UNIT VIII
NARCOTIC ANALGESIA
**Objective**

- Review the definitions of Analgesic, Narcotic and Antagonistic.

- List characteristics of Opioid analgesics in terms of mechanism of action, indications for use and major adverse effects.

- Explain why higher doses of opioid analgesics are needed when the drugs are given orally.

- Discuss principles of therapy for nursing process for using opioid analgesics.
• Discuss signs and symptoms of opioid overdose, its withdrawal and treatment of each.
• Illustrate client teaching regarding safe and effective use of opioid analgesics.
• Discuss the nursing care, including client teachings associated with narcotics.
• Differentiate between non-narcotic and narcotic analgesics.
**Analgesics**

- Medications that relieve pain without causing loss of consciousness
- These include nonsteroidal anti-inflammatory drugs (NSAIDs). Aspirin and acetaminophen are two of the most widely used **analgesics** and are effective for mild to moderate headache and pain of musculoskeletal origin.
- **Opioid analgesics** relieve pain by acting directly on the central nervous system.
Opioid Analgesics

- Codeine sulfate
- Meperidine HCl (Demerol)
- Methadone HCl (Dolophine)
- Morphine sulfate
Narcotics

- Narcotics (also called opioid pain relievers) are used only for pain that is severe and is not helped by other types of painkillers. When used carefully and under a doctor's direct care, these drugs can be effective at reducing pain.
Opioid Analgesics: Mechanism of Action

Three classifications based on their actions:

- Agonist
- Partial agonist
- Antagonist
**Agonists**

- Bind to an opioid pain receptor in the brain
- Cause an analgesic response (reduction of pain sensation)
Partial Agonists

- Bind to a pain receptor
- Cause limited actions, not as pronounced as the actions produced by an agonist
- Also called agonist-antagonists
Antagonists

• Reverse the effects of these agents on pain receptors

• Bind to a pain receptor and exert no response

• Also known as competitive antagonists

• Endorphins
Opioid Receptors

Types of opioid receptors

- Mu
- Kappa
- Delta
<table>
<thead>
<tr>
<th>Receptor Type</th>
<th>Prototypical Agonist</th>
<th>Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mu</td>
<td>morphine</td>
<td>Supraspinal analgesia, respiratory depression, euphoria, + + sedation</td>
</tr>
<tr>
<td>Kappa</td>
<td>ketocyclazocine</td>
<td>Spinal analgesia, + + + + + sedation, miosis</td>
</tr>
<tr>
<td>Delta</td>
<td>enkephalins</td>
<td>Analgesia</td>
</tr>
</tbody>
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Opioid Receptors and Their Characteristics
**Opioid Analgesics: Indications**

- Main use: to alleviate moderate to severe pain
- Often given with adjuvant analgesic agents to assist the primary agents with pain relief
  - NSAIDs
  - Antidepressants
  - Anticonvulsants
  - Corticosteroids
Opioids are also used for:

- Cough center suppression
- Treatment of diarrhea
- Balanced anesthesia
Opioid Analgesics: Contraindications

- Known drug allergy
- Severe asthma or other respiratory insufficiency
- Elevated intracranial pressure
- Pregnancy
Opioid Analgesics: Side Effects

- Euphoria
- CNS depression
- Nausea and vomiting
- Respiratory depression
- Urinary retention
- Constipation
- Itching
Analgesics: Nursing Implications

- Before beginning therapy, perform a thorough history regarding allergies and use of other medications, including alcohol, health history, and medical history
- Obtain baseline vital signs and I&O
- Assess for potential contraindications and drug interactions
• Perform a thorough pain assessment, including pain intensity and character, onset, location, description, precipitating and relieving factors, type, remedies, and other pain treatments
  • Assessment of pain is now being considered a “fifth vital sign”
• Be sure to medicate patients before the pain becomes severe as to provide adequate analgesia and pain control
• Pain management includes pharmacologic and non-pharmacologic approaches; be sure to include other interventions as indicated
• Patients should not take other medications or OTC preparations without checking with their physician
• Instruct patients to notify physician for signs of allergic reaction or adverse effects
• Oral forms should be taken with food to minimize gastric upset
• Ensure safety measures, such as keeping side rails up, to prevent injury
• Withhold dose and contact physician if there is a decline in the patient’s condition or if VS are abnormal, especially if respiratory rate is less than 12 breaths/minute
• CHECK DOSAGES CAREFULLY
  – Follow proper administration guidelines for IM injections, including site rotation
  – Follow proper guidelines for IV administration, including dilution, rate of administration, and so forth.
• Constipation is a common side effect and may be prevented with adequate fluid and fiber intake
• Instruct patients to follow directions for administration carefully, and to keep a record of their pain experience and response to treatments
• Patients should be instructed to change positions slowly to prevent possible orthostatic hypotension
\[\text{Cont...}\]
Monitor for Side Effects

- Should VS change, patient’s condition decline, or pain continue, contact physician immediately
- Respiratory depression may be manifested by respiratory rate of less than 12/minute, dyspnea, diminished breath sounds, or shallow breathing
Monitor for Therapeutic Effects

- Decreased complaints of pain
- Decreased severity of pain
- Increased periods of comfort
- Improved activities of daily living, appetite, and sense of well-being
- Decreases fever
**Opioids**

- Opioids are substances derived from the opium poppy, or synthetic analogue.

Examples are:
- Morphine,
- Heroin,
- Oxycodone
- Methadone.
Opium Poppy Plant
Opioids that cause overdoses
Common opiates

- Heroin
- Morphine
- Oxycodone
- Hydrocodone
- Methadone
- OxyContin
- Vicodin
- Percodan
- Percocet
- Lorcet
**Oxycodone**

- Available form:
  Solution-oral: 5mg/5ml
  Tablets 5mg

- Action:
  Narcotic analgesic.
  Relief moderate to severe pain.

**Morphin**

- Available forms:
  Injection, solution, tablets.

- Adult dosage:
  4 to 10mg diluted, and injected over 5 minutes.

- Action:
  Narcotic analgesic relief of severe pain.
Opioid overdose

- Opioid overdose can be identified by a combination of three major signs and symptoms.
  - Pin point pupil
  - Respiration slow/shallow
  - Unconsciousness
Other symptoms include:

- Awake but unable to talk,
- Face very pale and clammy,
- Fingernails and lips turn blue or purplish
- the skin tone turns bluish purple,
- Pulse (heartbeat) is slow
- Unresponsive to outside stimulus
Opioid Overdose
Signs & Symptoms

Breathing will be slow or absent

Lips and nails are blue

Person is not moving

Person may be choking

You can hear gurgling sounds or snoring

Can’t be woken up

Skin feels cold and clammy

Pupils are tiny
Main symptoms of Hydrocodone overdose

Central
- Sleepiness
- Loss of consciousness

Pupils
- Widening

Skin
- Coldness
- Clamminess
- Blueness

Breathing
- Slowed
- Shallow
- Stopped

Muscular
- Seizures
Opiate withdrawal

- Opiate withdrawal refers to the wide range of symptoms that occur after stopping or dramatically reducing opiate drugs after heavy and prolonged use.
Early symptoms of withdrawal include:

- Agitation
- Anxiety
- Muscle aches
- Increased tearing
- Insomnia
- Runny nose
- Sweating
Late symptoms of withdrawal include:

- Abdominal cramping
- Diarrhea
- Dilated pupils
- Nausea
- Vomiting
Treatment of Opioid Overdose

- Treatment involves supportive care and medications. The most commonly used medication, clonidine, primarily reduces anxiety, agitation, muscle aches, sweating, runny nose, and cramping.

- For some time, one of the standard treatments for drug overdoses used at hospitals is the drug Naloxone. **Naloxone** is an opiate/opioid antagonist. It expels the natural opiates and synthetic opioids from the opioid receptors and blocks them.
Other medications can treat **vomiting** and **diarrhea**. General **supportive measures** for opioid intoxication are as follows:

Assess patient to **clear airway**.
Provide **support ventilation**, if needed.
Assess and support **cardiac function**.
Provide **IV fluids**.

Frequently **monitor** the vital signs and cardiopulmonary status until the patient has cleared opioids from the system.
**Nalaxone**

**Available Form:**
- Injection, solution, Nasal Spray.

**Action:**
Narcotic Antagonist; onset of action 2mints i/v , 5mints SC/IM

Adult dosage; 0.4 to 2mg I/V if no response found repeat 10mg.
Endotracheal dose 0.8mg
Teaching regarding safe and effective use of Opioid

- Doctor may prescribe opioids to be taken "as needed" in case you experience pain.
- Teach client following:
  - While you're on opioid pain medications, check in with your doctor regularly. Your doctor will need to know:
    - How your pain is responding to the drug
    - Any side effects of drugs
• Whether you have any potential interactions or medical conditions that could increase your risk for side effects, such as sleep apnea, alcohol use, or kidney problems

• Taking the drug properly.

• Never change or stop taking any opioid medicine without first checking with your doctor.
• Teach client that When you're ready to stop taking opioids,

• Doctor may help wean you off them slowly, if you have taken them for an extended period of time, to give your body time to adjust.

Otherwise, you may have withdrawal symptoms.
**Difference between Narcotic Analgesics & Non-Narcotic Analgesics**

**Narcotic Analgesics**
- Act centrally
- Addiction, dependence, tolerance
- Schedule II/III controlled drugs
- **Adverse effects:**
  - sedation, respiratory depression, constipation
- No anti-inflammatory effect

**Non-Narcotic Analgesics**
- Act peripherally
- Not habit-forming
- Not controlled drugs
- **Adverse effects:**
  - gastric irritation, bleeding problems, renal toxicity
- Anti-inflammatory effect
- Ceiling effect - increase in dose does not increase analgesia but increases side effect
References:

- The care of the medical Patients, sixth Edition.
ANY questions?