COURSE DESCRIPTION

This course addresses common oral pharmaceuticals used as analgesics as well as their effect on the ocular system and overall systemic health of our patients. It will discuss general pharmacology, dosing, alternatives and potential treatment regimens and side effects.

I. What is Pain
II. Definition
   A. Etiology
   B. Purpose
   C. Types of Pain
      1. Somatic
      2. Visceral
      3. Neuralgic
III. How to Treat Pain
    A. Remove Cause
    B. Reduce Input
    C. Relieve Anxiety
    D. Provide Relief
    E. Prevent Fear
IV. Drugs to Prevent Pain
   A. NSAIDS
   B. Opioid Analgesics
   C. Local and General Anesthetics
V. Scheduled Drugs
VI. General Guidelines for Prescribing Systemic Medications

A. Know the Drug (Drug Dependent Factors)
   1. Indications for Use
   2. Drug-Drug Interactions
      a) Pharmacokinetics
      b) Bioavailability
         (1) Distribution
         (2) Clearance
      c) Pharmacodynamics
         (1) Dose Response
         (2) Potency
         (3) Efficacy
      d) Know Drug Characteristics
      e) Expect the Unexpected
      f) Patient Education
   3. Adverse Patient Interactions
      a) Absorption
      b) Distribution
      c) Metabolism
      d) Excretion

B. Know the Patient
   1. Medical History
      a) Drug History
         (1) RX
         (2) OTC
         (3) Herbals
      b) Known Allergies
      c) Health Status/ROS
         (1) Gastrointestinal
         (2) Renal Disease
         (3) Hepatic Disease
         (4) Cardiovascular Disease
         (5) Pulmonary Disease
         (6) Endocrine Disease
         (7) Immune Status
         (8) Hematopoetics
      d) Patient Characteristics
         (1) Age
         (2) Size
         (3) Nutrition
         (4) Environment
         (5) Dexterity
         (6) Mental Status
         (7) Support System
e) Monitor the Therapy

2. Therapy Effectiveness
   a) MEC
   b) Remove, Reduce, Relieve

3. Presence of Adverse Effects
   a) Immediate
   b) Delayed

4. Patient Compliance
   a) Failure to Understand
   b) Poor Communication
   c) Adverse Drug Effects
   d) Medication Cost
   e) Dosing Frequency
   f) Poor Health
   g) Asymptomatic Patient

VII. Pain Management Pearls
    A. When to Prescribe
       1. Easier to Prevent Pain than play Catch-up
       2. Treat Pain nor inflammation
       3. Never use analgesics if pain etiology is unknown
    B. What to Prescribe
       1. Use synergy
          a) Topicals and Orals
          b) Central Acting and Peripheral Acting Drugs
       2. Lots of water
       3. Patient Education
    C. What to Watch For
       1. When to be careful
       2. Considerations

VIII. A General Formulary
    A. Central Acting Narcotic Analgesics
       1. Opiate Pharmacokinetics
       2. Opiate Pharmacodynamics
       3. Drug Classes
          a) Natural Opiates
             (1) Morphine
             (2) Codeine
          b) Semi-synthetic Compounds
             (1) Hydromorphone
             (2) Oxymorphone
             (3) Oxycodone
             (4) Hydrocodone
          c) Synthetics
             (1) Methadone
             (2) Meperidine
             (3) Propoxyphene
          d) Mixed agonist-antagonists
             (1) Pentazocine
             (2) Butorphanol
(3) Tramadol
e) Antagonists

4. Indications

5. Contraindications
   a) Absolute
      (1) Hypersensitivity
      (2) Pregnancy
   b) Relative
      (1) COPD
      (2) Children
      (3) Hepatic/Renal Problems

6. Systemic Effects of Opiates
7. Peripheral Effects of Opiates

B. Central Acting Non-Narcotic Analgesics

1. Pharmacokinetics
2. Pharmacodynamics
3. Drugs
   a) Acetaminophen
      (1) Tylenol
      (2) Anacin
      (3) Datril
      (4) Panadol
   b) Combinations

4. Indications
5. Contraindications
6. Side Effects

C. Peripheral Acting Analgesics

1. Pharmacokinetics
2. Pharmacodynamics
3. Drugs
   a) Non-Steroidal Anti-inflammatory Agents
      (1) Propionic Acid Derivatives
         (a) Ibuprofen
         (b) Naproxen Sodium
         (c) Ketoprofen
         (d) Flubiprofen
         (e) Oxaprozin
      (2) Indole Derivatives
         (a) Indomethacin
         (b) Ketorolac
         (c) Suldinac
         (d) Nabumetone
      (3) Pyrazolone Derivatives
      (4) Phenylacetic Acid
         (a) Diclofenac
      (5) Oxicams
         (a) Feldene
      (6) Fenamates
b) Combinations

4. Indications
5. Contraindications
6. Side Effects

D. Salicylates
   1. Pharmacokinetics
   2. Pharmacodynamics
   3. Drugs
      a) Acetylsalicylic Acid
      b) Diflusinal
      c) Salicylsalicylic Acid
      d) Combinations
   4. Indications
   5. Contraindications
   6. Side Effects

IX. General Prescribing Rules
A. Use the Safest Best Medication
B. Use the Safest Best Route of administration
C. Keep Cost in Mind
   1. Direct
   2. Indirect

X. Recommendations (Formulary)
A. Mild Pain
   1. OTC
      a) NSAID’s
   2. RX
B. Mild to Moderate Pain
   1. NSAID’s
C. Moderate Pain
   1. NSAID’s with Propoxyphene
   2. NSAID’s with Pentazocine
D. Moderate to Severe Pain
   1. Synthetic Non-narcotic Opiate-like Analgesics
   2. NSAID’s with Codeine
   3. NSAID’s with Hydrocodone
   4. NSAID’s with Oxycodone

XI. Common Pitfalls
A. Overuse
B. Overtreatment/Undertreatment
C. Inappropriate Dosing
D. Inappropriate Duration
E. Failure to Recognize Effectiveness
F. Failure to Understand Basic Pharmacology
G. Poor History
H. Failure to Warn about side effects