialty training to provide behavioral interventions and work to develop personalized pain management strategies to avoid potential opioid misuse
  + Provide patients with opioid education
  + Behavioral Pain management strategies including Community Resiliency Model, Progressive Muscle Relaxation, and diaphragmatic breathing
  + Assess the risk of substance misuse using the Opioid Risk Tool and provide additional information for mental health as needed.

**Non Medication Alternatives**

* Cryotherapy – ice applications to reduce pain and swelling
* Mindful Meditation - first take a deep breath and use your five senses to ground yourself
  + Look – look around the room for 5 things you can see and name them out loud
  + Feel – pay attention to your body and say four things you can feel out loud.
  + Listen – listen for 3 sounds around you and say them out loud
  + Smell – name 2 things you can smell. If you can’t smell anything at the moment, then choose your 2 favorite smells.
  + Taste – Say one thing you can taste. If you can’t taste anything, then name your favorite thing to taste.
* Breathing Techniques - use this simple technique to help relieve stress
  + Inhale through your nose for 4 seconds
  + Hold the breath for 4 seconds
  + Exhale through your mouth for 4 seconds
  + Repeat 3 more times
* Sleep – quality sleep promotes healing and reduces pain
  + Lowering lights as evening progresses
  + Following mindfulness and progressive relaxation exercises
  + Not eating heavy meals or spicy food 3 hours before bedtime
  + Avoiding caffeine and nicotine 4 to 6 hours before bedtime
  + Not watching the clock at bedtime
  + Using deep breathing techniques
* Acupressure
  + Pain or Headache
    - The L14 point is found between the thumb and index finger, where the muscle meets the bones.
    - Use the thumb and index finger of one hand to locate point on the opposite hand
    - Relax the hand
    - Massage the point in a circular motion for 30 seconds
    - Switch hands
    - Relax by breathing deeply through the exercise
  + Anxiety
    - Massage the Shen Men Point located on the upper half of the ear.
    - Simply apply firm pressure with your index finger on the front and thumb on the back of your ear
* Music – listening to music can positively affect your brain and provide comfort from pain
* Express yourself – Art and writing can be effective distraction from pain. Express your feelings and life experiences with adult coloring books, journaling, word games, doodling, or writing stories.
* Aromatherapy - use of essential oils absorbed through the skin or olfactory systems

**References:**

* TQIP Pain Management Guideline

https://www.facs.org/media/exob3dwk/acute\_pain\_guidelines.pdf

* Collaboration with Georgia trauma centers multi-modal pain guidelines

**Appendix:**

**Diagram

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