

AVOID LIABILITY: KNOW YOUR PATIENTS' MEDICATION HISTORY AND ITS IMPACT ON DENTAL TREATMENT

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- No. 1* **LEVOTHYROXINE** (generic)
- Synthroid®
 - replacement therapy (hypothyroidism)
 - incidence is about 5% in the U. S.
 - women 9x more likely than men
 - subclinical hypothyroidism
 - local anesthetic with vasoconstrictor is **NOT** contraindicated
- No. 2* **LISINAPRIL** (generic)
- Antihypertensive Medication Compliance
 - Zestril®, Prinivil®
 - **ACE** (Angiotensin Converting Enzyme) inhibitor
 - Dental Implications
 - Orthostatic (postural) hypotension
 - Scalded mouth syndrome
 - Non-productive cough
 - NSAID interaction with long-term use
 - Angioedema
 - **Other ACE inhibitors**
 - benazepril (Lotensin®)
 - captopril (Capoten®)
 - enalapril (Vasotec®, Epaned®)
 - fosinopril (Monopril®)
 - moexipril (Univasc®)
 - pirindopril (Aceon®, Coversyl®)
 - quinapril (Accupril®)
 - trandolapril (Mavik®)
 - Tekturna ® (aliskiren)-direct renin inhibitor

DIOVAN® (valsartan)

- **Angiotensin Receptor Blocker (ARB)**
- antihypertensive
- Dental Implications
 - Orthostatic hypotension
 - Scalded mouth syndrome
 - Non-productive cough (less than ACE Inhibitors)
 - NSAID interaction with long-term use
 - Other popular ARBs
 - candesartan (Atacand®)
 - irbesartan (Avapro®)
 - losartan (Cozaar®)
 - olmesartan (Benicar®)

No. 3

ATORVASTATIN (generic)

- HMG-CoA reductase Inhibitor
- Decrease serum total and LDL cholesterol
- grapefruit juice interactions
- Lipitor®
- Similar medications:
 - rosuvastatin (Crestor®)
 - lovastatin (Mevacor®, Altoprev®)
 - simvastatin (Zocor®)
 - pravastatin (Pravachol®)*
 - pitavastatin (Livalo®)
 - fluvastatin (Lescol®)
- possible side effects of statins
 - muscle weakness
 - increased blood glucose or HbA1c
 - decreased cognitive ability-questionable
- **CONTRAINDICATED IN PREGNANCY AND BREAST FEEDING**
- Do statins have an effect on pulpal morphology?
- New cholesterol lowering medications-expensive
 - PCSK9 inhibitors-mechanism
 - alirocumab (Praluent®) –Sanofi/Regneron
 - evolocumab (Repatha®)-Amgen

No. 4 *HYDROCODONE WITH ACETAMINOPHEN* (generic)

- opiate & non-opiate analgesic
- addictive
- second most abused drug by general dentists
- Schedule II (as of-**October 6, 2014**)
- opiate metabolism-CYP2D6
 - genetic differences
 - **NO CODEINE in CHILDREN -see AAP & FDA**
- most common side effect of opiates: Nausea and vomiting
- Hydrocodone is more efficacious than codeine as an analgesic but causes less nausea & vomiting
- opiate-induced N/V occurs in CRTZ located in medulla
- **analgesic efficacy is not related to N/V**
- phenothiazines will block the CRTZ
 - drug interactions between phenothiazines and opiates

Rx Hydrocodone with acetaminophen 7.5/325 mg

Disp. Twelve (12) tablets

Sig: Take one tablet by mouth every four to six hours as needed for the relief of pain.

Do not exceed six tablets in 24 hours

****THE PHARMACOLOGY OF ACETAMINOPHEN****

- *In vitro* acetaminophen inhibits prostaglandin synthesis
 - So why is it not anti-inflammatory?**
- The analgesic effect of acetaminophen occurs predominantly in the Central Nervous System (CNS)
- Mechanism of action
 - cyclo-oxygenase 3 (COX₃) inhibition
 - located in the central nervous system (CNS)
 - some peripheral effects
- Clinical Effects
 - analgesic
 - antipyretic
 - No gastritis
 - No effects on uric acid-gout☺
 - No anti-platelet effects

Acetaminophen clinical effects (cont.)

- **NO ANTI-INFLAMMATORY EFFECTS**
- **Maximum daily dose of acetaminophen is 3000 mg**
- **Maximum effective dose of acetaminophen is 1000 (650) mg**

No. 5 ***METOPROLOL TARTRATE/SUCCINATE*** (generic)

- Selective Beta Blocking Agent (Beta₁ blocking agent)
- Indications
 - antihypertensive
 - premature atrial (PACs) and/or ventricular contractions (PVCs)
 - other abnormal cardiac rhythms
- Lopressor®, /Toprol XL®
- **DO NOT DISCONTINUE ABRUPTLY**
- Long-term use of NSAIDs (~ 3 weeks) may diminish hypotensive effectiveness of beta blockers
- Other selective Beta₁ blocking agents
 - nebivolol (Bystolic®)
 - atenolol (Tenormin®)
 - bisoprolol (Zebeta®)
 - acebutolol (Sectral®)
 - esmolol (Brevibloc®)
 - betaxolol (Kerlone®)

No. 6 ***AMLODIPINE BESYLATE*** (generic)

- calcium channel blocker
- antihypertensive
- gingival hyperplasia
- Norvasc®
- Other calcium channel blockers
 - diltiazem(Cardizem®, Tiazac®)
 - felodipine (Plendil®)
 - nifedipine (Adalat®, Procardia®)
 - verapamil (Covera-HS®, VerelanPM®, Calan)
 - nifedipine (Cardene®)
- ***clarithromycin interaction-could be fatal***

No. 7 ***METFORMIN*** (generic)

- type II diabetes mellitus
- appoint in the morning
- Glucophage®
- other uses

No. 8

OMEPRAZOLE (generic)

- hydrogen ion pump inhibitor (PPI)
- **GastroEsophageal Reflux Disease (GERD)**
- possible side effects related to altered stomach Ph
 - increased risk for hip, wrist, and spine fracture
 - increased risk for Clostridium difficile
 - decreased serum magnesium
 - possible Vitamin B₁₂ deficiency
- similar medications
 - esomeprazole (Nexium®)
 - lansoprazole (Prevacid®)
 - dexlansoprazole (Dexilent®, Kapidex®)
 - rabeprazole (Aciphex®)
 - pantoprazole (Protonix®)
 - Zegarid®-a rapid release form of omeprazole

VIMOVO®

- naproxen 375 mg /esomeprazole 20 mg
- naproxen 500 mg/esomeprazole 20 mg
- “to relieve signs and symptoms of osteoarthritis, rheumatoid arthritis, and ankylosing spondylitis and to decrease the risk of developing stomach (gastric) ulcers in people who are at risk of developing gastric ulcers with NSAIDs”

YOSPRALA®

- enteric-coated aspirin 81 mg/omeprazole 40 mg
- enteric-coated aspirin 325 mg/omeprazole 40 mg
- “secondary prevention of cardiovascular and cerebrovascular events and who are at risk of developing aspirin-associated gastric ulcers”

No. 9

ALBUTEROL (generic)

- Beta 2 receptor agonist
- bronchodilator
- asthma, COPD
- prevention of exercise-induced bronchospasm
- **use caution** with aspirin/NSAIDs in some patients
- Ventolin HFA® Proair HFA®
- **ADVAIR DISCUS® (No. 19)**
 - fluticasone and salmeterol
 - maintenance treatment of asthma
 - no problems with vasoconstrictor
 - oral candidiasis/aspergillus niger

- **FLUCONAZOLE** (generic)
 - oral antifungal
 - Diflucan®
 - 100 mg BID first day and 100 mg/day for 13 days
 - contraindicated with patients taking clopidogrel (Plavix®)

No. 10 **GABAPENTIN** (generic)

- Neurontin®
- analgesic for neuropathic pain
 - fibromyalgia
 - diabetic neuropathy
 - post-herpetic neuropathy
- abuse potential?

No. 11 **IBUPROFEN** (generic)

- NonSteroidal Anti-Inflammatory Drug (NSAID)
- COX₁ & COX₂ inhibitor
- Maximum daily dose is 3200 mg for acute pain
- Motrin®, Motrin-IB®, Advil® (OTC)

Rx Ibuprofen Tablets 400 mg

Disp. 16 tablets

**Sig: Take 1-2 tablets 3-4 times per day
as needed for the relief of pain**

Do not exceed eight tablets within 24 hours

- **Pediatric dosing**
 - **7.5 mg/kg every 6 -8 hours**
 - **30 mg/kg/day-maximum dose**
- Other useful NSAIDs (Cox1 and Cox 2 inhibitors)
 - etodolac (generic)-Lodine® is discontinued
 - 200-400 mg every 6 to 8 hours
 - ketoprofen (generic)-Orudis® is discontinued
 - 50-75 mg every 6 to 8 hours-immediate release
 - 200 mg per day for extended release
 - meloxicam (Mobic®)-Long acting
 - 7.5mg - 15 mg per day
 - do not exceed 15 mg per day

No. 12 **TRAZADONE** (generic)

- Desyrel®
- Antidepressant
- Serotonin/Norepinephrine Reuptake Inhibitor (SNRI)
- **Use caution with vasoconstrictors**
- vilazodone (Viibryd®)
- lurasidone (Latuda®)

No. 13 **WARFARIN** (generic)

- Coumadin®
- Anticoagulant
- produces hypoprothrombinemia (Vitamin K antagonist)
- INR is used to measure effectiveness
- Drug Interactions
 - Tetracyclines
 - NSAIDs
 - aspirin
 - “statins”
- Newer Anticoagulants-**NOAC** or **DOAC**
 - do not require lab tests-INR of no help with these
- dabigatrin (Pradaxa®)-Direct thrombin inhibitor
 - Praxbind (idarucizumab)- reversal agent
- rivaroxaban (Xarelto®)-Factor Xa inhibitor
- apixaban (Eliquis®)-Factor Xa inhibitor
- edoxaban (Sayvasa®)-Factor Xa inhibitor
- **andexanet (AndexXa)-Reversal agent for Factor Xa inhibitors-NOT APPROVED BY FDA**

No. 14 **AMOXICILLIN** (generic)

- Broad spectrum antibiotic
- Antibiotic of choice for orofacial infections is **penicillin V**

Rx Penicillin V tablets 500 mg

Disp: 30 tablets

**Sig: Take two tablets by mouth to start
then one tablet every six hours
for seven days for infection**

- No. 15** **CLOPIDOGREL** (generic)
- Plavix®
 - platelet aggregation inhibitor
 - blocks ADP receptor on blood platelet
 - clopidogrel is a **prodrug**
 - drug interactions are due to CYP enzymes
 - increased effect with tobacco users
 - decreased effect with PPIs
 - **decreased effect with fluconazole (Diflucan)**
 - clopidogrel is available in generic form
 - prasugrel (Effient®)
 - ticagrelor (Brilinta®)
- No. 16** **CYMBALTA®** (duloxetine)
- Serotonin/Norepinephrine Reuptake Inhibitor (SNRI)
 - depressive episodes
 - chronic fatigue syndrome
 - chronic pain (neuropathic)
 - adjunctive therapy for attention deficit hyperactivity disorder (ADHD)
 - **Use caution with vasoconstrictors**
- No. 17** **FLUTICASONE NASAL** (generic)
- corticosteroid
 - management of seasonal and perennial allergic rhinitis
 - Flonase®
- No. 18** **HYDROCHLORTHIAZIDE** (generic)
- HCTZ
 - diuretic/antihypertensive
 - depletes potassium
 - eat lots of bananas and drink lots of orange juice
 - watch out for potassium chloride supplements
- No. 19** **ADVAIR DISCUS®**

No. 20 **ALPRAZOLAM** (generic)

- antianxiety agent
- Xanax®
- Xerostomia (~ 10% of patients)
- most common drug found in “dirty” urine of methadone patients
- combination of Xanax and Ecstasy is called “Parachuting”
- other popular benzodiazepines
 - lorazepam (Ativan®)
 - clonazepam (Klonopin®)
 - diazepam (Valium®)

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