Narcotic/Non-narcotics
NAPNES Guidelines

Presented by
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Nonnarcotic Analgesics

- Relieve pain
- No physical dependency
- Types
  - Salicylates
  - Nonsalicylates
  - Nonsteroidal anti-inflammatory drugs (NSAIDs)

Nonnarcotic Analgesics

Salicylates

- Include aspirin (acetylsalicylic acid – ASA) and related drugs
- Actions - unknown
  - Analgesia
    - Inhibition of prostaglandins
  - Antipyretic
    - Reduces elevated body temperature
  - Anti-inflammatory effects
  - Inhibits platelet aggregation

Nonnarcotic Analgesics

Salicylates

- Uses
  - Relief of mild/moderate pain
  - Reduction of body temp
  - Treatment of inflammatory diseases
    - OA, RA
  - Reduction of MI risk in pts w/unstable angina
  - Reduction of CVA risk in men w/hx of TIAs
    - Not found effective in women

Nonnarcotic Analgesics

Salicylates

- Adverse effects
  - GI upset, heartburn, n/v, anorexia
  - GI bleeding
  - Allergic reaction – rare
  - **Salicylism** – salicylate toxicity
    - **Dizziness, tinnitus, impaired hearing**
      - **Mild, usually with chronic dosing**
    - **Mental confusion, respiratory depression, coma (large doses)**
    - **Reversible with dosage reduction**

Nonnarcotic Analgesics

Salicylates

- Salicylism
  - Other s/s – n/v, flushing, rapid deep breathing, tachycardia, diarrhea, drowsiness.
  - Adults: tinnitus and hearing loss
  - Children: hyperventilation and CNS effects
  - Effects arise when serum levels exceed 300μg/mL.
  - Metabolic acidosis and respiratory alkalosis may be present.

Nonnarcotic Analgesics

Salicylates

- Contraindications
  - Pregnancy – category D – may cause adverse fetal effects
  - Children or teenagers with the flu or chickenpox
    - Associated with **Reye's syndrome**
      - Life-threatening condition characterized by vomiting and lethargy, progressing to coma

Nonnarcotic Analgesics

Nonsalicylates

- Examples
  - Acetaminophen **(Tylenol, Datril)**
- Actions
  - Unknown exactly
- Uses
  - Analgesia
  - Antipyretic
  - NO ANTI-INFLAMMATORY ACTION!

Nonnarcotic Analgesics

Nonsalicylates

- Adverse effects
  - Few when used as directed
  - Skin eruptions
  - Uticaria
  - Pancytopenia
  - Hepatotoxicity, jaundice, hepatic failure
    - Esp. seen in chronic alcoholics
  - Acute acetaminophen poisoning

Nonnarcotic Analgesics

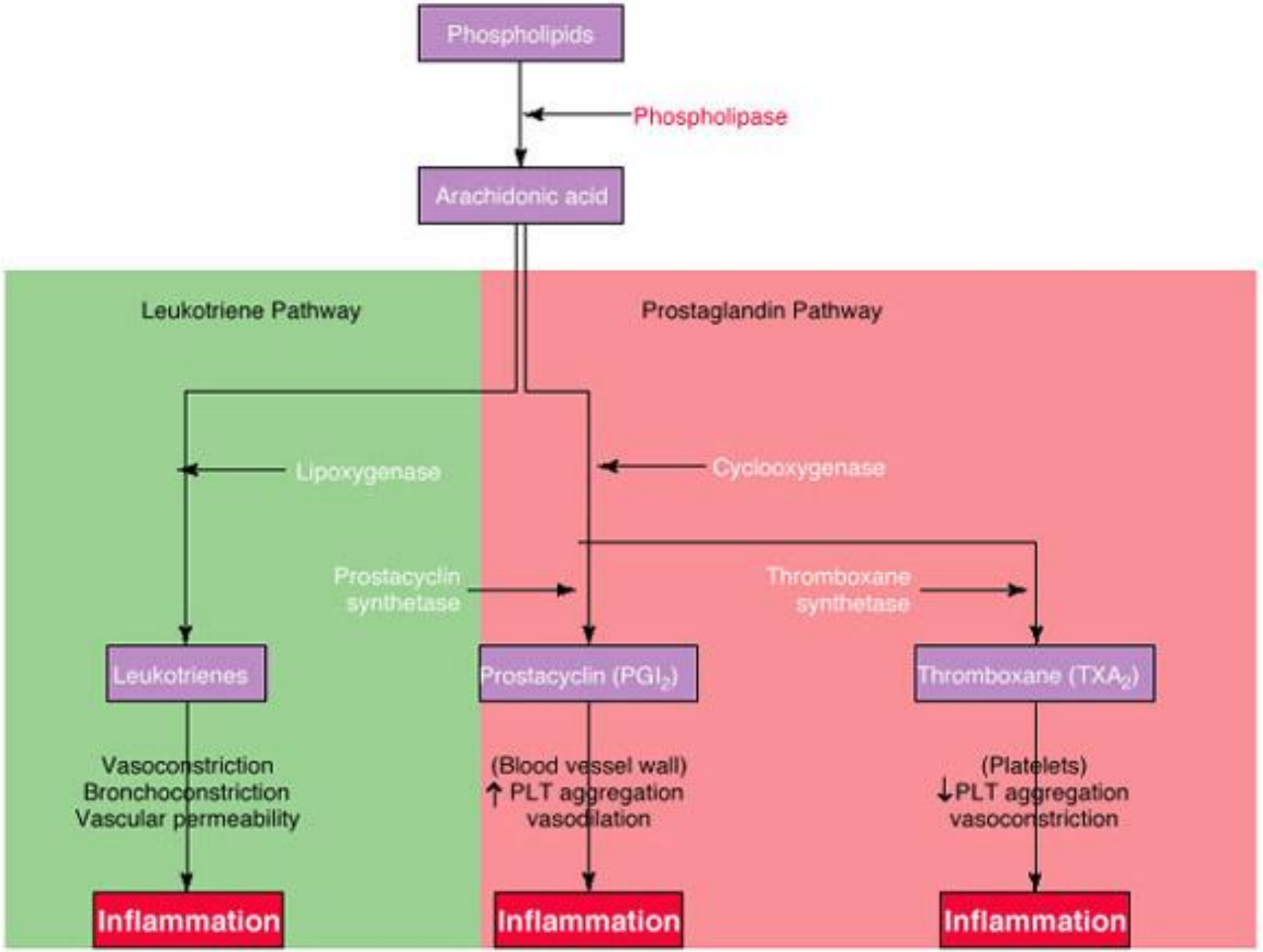
Nonsalicylates

- Acute acetaminophen poisoning
  - Can occur after a single 10 -15 g dose of Tylenol
  - Dosages of 20 -25 g may be fatal
  - Liver cells necrose and die
  - Death is due to liver failure - risk is higher with alcoholic
  - s/s
    - n/v, confusion, liver tenderness, hypotension, arrhythmias, jaundice, acute hepatic and renal failure
  - Antidote
    - Acetylcysteine (Acetadote)

Nonnarcotic Analgesics

NSAIDS

- Examples
  - Ibuprofen **(Motrin, Advil)**
  - Naproxen **(Naprosyn)**
  - Celecoxib **(Celebrex)**
  - Refecoxib (**Vioxx) – removed from market in 2005**
- Actions
  - Exact mechanism unknown


Phospholipids
Phospholipase
Arachidonic acid
Leukotriene Pathway
Prostaglandin Pathway
Lipoxygenase
Cyclooxygenase
Prostacyclin synthetase
Thromboxane synthetase
Leukotrienes
Prostacyclin (PGI_2)
Thromboxane (TXA_2)
Vasoconstriction
Bronchoconstriction
Vascular permeability
(Blood vessel wall)
↑ PLT aggregation
vasodilation
(Platelets)
↓PLT aggregation
vasoconstriction
Inflammation
Inflammation
Inflammation

Nonnarcotic Analgesics

NSAIDS

- Actions (cont.)
  - Inhibition
    - Cyclooxygenase-1 (COX-1)
      - Enzyme assists in maintaining stomach lining
    - Cyclooxygenase-2 (COX-2)
      - Enzyme that triggers pain/inflammation
  - Celecoxib **(Celebrex)** & Refecoxib (**Vioxx)**
    - Inhibit COX 2 only
      - Less potential for GI adverse effects

Nonnarcotic Analgesics

NSAIDS

- Uses
  - Anti-inflammatory effects
    - Arthritic conditions/other musculoskeletal dxs
  - Analgesic effects
    - Mild/moderate pain relief
    - Primary dysmenorrhea
  - Antipyretic effects
    - Fever reduction

Nonnarcotic Analgesics

NSAIDS

- Adverse effects – usually mild
  - GI effects (less w/COX 2 inhibitors)
    - n/v, diarrhea, constipation, epigastric pain, indigestion, abd distress, intestinal ulceration, dry mouth
    - Cytotec (Misoprostol) – prostaglandin analogue
      - Given to protect against blockage of protective prostaglandin in the GI tract
  - CNS effects
    - Dizziness, anxiety , lightheadedness, vertigo, HA, drowsiness, insomnia, confusion, depression and psychic disturbances
  - Cardiovascular effects
    - Hypertension, CHF, cardiac arrythmias, noncardiogenic pulmonary edema

Nonnarcotic Analgesics

NSAIDS

- Adverse Effects (cont.)
  - Renal effects
    - Hematuria, cystitis, elevated BUN, **acute renal failure in those w/impaired renal fx.**
    - reductions in creatinine clearance
    - acute tubular necrosis with renal failure
  - Special senses effects
    - Visual disturbances, photophobia, reversible loss of color vision, tinnitus, taste change

Nonnarcotic Analgesics

NSAIDS

- Adverse Effects (cont)
  - Hematologic effects
    - Prolonged bleeding, ecchymosis, petichae
  - Skin effects
    - Rash, erythema, Stevens-Johnson, purpura
  - Metabolic/endocrinologic effects
    - Decreased appetite, weight increase or loss, hypo & hyperglycemia, menstrual disorders
  - Others
    - Thirst, fever, chills and vaginitis

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Assess allergies & history
  - Sulfa allergies
  - Hx of GI bleed, impaired renal/liver fx
- Pain assessment
  - Initial & ongoing
- Give with food, milk or antacids
- Monitor for adverse effects
- Pt education

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Before beginning therapy, assess for conditions that may be contraindications to therapy, especially:
  - GI lesions or peptic ulcer disease
  - Bleeding disorders
- Assess also for conditions that require cautious use.
- Perform lab studies as indicated (cardiac, renal, liver studies, CBC, platelet count).

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Perform a medication history to assess for potential drug interactions
- Several serious drug interactions exist:
  - alcohol
  - heparin
  - phenytoin
  - oral anticoagulants
  - steroids
  - sulfonamides

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Salicylates are NOT to be given to children under age 12 because of the risk of Reye's syndrome.
- Because these agents generally cause GI distress, they are often better tolerated if taken with food, milk or an antacid to avoid GI irritation.
- Explain to patients that therapeutic effects may not be seen for 3 to 4 weeks.

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Educate patients about the various side effects of NSAIDs, and to notify their physician if these effects become severe or if bleeding or GI pain occur.
- Patients should watch closely for the occurrence of any unusual bleeding, such as in the stool.
- Enteric-coated tablets should not be crushed or chewed.

Nonnarcotic Analgesics

NSAIDS: Nursing Implications

- Monitor for therapeutic effects, which vary according to the condition being treated:

  Decrease in swelling, pain, stiffness, and tenderness of a joint or muscle area

Other Non-Narcotic Drugs

NAPNES Guidelines

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Other Non-Narcotic Drugs

- Diseases commonly treated
  - Osteoarthritis (OA)
  - Rheumatoid arthritis (RA)
  - Gout
  - Osteoporosis
  - Paget's disease (osteitis deformans)
  - Synovitis

Other Non-Narcotic Drugs

Gold compounds

- Suppresses or prevents arthritis & synovitis
- Does not cure
- May take up to 8 months for full effects
  - Usually ~ 6 – 8 weeks
- Examples
  - Auranofin **(Ridaura)**
  - Aurothioglucose **(Solganal)**

Other Non-Narcotic Drugs

Gold compounds

- Actions
  - Unknown
  - Decrease synovial inflammation/retard cartilage and bone destruction
  - Decreases the concentration of rheumatoid factor and immunoglobulins

Other Non-Narcotic Drugs

Gold compounds

- Uses
  - Active juvenile & adult rheumatoid arthritis
    - Not controlled by other anti-inflammatory drugs
- Adverse effects
  - Dermatitis
  - Stomatitis
  - Pruritus
  - Photosensitivity reactions
  - Chrysiasis

Other Non-Narcotic Drugs

Gold compounds

- Nursing Implications
  - Contact HCP if metal taste
  - Arthralgia can last 1-2 days
    - Parenteral form
  - Avoid ultraviolet light
  - IM injections
    - Given preferably in large muscle (gluteus)

Other Non-Narcotic Drugs

Gout

- Examples & Actions
  - Allopurinol **(Zyloprim)**
    - Reduces serum acid production
  - Colchicine *(generic)*
    - Unknown – reduces inflammation assoc w/urate crystals in joints
    - Usually given in acute attack due to toxicity
  - Probenecid **(Benemid)**
    - Increased uric acid secretion by kidneys
  - Sulfinpyrazone *(generic)*
    - Increased uric acid secretion by kidneys

Other Non-Narcotic Drugs

Gout

- Uses
  - prevent acute gouty attacks
  - Manage acute attacks
- Adverse effects
  - Skin rash
  - Stevens-Johnson syndrome
  - GI – n/v, diarrhea, abd pain, hematologic Δs

Other Non-Narcotic Drugs

Gout

- Nursing Implications
  - Give w/meals
  - Colchicine may be given q 1-2 hrs until pain relieved of GI adverse effects
  - Drink at least 10 glasses H2O
  - Monitor adverse effects
    - Rash
    - Hypersensitivity rx
    - Hematologic effects – bleeding, bruising, weakness

Other Non-Narcotic Drugs

Gout

- Colchicine (cont.)
  - Dose
    - Initially 0.5 – 1.3mg
    - Followed by 0.5 to 0.65mg q 1-2h or
      - Until pain relieved
      - Until nausea, vomiting or diarrhea ensues
      - Not to exceed 4mg
        - » MORE CAN BE FATAL!!

Other Non-Narcotic Drugs

Gout

Colchicine (cont.)

MONITOR FOR GI EFFECTS!!

- Weakness
- Anorexia
- Nausea, vomiting

- May be first sign of overdose or toxicity
  - CAN BE FATAL
- Discontinue immediately and notify HCP

Other Non-Narcotic Drugs

Skeletal Muscle Relaxants

- Various Uses
  - Spasticity
    - Multiple sclerosis, spinal cord injuries etc.
  - Acute , painful musculoskeletal dxs
    - Muscle strains
    - Back pain

Other Non-Narcotic Drugs

Skeletal Muscle Relaxants

Examples

- Anti-spasticity
  - Baclofen (Lioresal)
  - Tizanidine (Zanaflex)
- Musculoskeletal problems
  - Carisoprodol **(Soma,** *generic)*
  - Cyclobenzaprine **(Flexeril)**
  - **Metaxalone (Slekaxin)**
    - **Not as many CNS effects**
  - **Chorzoxazone (Parafon Forte)**
  - Diazepam **(Valium,** *generic)*

Other Non-Narcotic Drugs

Skeletal Muscle Relaxants

- Adverse effects
  - Drowsiness – most common
  - Lethargy
  - Constipation/diarrhea
  - Tachycardia/bradycardia, hypotension
  - Rash

Other Non-Narcotic Drugs

Skeletal Muscle Relaxants

- Nursing Implications
  - Give with food
  - Encourage other treatment measures
    - Rest
    - Physical therapy
  - Evaluate pts ability to ambulate
    - Especially with initiation of therapy
    - Risk of injury due to drowsiness/sedation

Other Non-Narcotic Drugs

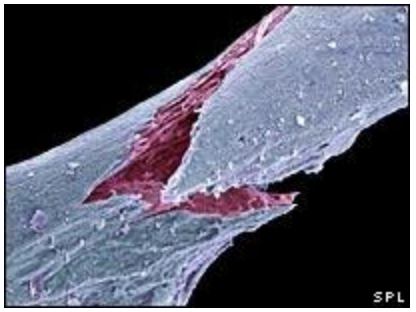
Bisphosphonates

- Examples
  - Alendronate sodium **(Fosamax)**
  - Etidronate **(Didronel)**
  - Risedronate sodium **(Actonel)**
  - **Pamidronate (Aredia) – IV**
  - **Zoledronic acid (Zometa) – IV**
  - **Ibandronate (Boniva) – IV**
- Actions
  - Act on bone
    - Inhibits normal/abnormal bone resorption
    - Results in increased bone mineral density

Other Non-Narcotic Drugs

Bisphosphonates

- Uses
  - Osteoporosis – prevention & treatment
    - Alendronate sodium **(Fosamax)**
    - Risedronate sodium **(Actonel)**
  - Paget's disease & Post-op hip replacement
    - Etidronate **(Didronel)**



- Adverse effects
  - Nausea, diarrhea
  - Increased bone pain
  - Dyspepsia, dysphagia, *esophagitis*
  - Acid regurgitation/abdominal pain
  - Osteonecrosis of the jaw (rare) – more common with IV administration

Other Non-Narcotic Drugs

Bisphosphonates

- Nursing Implications
  - Given whole tablet orally
    - 30 minutes before food/drink
  - Administer with 6-8 oz water
    - Upright position (do not lie down 30’ afterwards)
      - Minimizes GI effects
      - Facilitate delivery to stomach
      - Prevents esophageal symptoms

Other Non-Narcotic Drugs

Drugs to treat osteoporosis

- Selective estrogen receptor modulators (SERMs)
  - Prevention and treatment
  - Other drug effects
    - Improves lipid panel
    - Does not promote endometrial/breast cancer
  - Side effects
    - Hot flashes
    - Leg cramps
    - Breast tenderness
    - Vaginal bleeding

Other Non-Narcotic Drugs

Drugs to treat osteoporosis

- Hormone therapy
  - Estrogen in women
  - Testosterone in men
    - Osteoporosis 2nd to glucocorticoid use
- Due to increase risk of heart disease in women
  - Only used if all other therapies fail

Other Non-Narcotic Drugs

Drugs to treat osteoporosis

- Calcitonin
  - Marketed as Miacalcin
  - Nasal spray (most common) & injection
  - Indicated only for treatment 5 yrs post menopausal
    - May be used as prevention
      - Secondary to glucocorticoid use (not FDA approved)
  - Side effects
    - Local nasal irritation

Other Non-Narcotic Drugs

Drugs to treat osteoporosis

- Parathyroid hormone (PTH)
  - Teriparatide (Forteo)
    - Daily exposure to PTH stimulates bone formation
    - Human PTH
      - Made using a strain of *escherichia coli*
    - Given subcutaneous injevtion
    - Indicated for males & females
      - At high risk for fracture
    - Safety and efficacy not evaluated beyond 2 year

Other Non-Narcotic Drugs

Corticosteroids

- Hormones of adrenal cortex
- Synthetic forms available
- Potent anti-inflammatory effects
- Uses
  - Inflammatory musculoskeletal conditions
    - Rheumatic disorders
    - Arthritis
    - Bursitis

Other Non-Narcotic Drugs

Miscellaneous Drugs

- Examples
  - Penicillamine **(Cuprimine)**
  - Hydrocychloroquine sulfate **(Plaquenil)**
  - Methotrexate **(Rheumatrex)**
  - Auranofin **(Ridaura) – gold**
  - Azathioprine **(Imuran)**
  - Leflunomide **(Arava)**
  - Minocycline **(Minocin)**
  - Sulfasalazine **(Azulfidine)**
- Actions
  - unknown

Other Non-Narcotic Drugs

Miscellaneous Drugs

- Uses
  - Rheumatoid arthritis
- Adverse effects
  - Penicillamine **(Cuprimine)**
    - Pruritis, rash
    - Anorexia, n/v, alteration in taste perception
    - Bone marrow depression
    - Tinnitus
    - Delayed wound healing
    - Other severe reactions

Other Non-Narcotic Drugs

Miscellaneous Drugs

- Adverse effects (cont.)
  - Hydrocychloroquine sulfate **(Plaquenil)**
    - Irritability, nervousness
    - Anorexia, n/v, diarrhea
    - Blurred vision, corneal edema, halos around lights, retinal damage
    - Hematologic effects
  - Methotrexate **(Rheumatrex)**
    - **Potentially toxic drug**
    - n/v, dirrhea
    - Leukopenia, thrombocytopenia
    - Stomatitis
    - Rash, pruritis, dermatitis, alopecia

Other Non-Narcotic Drugs

Miscellaneous Drugs

- Nursing Implications
  - Penicillamine **(Cuprimine)**
    - Give on empty stomach
    - Give one hour apart from other drugs
    - Taste perception usually returns 2-3 months
  - Methotrexate **(Rheumatrex)**
    - Take exactly as prescribed – given weekly
      - Mistaken daily use = fatal toxicity
    - Use contraception if childbearing years
      - Continue for 8 weeks after therapy

Other Non-Narcotic Drugs

Miscellaneous Drugs

- Nursing Implications (cont.)
  - Hydrocychloroquine sulfate **(Plaquenil)**
    - Give w/food/milk
    - Notify HCP
      - Hearing/visual changes
      - Hair loss or color change
      - Changes in skin, severe rash
      - Easy bruising or bleeding
      - Mood changes

Narcotic Analgesics

Narcotic Analgesics

- Controlled substances
- Treats moderate to severe pain
- Classifications
  - Agonist
  - Partial agonist
  - Mixed agonist-antagonist

Narcotic Analgesics

- Examples of Agonists
  - Codeine *(generic)*
  - Fentanyl **(Sublimase, Duragesic)**
  - Hydromorphone **(Dilaudid)**
  - Meperidine **(Demerol)**
  - Morphine sulfate **(MS Contin, Roxanol)**
  - Oxycodone **(OxyContin)**
  - Propoxyphene **(Darvon)**

Narcotic Analgesics

- Examples of Partial Agonists
  - Butorphanol **(Stadol)**
- Examples of agonist-antagonists
  - Nalbuphine **(Nubain)**
  - Pentazocine (**Talwin)**

Narcotic Analgesics

- Action
  - Inhibit impulses by raising neuron threshold
  - Cause a mood change
    - Euphoria
    - Detachment
    - Soporific
      - Cause sleep

Narcotic Analgesics

- Uses
  - Moderate to severe pain
  - Manage anxiety
    - Preoperatively
    - Myocardial infarction
  - Sedation
  - Anesthesia support
  - Intrathecally/epiderally for extended pain relief
  - Management of opiate dependence (Methadone)
  - Treatment of severe diarrhea/intestinal cramping
  - Severe cough

Narcotic Analgesics

- Adverse effects
  - Respiratory depression
  - Light-headedness, dizziness, sedation
  - Constipation, anorexia, n/v
  - Sweating
  - CNS effects
    - Euphoria
    - Mental impairment
    - Physical dependence

Narcotic Analgesics

- Nursing Implications
  - Pain assessment
  - Not to be given in pts w/head injury or increased intracranial pressure
  - Assess respiratory status before administration
  - Patient controlled analgesia (PCA)
    - Next slide

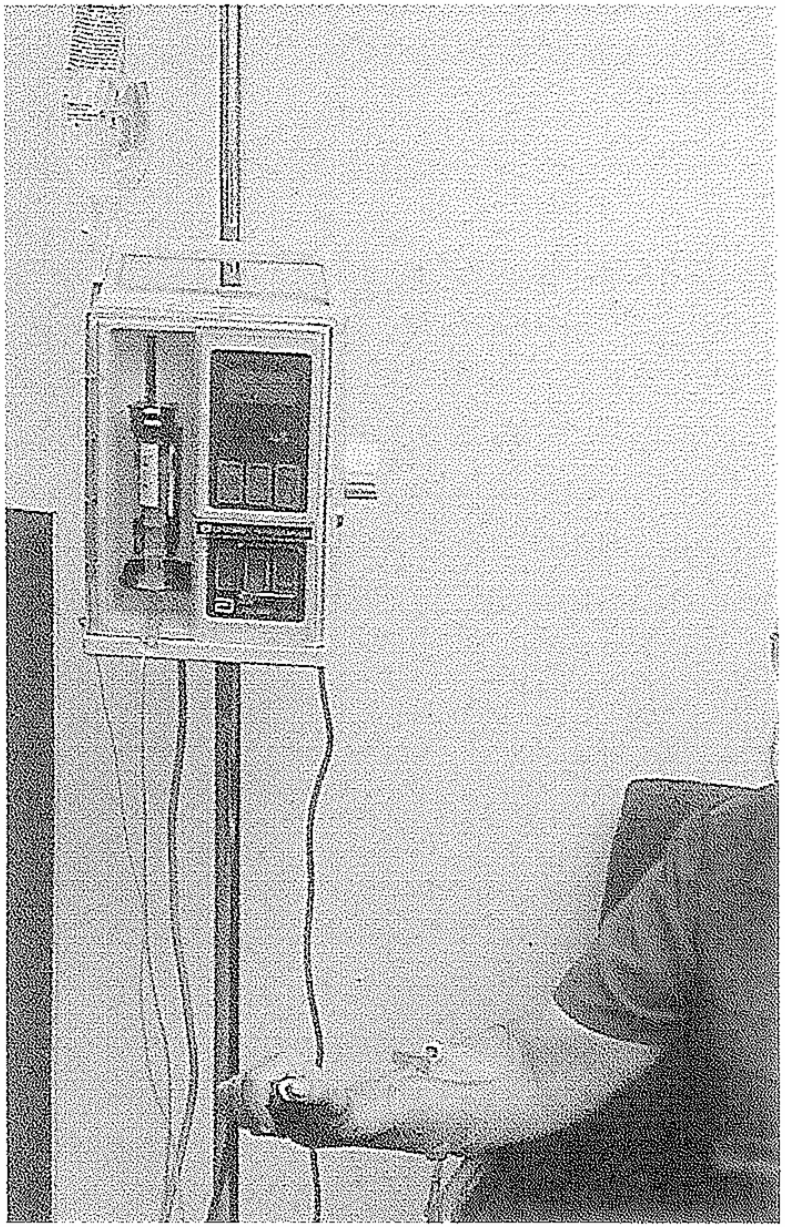


FIGURE 19-1. Patient-controlled analgesia allows the client to self-administer medication, as necessary, to control pain.

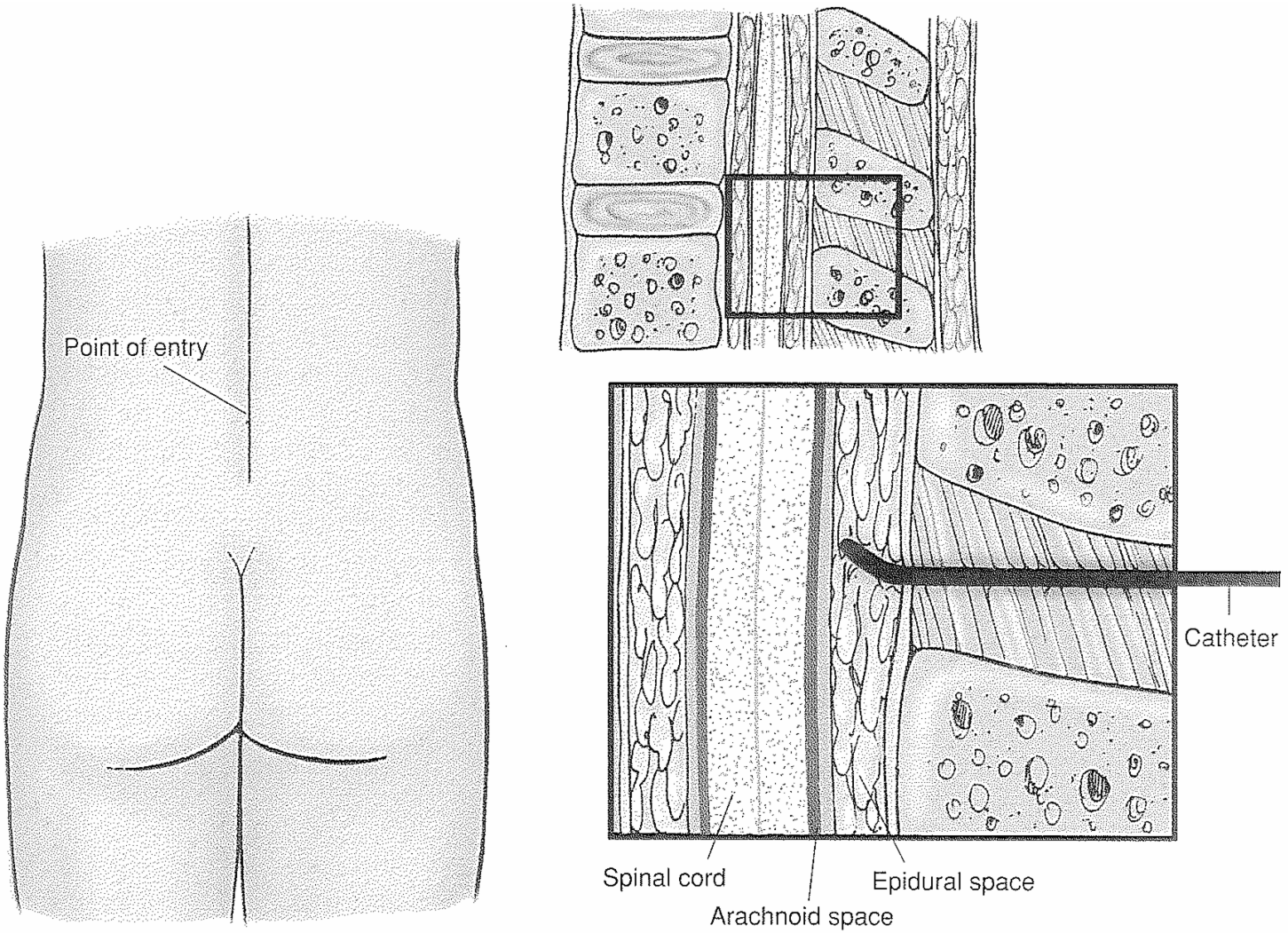


FIGURE 19-2. Epidural catheter placement.

Narcotic Analgesics

- Chronic pain
  - Morphine sulfate (MSO4)
  - OxyContin
  - Fentanyl transdermal system

Narcotic Antagonists

- Antagonist
  - Substance that counteracts action of something else
- Narcotic antagonist
  - Reverses the actions of a narcotic
  - Developed to reverse respiratory depression associated w/opiates

Narcotic Antagonists

- Examples
  - Naloxone **(Narcan)**
  - Naltrexone **(ReVia, Depade)**
- Actions
  - Not fully understood
  - Competes for opiate receptor sites
- Uses
  - Complete or partial reversal of narcotic depression
    - Including respiratory depression

Opiates

- Opioid Tolerance
  - A common physiologic result of chronic opioid treatment
  - Result:
    - larger dose of opioids are required to maintain the same level of analgesia
- Physical Dependence
  - The physiologic adaptation of the body to the presence of an opioid

Opiates

- Physical dependence on opioids is seen when the opioid is abruptly discontinued or when an opioid antagonist is administered.
  - Narcotic withdrawal
  - Opioid abstinence syndrome

Opiates

- Narcotic Withdrawal Opioid Abstinence Syndrome
  - Manifested as:
    - anxiety, irritability
    - chills and hot flashes
    - joint pain, lacrimation, rhinorrhea, diaphoresis,
    - nausea, vomiting, abdominal cramps, diarrhea

Opiates

- Psychological Dependence (aka addiction)
  - A pattern of compulsive drug use
    - characterized by
      - a continued craving for an opioid
      - the need to use the opioid for effects other than pain relief

Opiates

- Opioid tolerance and physical dependence are expected with long-term opioid treatment and should not be confused with psychological dependence (addiction)
- Misunderstanding of these terms leads to ineffective pain management and contributes to the problem of undertreatment.

Opioid Analgesics

Nursing Implications

- Before beginning therapy, perform a thorough history regarding allergies, use of other medications,health history, and medical history.
- Obtain baseline vital signs and I & O.
- Assess for potential contraindications and drug interactions.

Opioid Analgesics
Nursing Implications

- Perform a thorough pain assessment, including nature and type of pain, precipitating and relieving factors, remedies, and other pain treatments.
  - Assessment of pain is now being considered a “fifth vital sign.”

Opioid Analgesics

Nursing Implications

- Be sure to medicate patients before the pain becomes severe as to provide adequate analgesia and pain control.
- Pain management includes pharmacologic and nonpharmacologic approaches. Be sure to include other interventions as indicated.

Opioid Analgesics
Nursing Implications

- 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 below 12 breaths/minute.

Opioid Analgesics

Nursing Implications

- Follow proper administration guidelines for IM injections, including site rotation.
- Follow proper guidelines for IV administration, including dilution, rate of administration, and so forth.

CHECK DOSAGES CAREFULLY

Opioid Analgesics

Nursing Implications

- 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.

Opioid Analgesics

Nursing Implications

- 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.

Opioid Analgesics
Nursing Implications

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/min, dyspnea, diminished breath sounds, or shallow breathing.

Opioid Analgesics
Nursing Implications

Monitor for therapeutic effects:

- Decreased complaints of pain
- Increased periods of comfort
- With improved activities of daily living, appetite, and sense of well-being

Narcotic Analgesics

Nursing Process

- Assessment of need
  - Possible use of placebo
    - Psychological addiction to narcotic
  - Possible use of non-narcotic
  - Other nursing measures
- Implementation
  - Familiarity with various drugs, route, average doses (Liley, pg 155 & pg 735)

Narcotic Analgesics

Nursing Process

- Cultural implications
  - Each culture has unique beliefs, attitudes and treatment of pain
  - African-Americans
    - Believe in healers
      - Prayer and laying down on of hands
  - Hispanic-Americans
    - Prayer, wearing amulets
    - Use of herbs and spices
  - Chinese
    - Acupuncture, herbal remedies
    - Yin and yang, cold treatment
  - Native Americans
    - Massage, heat application, sweat baths
    - Herbal remedies, being in harmony with nature

Narcotic Analgesics

Nursing Process

- Teaching tips
  - Refer to Liley, Pg 166
- Observe for/minimize side effects
  - Contraindications
  - Interaction with other drugs
- Evaluating effectiveness of drug
  - Recognizing therapeutic signs
  - Reporting/recording