Common Prescription Writing for Dentists

Commonly Prescribed Drugs

- Non steroidal anti-inflammatory agents
- Analgesic agents
- Antimicrobial agents (antibiotics, antifungal, antiviral)
- Corticosteroids
- Antianxiety/sedative agents (requires special permit in NYS for dentists)

PHARMACOLOGICAL THERAPY

- Select the appropriate drug
- Prescribe the appropriate dose
- Administer by the appropriate route
- Schedule the appropriate dosing interval
- Anticipate, prevent and manage side effects

PAIN

“an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage”

\*IASP, 1986

PAIN

- Noxious Stimulus (Nociception)
- Central Modulation
- Perception & Interpretation
- Emotional State (Suffering)
- Reaction or pain behavior

ACUTE vs. CHRONIC PAIN DISORDERS

Need to differentiate in order to provide appropriate treatment
Acute Pain

- Identifiable injury or disease focus
- Usually self-limited, resolving over hours to days associated with a reasonable period for healing
- Objective autonomic phenomenon
- Responds to treatment – NSAIDs, opioids, corticosteroids, benzodiazepines

Chronic Pain

- Pain that persists greater than 3-6 months
- May reflect separate mechanisms from the original insult
- Sometimes no insult is identified
- Vague descriptions of pain, difficulty in describing timing and localization
- Lack of heightened autonomic activity
- Pain described with terms that have emotional associations
- Interferes with activities of daily living

Chronic Facial Pain

- Estimated 7-8 million people - about 4% of the U.S. population over the age of 18, report pain in the face, jaws, or TMJ.
- 70% are female - which accounts for approximately 6% of the female population.


CHRONIC PAIN SYNDROME

- Intractable pain greater than 4-6 months
- Marked alteration in behavior with depression and/or anxiety
- Marked reduction in daily activities
- Excessive amounts of medications and fragmentation of medical services
- No clear relationship to an organic disorder
- History of multiple non-productive tests, treatments and surgeries

PAIN MANAGEMENT

- Pharmacological Therapy
- Injection Therapy (Local anesthesia, steroids)
- Exercise Therapy
- Physical Medicine
- Behavioral Medicine
- Complementary & Alternative Medicine
- Intravenous Therapy
- Surgical Therapy

Pain Management Strategies
Pharmacological Therapy of Pain

• Major Questions to be Answered:
  – Acute or Chronic?
  – Is etiology being addressed?

Acetaminophen (Tylenol)

• Principal active metabolite of phenacetin
• Antipyretic – hypothalamus
• Analgesic – inhibit PG synthesis in CNS
• Anti-inflammatory – minimal
• Does not inhibit platelet aggregation, affect prothrombin responsiveness, or produce GI ulceration
**Safe in pregnancy and breast-feeding**

NONSTEROIDAL ANTI-INFLAMMATORY DRUGS

Aspirin
Diflunisal (Dolobid)
Ibuprofen (Motrin)
Ketorolac (Toradol)
Naproxen (Naprosyn)
Nabumatone (Relafen)

Mechanism of Action of NSAIDs

**ARACHIDONIC ACID**

Cox-1

Cox-2

**PROSTAGLANDINS**

TXA-2    PGI2    PGE2    PGE2
Inflammatory mediators

Hemostasis Gastric mucosa   Kidney   Pain   Inflammation   Fever

CYCLO-OXYGENASE INHIBITORS (COX-1, COX-2)

• COX-1 = housekeeping prostanoid biosynthesis
COX-2 = inducible by inflammation
• Therapeutic effect through inhibition of COX-2 iso-enzyme with reduction of certain PG’s
• COX-2 inhibitors = improved benefit/risk ratio by producing anti-inflammatory effect without the unwanted GI, antiplatelet and renal effects that accompany inhibition of PG’s mediated by COX-1

OPIOIDS (NARCOTICS)

• Opioid receptors – mu, kappa, delta, sigma
• CNS effects – analgesia, euphoria, sedation, **respiratory depression**
• Produce analgesia over a wide range of doses
• No ceiling effect to analgesia – linear to the point of unconsciousness
• Tolerance to analgesic effect
• Cross-tolerance can develop between agents
• Dependence
**OPIOIDS**

**Adverse Effects**
- Respiratory depression – tolerance develops rapidly
- Mental clouding or confusion
- Miosis – no tolerance/accommodation
- Nausea & vomiting – tolerance develops rapidly
- GI constipation – tolerance develops slowly, if at all!!
- Urinary retention
- Pruritis and flushing
- Histamine release (some narcotics)

**Contraindications**
- COPD
- Biliary obstruction
- Urinary retention
- MAO inhibitors

**OPIOID ANALGESICS**
- Codeine
- Oxycodone
- Hydrocodone
- Morphine
- Oxymorphone
- Hydromorphone
- Fentanyl
- Methadone
- Partial agonists (Buprenorphine)
- Agonist-antagonists (Butorphanol)

**Not Recommended**
- Propoxyphene
- Meperidine (nausea, vomiting)
- Partial agonists (Buprenorphine)
- Agonist-antagonists (Butorphanol)

**Prescribed analgesics/post-op/po**
- TYLENOL #3, Disp: #24, Sig: i-iiq4h prn pain
- Ibuprofen 800mgs, Disp: #30, Sig: iq8h
- Vicodin 5mg, Disp: #24, Sig: iq4h prn pain (hydrocodone)
- Vicodin ES (or 10mgs), iq6h prn pain
- Percocet 5mg or 10mg, Disp: #24, Sig: iq4h prn pain (oxycodone)

**Antimicrobials**
- Antibiotics (Oral flora-aerobes and anaerobes)
  - Amoxicillin
  - Clindamycin
- Antifungals (Candidiasis)
  - Nystatin
  - Mycelex
- Antivirals (Herpes simplex)
  - Acyclovir and others
Antibiotics

- Pen VK 500mg, Disp #40, Sig: iq6h
- Amoxicillin 500mg, Disp#30, Sig: iq8h
- Augmentin 500mg, Disp #30, Sig iq8h
- Clindamycin 150 - 300mg q6h for 10 days

Remember

- Some drugs require monitoring of CBC, liver enzymes, etc
- Drug interactions
  - Antibiotics and birth control pills
  - Synergistic effects of narcotic analgesics and other CNS depressants the patient may be on

Drugs for non-acute pain

Anxiolytics

- If used for enteral sedation in the office a separate license and additional training is required in some states (NY)

Benzodiazepines

- Alprazolam (Xanax) 12-15 h
- Clonazepam (Klonopin) 18-50 h
- Chlordiazepoxide (Librium) 5-30 h
- Diazepam (Valium) 20-50 h
- Flurazepam (Dalmane) 2-3 h
- Lorazepam (Ativan) 10-80 h
- Midazolam (Versed) 2 h
- Oxazepam (Serax) 5-15 h
- Temazepam (Restoril) 0-20 h
- Triazolam (Halcion) 1.5-5 h

Drug Enforcement Agency

- [www.dea.gov](http://www.dea.gov)
- Federal laws govern manufacturing, prescribing and dispensing
- Requires DEA # to dispense “Schedule drugs”
- New York State Public Health law requires that prescriptions be written on specific forms
Controlled Substances

- Schedules I-V
  - I – No legal medical uses, except research. *High potential for abuse.* (heroin, opium derivatives, hallucinogens)
  - II – Legal medical uses and a *high abuse potential* (demerol, fentanyl, dilaudid, oxycodone, methadone, amphetamines, barbiturates)

- Schedules III-V
  - III – *Lesser degree of abuse potential and moderate dependence.*
    - Less than 15mg of hydrocodone, less than 90mg of codeine, ketamine
  - IV – *Low abuse potential and moderate dependence.*
    - Propoxyphene, benzodiazepines
  - V – *Very low abuse potential and moderate-low dependence.*
    - Cough preparations with codeine

Prescription Writing

- Drug
- Dosage
- Amount
  - = (the number per day) x (the number of days). Example:
    - Pen V 500mg is dosed q6h for 10 days for odontogenic infection.
    - q6h = 4/day
    - (4/day) x 10 days = 40 tabs

- Instructions in detail
- Generic vs. brand (“D.A.W.”)
- Legible!!
- Electronic forms of submission to avoid error

Prescriber Information

- Name, address, phone #
- License #
- Drug enforcement administration #
- Safeguard your prescription pads

- Institution prescription
  - Institution DEA #
  - Resident Stamp

Electronic forms of submission to avoid error
- Heading
- Prescriber information
- Patient information
- Superscription-Rx (Recipe)
- Inscription
- Transcription (Signature)
- Refill information
- Signature of Prescriber
Pediatric Dosing

- Clarke’s rule (age)
- Young’s rule (weight)
- mg/kg/day divided into “x” # equal doses
  - Dependent on pharmacokinetics of the specific drug
- One teaspoon = 5 cc

Common Abbreviations

- ac - ante cibum before meals
- bid - bis in die twice a day
- gtt - gutta a drop
- hs - hora somni at bedtime
- pc - post cibos after meals
- po - per os by mouth
- q_h - quiaque hora every hours
- qid - quarter in die four times a day
- tid - ter in die three

PRINCIPLES OF TREATMENT

- Establish a diagnosis (and etiology)
- Prescribe treatment that is the most logical for the diagnosis

Good news: from today’s lecture you do not need to memorize long lists of drugs