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USAGE OF OPIODS IN POSTOPERATIVE PATIENTS

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ABSTRACT

Since 2 decades, there was an increase in the use of opioids and also opioid deaths, but at the same time the amount of the opioids prescribed to a surgical patient is also increased. Generally opioids are the key analgesics for treating moderate pain to severe pain after major surgeries. They are the substances which generally act on the opioid receptors to produce morphine-like effects. So they, primarily used for pain relief, including anaesthesia. The major aim of this review is to determine the postoperative opioid consumption in the surgical patients. The opiods are used in several surgeries as pain modifier. So, the main objective of this review is to characterize and also to categorise the postoperative opioid consumption for different type of surgeries. Some of the surgeries are given analgesic before the surgery also which is meant for preoperative pain relieving so; here also opiods play major role for the modifying of the pain There is variety of surgical operations where the opiods generally used after the post operation includes abdominal surgery, orthopaedic replacement surgeries, tooth extraction, and other dermatologic procedures. The majority of the patients generally consume less than 15 pills after their surgery as per the theoretical literature study.

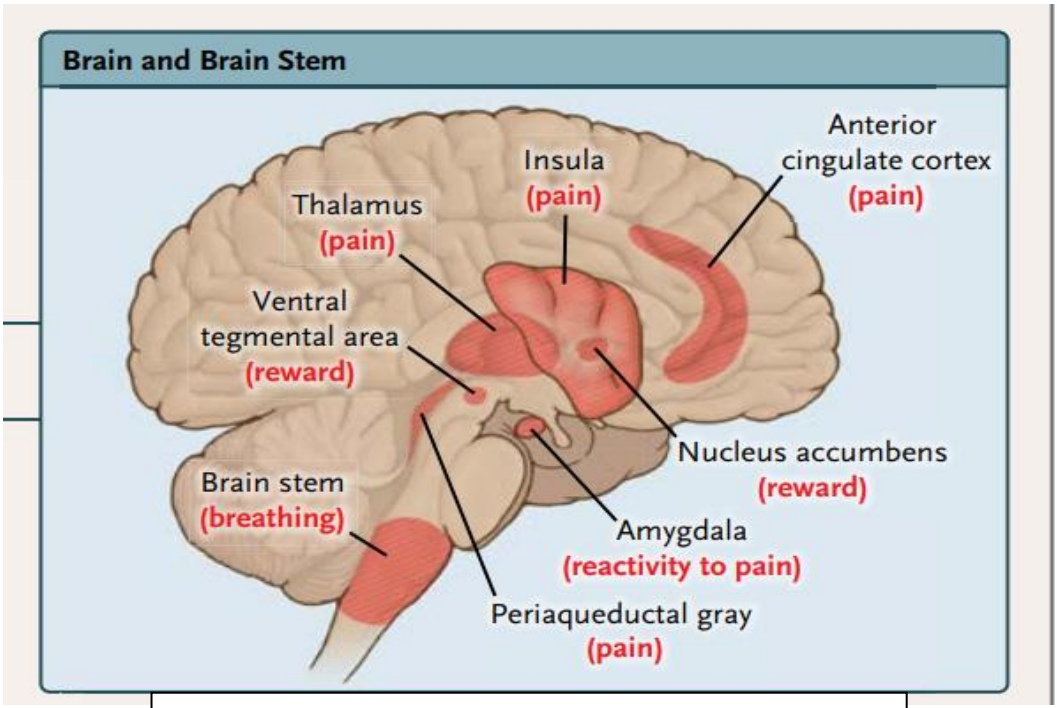
KEYWORDS: Postoperative pain, opiods usage, surgery patients.

INTRODUCTION

OPIODS

They are substances which act on opioid receptors to produce morphine-like effects. They are primarily used for pain relief, including anaesthesia. Extremely potent opioids like carfentanil is only approved for veterinary use. Opioids are also frequently used non-

medically for their euphoric effects or to prevent withdrawal. Some of the earlier studies have been indicated that use of the continuous opioid infusions for the patients having postoperative pain may increase analgesic dosage requirement when compared with intermittent dosing technique. The major risk that is associated with the opiod infusions is ventilator depression.

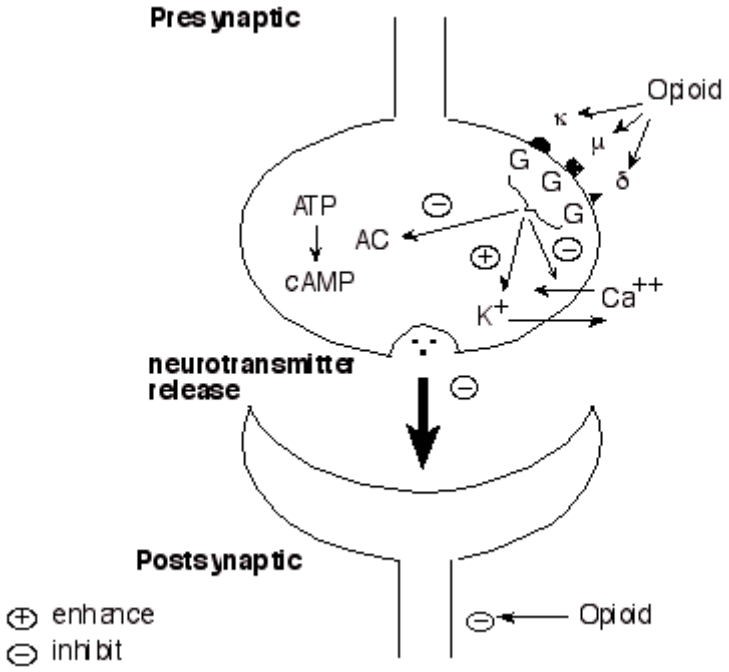


LOCATION OF MU-OPIOD RECEPTORS

CLASSIFICATION OF OPIODS

- **Natural opiates:** morphine, codeine, thebaine, Salvinorin A
- **Esters of morphine opiates:** diacetylmorphine, nicomorphine, desomorphine, acetylpropionylmorphine
- **Semi-synthetic opioids:** hydromorphone, hydrocodone, oxycodoneoxymorphone
- **Fully synthetic opioids:** fentanyl, methadone, tramadol
- **Endogenous opioid peptides:** endorphins, enkephalins, dynorphins, endomorphins.

MECHANISM OF ACTION



USES

Post operative pain in surgeries, Acute pain, Chronic non-cancer pain, Cough, Diarrhoea and constipation, Shortness of breath.

SURGERY

Surgery is a medical specialty that uses operative manual and instrumental techniques on a patient to investigate or treat a pathological condition such as a disease or injury, to help improve bodily function or appearance or to repair unwanted ruptured areas.

POST-OPERATIVE CARE

Postoperative care is the care you receive after a surgical procedure. The type of postoperative care you need depends on the type of surgery you have, as well as your health history. It often includes pain management and wound care. Postoperative care begins immediately after surgery.

PRE-OPERATIVE EDUCATION AND PERIOPERATIVE PAIN MANAGEMENT PLANNING

1. The clinicians first use a pain assessment scale to track responses to postoperative pain treatments and adjust treatment plans accordingly
2. Then clinicians will adjust the pain management plan based on the adequacy of pain relief

3. Then clinicians will conduct a preoperative evaluation which majorly includes that assessment of physical and mental condition, concomitant medicines, history of chronic pain, substance abuse etc.,
4. The instructions are given to the parents (or other adult caregivers) of children who undergo surgery in an appropriate methods for the assessment of pain and also for the counselling on administration of analgesics.
5. The clinicians will provide patient and family-centred and will educate the patient about the treatment options for the management of postoperative pain.
6. The oral over intravenous (I.V) administration of the opioids for postoperative pain in the patients who can use the oral route are recommended.
7. Generally clinicians will avoid using administration of analgesics through IM route so; clinicians generally use I.V patient-controlled analgesia (PCA) for postoperative pain when there is a need of parenteral route.
8. The clinicians will provide analgesics for postoperative pain are as follows,

- Acetaminophen (or) NSAIDs as a multimodal analgesia (childrens and adults)
- Oral celecoxib in adult patients without contraindications
- Gabapentin or pregabalin(component of multimodal analgesia
- IV lidocaine infusions for adults who undergo open and laparoscopic abdominal surgery.
- Sometimes addition of clonidine is used as an adjuvant for the prolongation of analgesic effect.

9. After the analgesic was decided the clinicians will consider the surgical site as specific peripheral region with aesthetic techniques in both adults and children.
10. clinicians will offer neuraxial analgesia for the major thoracic and abdominal procedures, particularly in the patients who are at high risk for the cardiac complications, pulmonary complications, or prolonged ileums.
11. then the clinicians will avoid the neuraxial administration of some substances in the post operative pain such as, magnesium, benzodiazepines, neostigmine, tramadol, ketamine.
12. Then the clinicians will provide the appropriate monitoring for the patients who received the neuraxial interventions for perioperative analgesia which is meant for before surgery.
13. The facilities that re include in neuraxial analgesia and] peripheral blocks performed will have some policies and also some procedures for the support of the patient's life style and their safe delivery which is done by the trained individuals to manage all these procedures.

14. Finally clinicians will provide the education to all patients such as adults, children's and also for the primary caregivers of the patient about the management of the pain, plan of the treatment which may include about tapering of doses of the analgesics and changing of analgesic, uses of that particular analgesic and everything about the plan after the hospital discharge.

ROLE OF OPIODS IN SURGERIES FOR CONTROLLING POST OPERATIVE PAIN

Postoperative opioid use

Examples of the opiods are codeine, morphine, oxycodone, hydromorphone, meperidine, oxymorphone, methadone, Transdermal fentanyl, These are the drugs which were sustained - release formulations. The Early post-operative discharge opioids use was defined by one or more prescriptions of about opioids in a span of 1 to 90 days after the surgery happend. The 90 day use of opiods was defined as the prolonged opioid use which is considered to be more conventional than 60 day time interval which is commonly used by the International Associations.

Some procedures includes opiods used for post operative pain and also for preoperative pain relief are as follows,

- cholecystectomy and colectomy, were committed with the persistent opioid use; these surgeries are generally related to the high levels of preoperative pain and inflammation with of the visceral and central sensitization, so all these factors will sensually predispose to the patient to use opiods as a long-term pain reliever which may show some impact as a side effect because of prolonged use of the opiods.
- spinal fusion and pectus repair, has proved that there is no higher risk if the opiods are used for prolonged time period. Patient- factors, such as past-year SUD, chronic pain diagnoses, and preoperative opioid fill, had a very important relation with the persistent use of the opiods for about 3 to 6 months after the surgery
- Opioids are generally highly effective for the acute postoperative pain relief and also for the preoperative pain relief sometimes;
- However; the prolonged persistent use of the opiods for the post operative pain and the preoperative pain in some of the surgeries was placing the adolescents and the children's who are undergoing the surgeries are placed into a vulnerable situation it was meant to be as the higher risk for the patients.

OPIOD PRESCRIPTION AND OPIOD USE IN DIFFERENT SYRGERIES

S.NO	TYPE OF SURGERIES	DIFFERENT SURGICAL PROCEDURES
1.	**Orthopaedic and neurosurgical procedures**	Hard tissue: ORIF, arthroplasty, rotator cuff Soft tissue: carpal tunnel, ganglion excision, trigger finger release, cubical tunnel release, arthroscopy
2.	**Thoracic and abdominal procedures**	Post C-section, Post thoracic surgery, Major open urologic, Major laparoscopic urologic, Minor open urologic, Endoscopic urologic, vaginal hysterectomy, robotic-assisted laparoscopic supracervical hysterectomy, colpoclesis, sacrocolpopex Partial mastectomy Laparoscopic cholecystectomy
3.	**Miscellaneous minor procedures**	Tonsillectomy Musculoskeletal Minor abdominal, genitourinary tract, or peripheral procedures

SUPPLEMENTAL GUIDANCE ON PRESCRIBING OPIOIDS FOR POSTOPERATIVE PAIN

In addition to prescribing the appropriate amount of opioids for a given procedure, it is important that the surgeon provide education for the patient and caregivers about the realistic expectations for postoperative pain management, functional recovery activities, and timely reduction in opioid use as well as providing instruction for safe storage and disposal of opioids as specified in the 2015 AMDG Guideline here.

At Time of Discharge Clinical Recommendations Although opioids are often indicated to manage severe acute postoperative pain. Increased duration of initial opioid prescription has also been associated with increased incidence of chronic opioid use and risk of opioid misuse and overdose. There is no optimal number of pills for a given procedure, but the following recommendations are intended to serve as a general framework for managing postoperative pain, while minimizing leftover pills.

TYPE I – EXPECTED RAPID RECOVERY.

Dental procedures such as extractions or simple oral surgery (e.g., graft, implant).	• Prescribe a nonsteroidal anti-inflammatory drug (NSAID) or combination of NSAID and acetaminophen for mild to moderate pain as first-line therapy. • If opioids are necessary, prescribe ≤3 days (e.g., 8 to 12 pills) of shortacting opioids in combination with an NSAID or acetaminophen for severe pain. Prescribe the lowest effective dose strength. • For more specific guidance, see the Bree Collaborative Dental Guideline on Prescribing Opioids for Acute Pain Management.
Procedures such as laparoscopic appendectomy,	• Prescribe non-opioid analgesics (e.g., NSAIDs

inguinal hernia repair, carpal tunnel release, thyroidectomy, laparoscopic cholecystectomy, breast biopsy/lumpectomy, meniscectomy, lymph node biopsy, vaginal hysterectomy.	and/or acetaminophen) and non-pharmacologic therapies as first-line therapy. • If opioids are necessary, prescribe ≤3 days (e.g., 8 to 12 pills) of shortacting opioids in combination with an NSAID or acetaminophen for severe pain. Prescribe the lowest effective dose strength.

TYPE II – EXPECTED MEDIUM TERM RECOVERY.

Procedures such as anterior cruciate ligament (ACL) repair, rotator cuff repair, discectomy, laminectomy, open or laparoscopic colectomy, open incisional hernia repair, open small bowel resection or enterolysis, wide local excision, laparoscopic hysterectomy, simple mastectomy, cesarean section.	• Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy. • Prescribe ≤7 days (e.g., up to 42 pills) of short-acting opioids for severe pain. Prescribe the lowest effective dose strength. • For those exceptional cases that warrant more than 7 days of opioid treatment, the surgeon should re-evaluate the patient before a third prescription and taper off opioids within 6 weeks after surgery.

TYPE III – EXPECTED LONGER TERM RECOVERY.

Procedures such as lumbar fusion, knee replacement, hip replacement, abdominal hysterectomy, axillary lymph node resection, modified radical mastectomy, ileostomy/colostomy creation or closure, thoracotomy.	• Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy. • Prescribe ≤14 days of short-acting opioids for severe pain. Prescribe the lowest effective dose strength. • For those exceptional cases that warrant more than 14 days of opioid treatment, the surgeon should re-evaluate the patient before refilling opioids and taper off opioids within 6 weeks after surgery.

PATIENTS ON CHRONIC OPIOID ANALGESIC THERAPY

Elective surgery in patients on chronic opioid therapy	• Prescribe non-opioid analgesics (e.g., NSAIDs and/or acetaminophen) and non-pharmacologic therapies as first-line therapy. • Resume chronic opioid regimen if patients are expected to continue postoperatively. • Follow the recommendation above for prescribing the duration of short acting opioids following a particular surgery (e.g., 3, 7, or 14 days). An increased number of pills per day may be expected compared to an opioid naïve patient. Patients on chronic opioid therapy should have a similar tapering period as opioid naïve patients postoperatively. Prescribe the lowest effective dose strength. • For those exceptional cases that warrant more than 14 days of opioid treatment after hospital discharge, the surgeon should re-evaluate the patient before refilling opioids and taper off opioids within 6 weeks after surgery to no higher total daily dose than was present pre-operative

CONCLUSION

Post – operative pain is the major important aspect for every surgical procedure, so there is a need of injection of the opiods for the pain relief. There is variety of surgical operations where the opiods generally used after the post operation includes abdominal surgery, orthopaedic replacement surgeries, tooth extraction, and other dermatologic procedures.

So, opiods are very necessary for the procedures of every surgery, but if there is a prolonged use of the opiods more than 90 days it will be harmful to the patient, so patient and physician must be careful in prescribing oral opiods for the pain modification.

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