Opioid Analgesics

Week 19
Analgesic Vocabulary

• Analgesia
• Narcotic
• Opiate
• Opioid
• Agonist
• Antagonist
Narcotic Analgesics

• Controlled substances
• Opioid analgesics derived from poppy
• Opiates include morphine, codeine
Opioids

• Natural substances
  – Morphine
  – Codeine

• Semi-synthetic
  – Hydromorphone
  – Oxymorphone
  – Oxycodone

• Synthetic
  – Methadone
  – meperidine
Agonists and Antagonists
Endogenous Opioid Peptides

• Natural pain relief
  – Endorphins
  – Enkephalins
  – Dynorphines

• Receptor sites
  – Mu
  – Kappa
  – Delta
Action

Agonists: Bind well to receptor site

Partial Agonist: Binds to receptor site with limited response

Agonist-Antagonist: has properties of both the agonist and the antagonist

Antagonists: bind to the receptor site and cause no response. They reverse the action of agonist drugs.
Actions

• Agonists—bind to a receptor, causes response
• Partial agonists—bind to a receptor, limited response
• Mixed agonists-antagonists—properties of both agonists and antagonists
Agonist

- Binds to receptor
- Alters pain perception
- Depress respirations
- Depress cough
- Slow bowel motility
- Miosis
Adverse Reactions: Agonists

- CNS—euphoria, weakness, headache, pinpoint pupils, sedation, agitation
- Respiratory depression
- GI—dry mouth, biliary tract spasms
- Cardiovascular—peripheral circulatory collapse, tachycardia, bradycardia, palpitations
- GU—ureter and bladder sphincter spasms, retention or hesitancy
- Allergic—pruritus rash, urticaria
Cautions

• Opioid naïve
• Lactating women
• Renal or hepatic impairment
• Acute bronchial asthma
• Elderly
• Head injury
• Assessment
Morphine

• Prototype of strong opioid analgesics
• Standard
• Administration
• Pharmacologic effects
• Adverse Reactions
Uses

• Manage moderate to severe pain
• Preoperatively to relieve anxiety
• Support anesthesia
• Relieve anxiety in patients with PE
• Postoperative pain relief
• Opiate dependence
• Induce conscious sedation before procedures
Fentanyl

- Strong opioid analgesic
- High milligram potency
- Administered parenteral, transdermal, and transmucosal
- Primarily for induction and maintenance of surgical anesthesia
Meperidine

- Demerol
- Seldom used
- Active metabolite: normeperidine
- Toxicity: excitation, tremors, seizures
Methadone

- Pharmacologic properties similar to morphine
- PO
- Long duration of action
- Use: pain relief, treatment of opioid addiction
Codeine

• Use: Relief of mild to moderate pain
• Side effect limit dosing
• Tylenol #2, #3, #4
• Very effective antitussive
Synthetic Opioids

- Oxycodone
- Hydrocodone
- Propoxyphene
- Pentazocine (Talwin)
- Percocet/Percodan
- Vicodin
Agonist-Antagonist Opioids

- Pentazocine (Talwin)
- Nalbuphine
- Butorphanol
- Buprenorphine
Epidural Pain Management

- Labor and delivery
- Post op
- Cautions
- Position
Nursing Care of Epidural

- Monitor respiratory status
- Frequent VS
- Nothing injected into the epidural ports
- No heparin/lovenox
- Safety needs
- HOB elevated 30 degrees
Patient Controlled Analgesia

- Patient/family education
- Monitor respiratory status
- Advantages
- Safety issues
Transdermal System

- Remove system from package and immediately apply to skin of upper torso
- Press for 10 to 20 seconds with palm of the hand
- Remove system after 72 hours
- Rotate application site
Partial Agonist

- Agonist-Antagonist
- Do not use with pure agonist
- Maximal effect lower than pure agonist
Adverse Reactions: Agonist-Antagonists

• Symptoms of narcotic withdrawal in patients who are addicted to narcotics
• Sedation
• Nausea, vomiting
• Sweating, dry mouth
• Headache, vertigo
• Euphoria
Pain Concepts

- The patient is the best authority
- Equianalgesia
- Tolerance
- Dependence

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<th>Drug</th>
<th>Parenteral (mg)</th>
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<tr>
<td>30</td>
<td>Morphine</td>
<td>10</td>
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<tr>
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<td>7.5</td>
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<td>Fentanyl</td>
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<tr>
<td>200</td>
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<td>130</td>
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<tr>
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<td>Hydrocodone</td>
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Chronic Pain

• Use long acting/long half-life drugs
• Drugs scheduled ATC
• Monitor for severe anorexia in terminally ill
• Brompton’s cocktail
Assessment

• Prior to administration:
  – Pain level
  – VS: BP, HR, RR
  – Risk of abuse
Evaluation and Interventions

• Minimize adverse Effects
  – Respiratory depression
  – Sedations
  – Orthostatic hypotension
  – Constipation
  – Urinary retention
  – Emesis
  – Cough suppression
  – Miosis
Alternative Medicines

• Passionflower
  – Used in combination with other herbs to treat pain, anxiety, and insomnia
  – Said to promote relaxation, rest and sleep
  – Contains coumarin and may increase the risk of bleeding in those taking warfarin
  – Contraindicated for those taking MAOIs
You are caring for a patient receiving morphine sulfate subcutaneously for pain. Which nursing action would be included in the plan of care?

- Monitor patient’s temperature
- Encourage fluid intake
- Maintain the patient in a supine position
- Encourage patient to cough and deep breathe
You are caring for a patient with severe back pain for which codeine sulfate has been prescribed. Which of the following would the nurse include in the plan of care?

– 1. monitor for hypertension
– 2. restrict fluid intake
– 3. monitor bowel activity
– 4. monitor peripheral pulses
• Meperidine (Demerol) has been prescribed for your patient with pain. Which of the following would your monitor for as a side effect of the medication?
  – 1. hypertension
  – 2. bradycardia
  – 3. diarrhea
  – 4. urinary retention
You are caring for a patient receiving an opioid analgesic. Which of the following allergic reactions should you monitor for in this patient?

1. constipation
2. urticaria
3. palpitations
4. Facial flushing
The patient has been prescribed an opioid analgesic for relief of pain. What pre-administration assessments should the nurse perform before administering the medication?

1. Obtain patient’s blood pressure
2. Assess the intensity and location of pain
3. Monitor patient’s pulse rate
4. Assess patient’s respiratory status
Janice Wiggins is a 45-year-old African American woman. She is in the hospital for an elective hysterectomy. She is to receive morphine via a patient-controlled analgesia pump postoperatively.

1. How should the nurse instruct Mrs. Wiggins to use the pump during preoperative teaching?

2. After the surgery what information should be included in the nurse’s ongoing assessment and how often should the assessments be completed?

3. What situations should be immediately reported to the physician?
• **True/False**

• 1. When an opioid analgesic is administered with antihistamines respiratory depression takes place.

• 2. Slow GI motility and the resulting constipation are non-intended responses in opioid therapy.

• 3. A partial agonist binds to a receptor and causes no response.

• 4. Opioid analgesics should be administered cautiously in patients undergoing biliary surgery.

• 5. Morphine sulfate is the most widely used drug in the management of chronic severe pain.
• 1. _____________ is referred to as the "gold standard" in pain management.
• 2. The risk of bleeding increases when used in patients taking __________ and passion flower.
• 3. __________ removes all of the pain-relieving effects of the opioid and may lead to withdrawal symptoms or the return of intense pain.
• 4. __________ tablets should be swallowed whole and are not to be broken, chewed, or crushed.
• 5. Administration of morphine sulfate and __________ by the epidural route provides an alternative to the IM or oral route.