

Pharmacological interventions for patients experiencing acute post-operative pain

Samantha, Faith, RJ, and Swati

Why do we use several pharmacological interventions adjunctively to treat acute post-operative pain?

Pain

What is pain?

It is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.

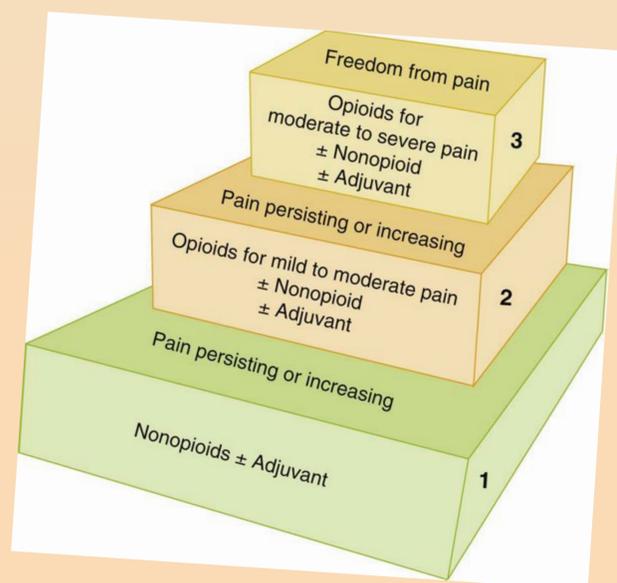
What are goals for postoperative pain management?

- To increase a patients quality of life
- To facilitate a full and healthy recovery
- To decrease the risk for complications (Impaired mobility - pneumonia, pressure ulcers, DVT)
- To allow for early discharge from the hospital

Review of Literature

WHO's 1986 Analgesic Ladder:

- 1-3: Non-opioid treatment (NSAIDS, Acetaminophen)
- 4-6: Weak Opioid treatment (Codeine, Oxycodone, Pentazocine)
- 6-10: Strong Opioid treatment (Morphine, Fentanyl, Hydromorphone)



Current treatment of post-operative pain

Opioid treatment:

- Bind to opioid receptors in the CNS
- Modulate the transmission of pain
- Affect the emotional aspects of pain.
- Most common type of pain management for post-operative patients.
- PCA: A way to give the patient better independence and control over the amount of medication they will receive.

Non-opioid treatment:

- They have a ceiling affect so eventually increasing the dose will produce no greater analgesia.
- Decrease the pain associated with inflammation by acting at the site of the injury (NSAIDS).
- Acetaminophen is a centrally acting medication that helps to control pain at the tissue level.

Adjuvant Analgesic Therapy:

- Antidepressants – Have analgesic properties at low doses. They block the transmission of nociceptive pain transmission by preventing the reuptake of serotonin and norepinephrine.
- Antiemetic – Helps to prevent and treat nausea and vomiting.
- Antiseizure – Helps prevent neuropathic pain by stabilizing the membrane of the neuron and preventing transmission.

New Discoveries

Types of Pain

Nociceptive:

- Damage to the somatic or visceral tissue
- Aching or throbbing pain
- Usually responsive to non-opioids (acetaminophen)

Neuropathic:

- Caused by damage to the nerve cells
- Burning, Shooting, Stabbing
- Treated with opioids

Application in Nursing Practice

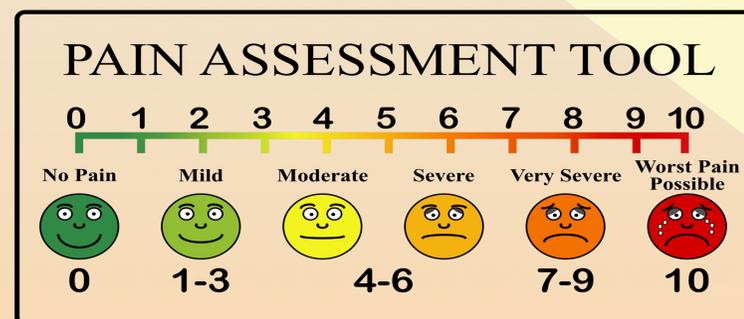
- Assess the patient's pain using PQRSTUV, to determine all aspect of the patient's pain experience & to treat it with the right medication.
- Assess the affect of the pharmacological intervention and if it accomplished the patients desired outcome or not.
- Advise the patient to ask for pain medication early so intense pain is avoided.
- Advise the patient to take their scheduled doses even if they are not currently experiencing intense pain.

How do these interventions affect our practice?

- Despite the amount of research and resources available on postoperative pain management, patients are still receiving unsatisfactory pain management.
- This is why it is importance to understand that pain is subjective and to provide the patient with there medications in a timely manner.
- Nurses must remember to consider the patient's culture, values, and perception of pain

From the research

- In the article "Efficacy of pregabalin in acute postoperative pain: A meta-analysis" Ho, K., Wang, Y., Zhang, J. (2011) prove that when using an adjunct medication such as pregabalin during treatment of postoperative pain, it causes a reduction in opioid consumption and opioid related adverse effects (nausea and vomiting) after surgery.
- The aim of the study to reduce post-op pain intensity
- Pregabalin (Lyrica) is a GABAergic anticonvulsant & depressant of the CNS; has similar hyperalgesic properties to gabapentin.
- They evaluated what the therapeutic perioperative dose was for pregabalin (Lyrica) in multiple studies and found that it is between 300-600mg



Conclusion

- By using a combination of pharmacological interventions we can more accurately provide pain management to patients by addressing multiple types of pain at once.
- By performing a thorough pain assessment and using our clinical judgement to determine what pharmacological interventions are necessary, we can move closer to achieving our post-operative pain management goals.

References

- Garimella, V., & Cellini, C. (2013). Postoperative pain control. *Clinics in Colon and Rectal Surgery*, 26(3), 191–196. <http://doi.org/10.1055/s-0033-1351138>
- Ho, K., Wang, Y. & Zhang, J. (2011). Efficacy of pregabalin in acute postoperative pain: A meta-analysis. *BJA: The british journal of anaesthesia*, 106(4), 454-462. <https://doi.org/10.1093/bja/aer027>
- Lewis, S. M., Heitkemper, M. M., & Dirksen, S. R. (2006). *Medical-nursing in Canada: Assessment and management of clinical problems*. Toronto: Elsevier Moseby.
- Raffa, R. B., & Pergolizzi, J. V. (2014). A modern analgesics pain 'pyramid'. *Journal Of Clinical Pharmacy & Therapeutics*, 39(1), 4-6. doi:10.1111/jcpt.12110
- Sheet, Checklist. "Checklist Of Nonverbal Pain Indicators (CNPI) Cheat Sheet". *Cheatography*. N.p., 2017. Web. 30 Jan. 2017.