

Trendy Dental Drugs: Golden Nuggets For You



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November 2016

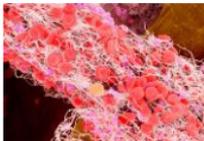


Learning Objectives

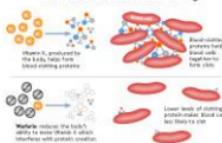
- Describe commonly used drugs & their brand/generic names, classes, & indications
- Identify potential dental implications
- Discuss mechanisms of action and common side effects associated with these medications
- Discuss any questions you may have ☺

CV: Anticoagulants

- Blood clots when you need it
- Hold for Surgery
 - Bridge therapy = low-molecular weight heparin
- INR = International Normalized Ratio

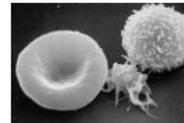


How Warfarin Affects Blood Clotting



CV: Anticoagulants

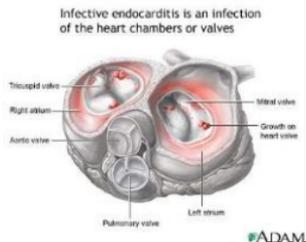
- Clot prevention
 - Warfarin = Coumadin, Jantoven
 - Clopidogrel = Plavix
 - Rivaroxaban = Xarelto
 - Dabigatran = Pradaxa
- Side effects:
 - signs of bleeding/bruising
- Too much warfarin = Vitamin K
- Diet = consistent vitamin K



Dental Notes: Hold for dental procedures;
Monitor for excessive gum bleeding

Prevention of Infective Endocarditis (IE)

- Certain dental procedures can lead to bacteremia
- Bacteria can vegetate
 - Valves
 - Endocardium
- Always fatal if untreated
- Only prescribe prophylactic antibiotics to patients at **highest** risk



Dental Procedures Requiring Antibiotic Prophylaxis in High Risk Patients

RECOMMENDED

- Tooth extractions
- Periodontal procedures (scaling, root planing, gum surgery, and probing)
- Dental implants
- Tooth replacement
- Root canal

NOT RECOMMENDED

- Routine anesthetic injection
- Placement of removable appliances
- Placement of orthodontic brackets
- Bleeding from trauma to lips/mucosa
- Dental radiographs
- Adjustment of orthodontic appliances
- Shedding of deciduous teeth

Merck Manuals; Common Oral Diseases, Fourth edition

Antibiotics:

“The newest one is the best! I want that”

- Side effects:
 - Diarrhea
 - Nausea
 - Yeast infections in some women
- Tips:
 - New drug is not always best
 - Always take until gone
 - With or without food varies



<http://www.cdc.gov/getsmart/community/about/quiz.html>

Prophylactic Antibiotics

- Aminopenicillin
 - Amoxicillin (Amoxil)
 - Ampicillin
- Cephalosporins
 - Cephalexin (Keflex)
 - Cefazolin
 - Ceftriaxone
- Lincosamide
 - Clindamycin (Cleocin)
- Macrolides
 - Azithromycin (Zithromax)
 - Clarithromycin (Biaxin)



It was on a short-cut through the hospital kitchen that Albert was first approached by a member of the Antibiotic Resistance.

Antibiotics: Penicillins & their relatives

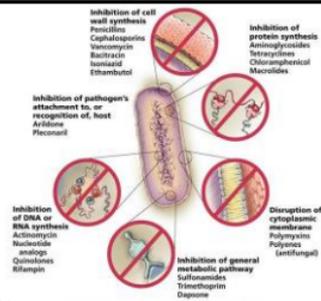
- Penicillin VK
- Amoxicillin = Amoxil
- Amoxicillin/Clavulanate = Augmentin
- Cephalexin = Keflex
 - Cautions: Cross-sensitivities and allergies
 - Can still be very effective even though "old drugs"



Dental Notes: Antibiotic Prophylaxis

Antibiotics: Quinolones

- Ciprofloxacin = Cipro
- Levofloxacin = Levaquin
- Cautions:
 - Do not take with milk, antacids
 - Sun sensitivity

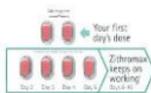


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Dental Notes: Metallic Taste Side Effect

Antibiotics: Others

- Azithromycin = Zithromax, Zmax
- Doxycycline = Vibramycin
 - Cautions:
 - Do not take with milk, antacids
 - Sun sensitivity, **teeth staining**
- Sulfamethoxazole/Trimethoprim = Septra, Bactrim
 - Cautions:
 - Sun sensitivity, Increase fluid intake, **allergies**



Analgesic: Anti-inflammatory

- Ibuprofen = Motrin, Advil OTC
- Naproxen = Naprosyn, Aleve OTC
- Celecoxib = Celebrex
- Side Effects:
 - GI = take with food
 - Dizziness?
- Caution with warfarin, history of ulcer/GERD



Dental Notes: abnormal taste, xerostomia

Analgesic: Opioids

- Oxycodone = OxyContin
 - Side effects: see previous slide
 - High abuse potential due to extended release formulation
- Morphine = MS Contin
- Tramadol = Ultram
 - Side Effects:
 - Dizziness, Drowsiness
 - Dependence? Abuse?
 - Do not take with alcohol



Analgesic: Opiate Combinations

- Hydrocodone/APAP = Vicodin, Lortab, Lorcet
- Codeine/APAP = Tylenol #3
- Oxycodone/APAP = Percocet
 - Side Effects:
 - Dizziness, Drowsiness
 - Constipation
 - Dependence? Abuse?
 - Do not take with alcohol
- APAP= Acetaminophen 325mg limit



Chat break...

- Naloxone

Oregon Pharmacies Can Now Prescribe Naloxone For Overdoses (<http://www.opb.org/news/article/oregon-pharmacies-naloxone-overdoses/>)

Naloxone blocks the effects of an overdose from opioids such as heroin, oxycodone, and morphine.

- 1 - Person wants naloxone, contacts pharmacy for availability
- 2 - They read a 7-pg training document
- 3 - Reads and signs final page
- 4 - RPh may dispense without MD Rx



Analgesic: Muscle Relaxants

- Cyclobenzaprine = Flexeril
- Tizanidine = Zanaflex
- Baclofen = Lioresal
- Carisoprodol = Soma
 - Side Effects:
 - Dizziness, Drowsiness
 - Dependence
 - Do not take with alcohol



Dental Notes: Xerostomia (21% to 32%), used for TMJ

CNS: Antidepressants

■ SSRIs

- Fluoxetine = Prozac
- Sertraline = Zoloft
- Paroxetine = Paxil
- Duloxetine = Cymbalta
- Citalopram = Celexa
- Escitalopram = Lexapro

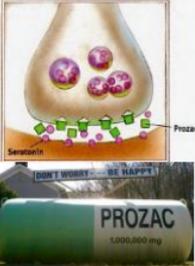
■ Side effects:

- headache, nausea, insomnia or somnolence



Dental Notes: Xerostomia, bruxism

Prozac blocks normal reuptake of the neurotransmitter serotonin, excess serotonin in synapse enhances its mood-lifting effect.



CNS: Antidepressants

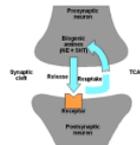
Mechanism of action of tricyclic antidepressants

■ Tri-Cyclic Antidepressants (TCAs)

- Amitriptyline = Elavil
- Side effects: sedation, dry mouth

■ "Other" types

- Mirtazapine = Remeron
- Bupropion = Wellbutrin, Zyban
- Venlafaxine = Effexor
- Trazodone = Deseryl
- Side effects: dizziness, drowsiness



Dental Notes: Significant xerostomia, orthostatic hypotension, peculiar taste, and black tongue

CNS: Antianxiety and/or Insomnia

■ Benzodiazepines

- Lorazepam = Ativan
- Clonazepam = Klonopin
- Diazepam = Valium
- Temazepam = Restoril
- Alprazolam = Xanax
- Side effects: drowsiness

■ Buspirone = BuSpar



Dental Notes: Common dental pre-med

Endocrine: Oral Diabetic agents

■ Metformin = Glucophage

- Side Effects: dose dependent

■ Glipizide = Glucotrol

■ Glyburide = Micronase, DiaBeta

■ Pioglitazone = Actos

- Side Effects: dose dependent

■ Sitagliptin = Januvia



Dental Notes: Taste disorder

Endocrine: Osteoporosis

- Alendronate = Fosamax
- Risedronate = Actonel
 - Side Effects:
 - Esophagitis, Nausea
 - Once weekly dosing possible
- Raloxifene = Evista
 - Side Effects:
 - Hot flashes, Nausea



Dental Notes: Osteonecrosis of the Jaw

Most commonly used dietary supplements (2012)

| Supplement name | Use in Adults | Most commonly reported uses |
|--------------------------------|---------------|---|
| Fish oil/Omega-3 fatty acids | 7.8% | Lower blood pressure and/or triglycerides |
| Glucosamine and/or chondroitin | 2.6% | Reduce arthritis pain |
| Probiotics/Prebiotics | 1.6% | Prevent diarrhea from antibiotics or IBS |
| Melatonin | 1.3% | Insomnia, jet lag, & shift work sleep problems |
| Coenzyme Q-10 | 1.3% | Treat cardiac conditions (e.g. CHF, angina, etc.) |
| Echinacea | 0.9% | Prevent cold, flu, infections |
| Cranberry | 0.8% | Prevent urinary tract infections |
| Garlic Supplements | 0.8% | Lower cholesterol and blood pressure |
| Ginseng | 0.7% | Increase sense of well-being/overall health |
| Ginko biloba | 0.7% | Improve memory and prevent dementia |

Clarke TC, Black LL, Swanson BJ, Barnes PM, Nuhn RL. Trends in the use of complementary health approaches among adults - United States, 2002-2012. National health statistics reports, no 79. Hyattsville, MD: National Center for Health Statistics; 2013. PMID: 2440

Herbal therapies for dental conditions

| Grade | Common name | Genus/species | Condition |
|-------|-------------|-------------------------------|-------------------|
| B | Bloodroot | <i>Sanguinaria canadensis</i> | plaque/gingivitis |
| B | Rhubarb | <i>Rheum</i> spp. | gingivitis |
| C | Betel nut | <i>Areca catechu</i> | dental caries |



| Grading System | |
|----------------|-------------------------------------|
| A | Strong Positive Scientific Evidence |
| B | Positive Scientific Evidence |
| C | Unclear Scientific Evidence |
| D | Negative Scientific Evidence |
| E | Strong Negative Scientific Evidence |

Bloodroot (*Sanguinaria canadensis*)



- Mechanism of action:
 - Reduces bacterial growth(both G+ & G-), potentially through altering bacterial adherence and plaque formation
 - Reduces inflammation
- FDA concluded: "sanguinaria extract at 0.03-0.075% concentration is safe, but there are insufficient data available to permit final classification of its effectiveness in an oral rinse or dentifrice dosage form as an [OTC] antigingivitis/antiplaque active ingredient."

Rhubarb (*Rheum spp.*)



- Mechanism of action
 - Reduces bacterial growth & inflammation
- Evidence
 - Pyralvex has been used for decades as a salve (salicylic acid & rhubarb extract)
 - Paradium more recently (chlorhexidine & rhubarb extract)



Betel Nut (*Areca catechu*)

- Mechanism of action
 - Slows microbial growth
- Background
 - Limited clinical studies
 - Not recommended due to safety concerns
- Adverse effects
 - Enhanced periodontitis, gingival lesions, gum recession, teeth staining
 - Potentially carcinogenic
 - Respiratory issues (e.g., wheezing, asthma exacerbations, bronchoconstriction, etc.)

Long term betel nut chewer



"Around 600 million people worldwide are thought to chew betel quids, making them the fourth most commonly used psychoactive substance after tobacco, alcohol, and caffeinated drinks."
<http://www.fox.com/2013/11/04/world-asia-tayammar-betel-nut-cancer/>



Marijuana and The Oregon Law

Status in Oregon:

- Recreational and Medical
- OLCC regulated
- Schedule I Federally
- Banking unresolved
- Cities and Counties may opt out of licensing



<http://whatslegaloregon.com/>

https://public.govdelivery.com/accounts/OLCC/subscriber/new?topic_id=OLCC_69

Biologics & Biosimilars vs. Interchangeable Biologic

Biologics



Aspirin



What is Biosimilar?

- Biologic
- Highly similar to reference
- No clinical difference
- Doesn't imply interchangeable

What is Generic?

- Bioequivalent
- Manufacturing not disclosed

What is Interchangeably Biosimilar?

- Biosimilar to reference
- Same clinical effect
- No additional risk

Thank You ☺

Reference

Lexi-Comp Online Drug Database

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Bonus Slides if Time Allows ☺

New Pregnancy Labeling: PLLR Pregnancy & Lactation Label Requirements

- Letter categories (A,B,C,D,X) removed



<http://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/Labeling/ucm093307.htm>

Corticosteroids

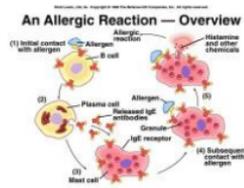
- Prednisone = Deltasone
- Methylprednisolone
 - Side effects:
 - Insomnia, nervousness, hunger
 - Nausea: Take With Food
 - Long term use concern

Prednisone:
The all the time eating,
shaking, bone thinning,
weight gaining, B!@&#
making, so you can never
sleep again medicine!



Respiratory: Allergies

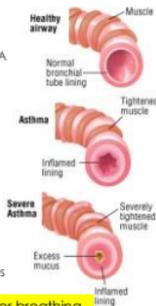
- Antihistamines
 - Cetirizine = Zyrtec OTC
 - Fexofenadine = Allegra OTC
 - Loratadine = Claritin OTC
 - Diphenhydramine = Benadryl
- Montelukast = Singular
- Nasal Corticosteroids
 - Fluticasone = Flonase
 - Mometasone = Nasonex
- Side Effects
 - Headache, bloody nose
 - Long term use caution



Dental Notes: Xerostomia

Respiratory: Asthma Inhalers

- “Rescue Inhalers”
 - Albuterol = Proventil HFA, Proair HFA, Ventolin HFA
 - Side effects:
 - Increased heart rate, “jittery” feeling
- “Maintenance Inhalers”
 - Fluticasone/Salmeterol = Advair Diskus
 - Ipratropium/Albuterol = Combivent, DuoNeb
 - Budesonide/Formoterol = Symbicort
 - Tiotropium = Spiriva Handihaler
<https://www.spiriva.com/>
- Side effects:
 - Headache
 - Oral Thrush (*Candida albicans*), voice changes



Dental Notes: Candida infection, Monitor breathing

CNS: Antipsychotic

- Quetiapine = Seroquel
- Risperidone = Risperdal
- Olanzapine = Zyprexa
- Aripiprazole = Abilify
 - Side effects: Significant xerostomia, agitation, insomnia, somnolence, weight gain
- Caution:
 - Do not stop abruptly



Dental Notes: Significant xerostomia

CNS: Anticonvulsant

- Gabapentin = Neurontin
- Pregabalin = Lyrica
- Topiramate = Topamax
- Divalproex = Depakote
- Lamotrigine = Lamictal
- Levetiracetam = Keppra
- Phenytoin = Dilantin
 - Side Effects: Headache, sedation, dizziness, gingival hyperplasia



Dental Notes: Gingival Hyperplasia, used for trigeminal neuralgia, periodontal abscess and taste perversion.

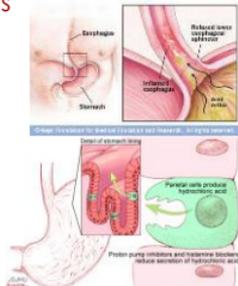
CNS: Jumble

- Alzheimer's/Dementia
 - Donepezil = Aricept
 - Memantine = Namenda
- Antiparkinsons
 - Ropinirole = Requip
 - <https://www.michaelfox.org/>
 - <http://www.youtube.com/user/MichaelFoxShow>
- Side effects: increase with dose escalation, diarrhea, somnolence
- ADHD
 - Amphetamine/Dextroamphetamine = Adderall



GI: Acid Reducers

- Proton Pump Inhibitors
 - Omeprazole = Prilosec OTC
 - Lansoprazole = Prevacid OTC
 - Pantoprazole = Protonix
 - Esomeprazole = Nexium
 - Rabeprazole = Aciphex
- H2 Receptor antagonists
 - Ranitidine = Zantac OTC
 - Famotidine = Pepcid OTC
- Side Effects
 - rare



Dental Notes: pH of oral cavity and chair position

CV: Beta Blockers

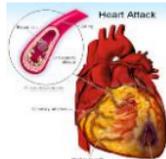
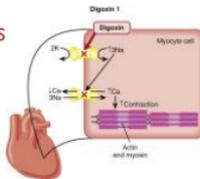
- Hypertension, Arrhythmias, Heart Failure, MI
 - Atenolol = Tenormin
 - Metoprolol = Toprol, Lopressor
 - Carvedilol = Coreg
 - Propranolol = Inderal LA
- Other indications: Performance anxiety, Raynaud's, migraine prophylaxis
- Side Effects:
 - Dizziness, orthostatic hypotension
 - Weakness, lack of energy



Dental Notes: Xerostomia, Monitor BP, and chair position

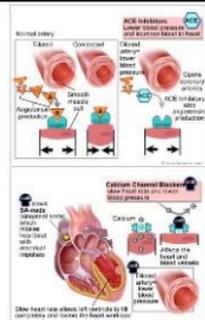
CV: "Heart-ache" drugs

- Digitalis: Heart Failure
 - Digoxin = Lanoxin, Digitek
 - Side effects: Dose dependent, nausea
- Nitrates: Angina
 - Isosorbide Mononitrate = Imdur
 - Nitroglycerin = Nitrostat, Nitroquick
 - Side effects: headache (tolerance)



CV: Hypertension

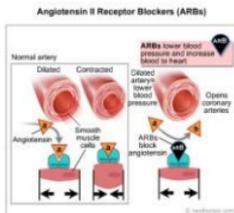
- ACE-Inhibitors:
 - Lisinopril = Prinivil, Zestril
 - Lisinopril/HCTZ = Prinizide, Zestoretic
 - Benazepril = Lotensin
 - Ramipril = Altace
- Calcium Channel Blockers:
 - Amlodipine = Norvasc
 - Amlodipine/Benazepril = Lotrel
 - Diltiazem = Cardizem CD, Cartia
- Side effects:
 - Dizziness, Headache



Dental Notes: Monitor BP and chair position and gingival hyperplasia for CCBs & nifedipine

CV: Hypertension

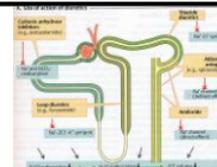
- Angiotensin Receptor Blockers (ARBs):
 - Losartan = Cozaar
 - Irbesartan = Avapro
 - Valsartan = Diovan
- Others:
 - Clonidine = Catapres
 - Doxazosin = Cardura
- Side effects:
 - Dizziness, Headache



Dental Notes: Monitor BP and chair position

CV: Diuretics

- Furosemide = Lasix
- Spironolactone = Aldactone
- Hydrochlorothiazide = HCTZ, Microzide
- Triamterene/HCTZ = Maxzide, Dyazide
- Pt may need Potassium Chloride = KDur, MicroK
- Side effects:
 - Nausea, photosensitivity
 - Low blood pressure, dizziness



Dental Notes: Monitor BP and chair position and urgency