

1 **OCULAR SIDE-EFFECTS OF SYSTEMIC MEDICATIONS**

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2 ***Questions??***

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3 **HEY DOC-EVERYTHING LOOKS BLUE!**

- 71 Y/O male for general exam complains of occasional color disturbance associated with “migraine-like” HA
- Occurs X 2 months-”at night”
- No prior HX of vascular HA
- No decrease or loss in vision
- No hx TIA

4 **Viagra-The Bad**

- Has produced anterior ischemic neuropathy
- Has produced pupil-sparing third nerve palsy
- Associated with ocular vascular events
- Vascular adverse effects increase dramatically when used with nitrates

5 ***45 y/o mildly retarded male patient presents for general exam-
Patient’s guardian says that medical panel requires patient to
have an eye exam every 6 months because of his medications***

6 **Bottom Line**

Do a baseline evaluation and recheck patient every 6 months for 1 year, then yearly thereafter
Keep an eye on the literature

- 7 ***The Breast Cancer Wonder Drug***
- Reduces incidence of breast cancer by up to 75%
 - Originally used in elderly, post-menopausal women to prevent recurrence of cancer
 - Now in young women for prophylaxis
 - Produces vision loss?
- 8 **Tamoxifen Maculopathy @ @ @ @**
- Occurs in 6% of patients within 6 months of low dose therapy (20mg/D)
 - Reversible early, not reversible later
 - White crystalline macular deposits
 - Nobody knows about this
- 9 ***Patient Management***
- Pre-TX baseline evaluation with emphasis on macular function and appearance
 - Evaluate every 6 months thereafter or prn decrease in central acuity
 - Also monitor for cataract @ @ @ @
- 10 ***What About Plaquenil***
“Bulls-eye” Maculopathy
- 11 **FUGEDABOUTIT!!!**
(Maybe)
- Almost non-existent
 - Hydroxychloroquine much safer than chloroquine if daily dose under 750mg (average dose is 400mg/D)
 - Very popular for rheumatoid arthritis
 - Do baseline and check yearly
 - Know your cumulative dose (CU)
- 12
- 13
- 14 **The Super Fat Blocker-XENICAL**
- Blocks 30% of ingested fats

- Can produce flatulence
- Uncontrolled bowel movements
- During exam-
- **KEEP THE DOOR OPEN**
- Have Junior partner do exam

15 **Xenical and the Eye**

- Inhibits fat soluble vitamin absorption
- Vitamins A and E/ Antioxidants
- Increased risk of ARMD??/cataract
- Manufacturer suggests multivitamin supplement daily.
- ARED study proved that nutrition affects course of ARMD

16 **The Desperate Contact Lens Patient**

- Teenage girl-I will not wear glasses-Wants green, “30 day” lenses
- Acne
- Allergies-Penicillin/sulfa
- Asthma

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- **PEH: Frequent “pink eye”**
- **Meds:**
Topical Benzoyl peroxide
Accutane PO
Ovral 28
Visine 3-4 times daily

18 **Management?**

- **Fit with CL’s**
- **-What kind??**
- **Drug Side-effects?**
- **Treatment?**

19 **Cardiovascular Agents**

- Diuretics
- Cardiac glycosides
- Nitrates
- Anti-Arrhythmics
- Ca++ channel blockers
- Beta-blockers

- ACE inhibitors

20 **Cardiac Hemodynamics**

- Contractility-Intropy
- Cardiac Output
- Peripheral resistance

21 **Diuretics**

- Lose salt and H₂O @ @ @ @
- Renal physiology
- Thiazide-Sulfa
- Loop = Potent
- K⁺ sparing
- CAI's = Sulfa
- New CAI dose
- Osmotics = Sugar?
- Angle closure mechanism? @ @ @ @ @ @ @ @

22 **The Hallucinating Senior Citizen**

- 72 y/o male - Visual disturbance @ @ @ "Lights look like covered in snow with halos"
- Vision getting blurry X 2 months
- Told by primary care doc to get new glasses

23 **Anti-anginal Agents**

- Nitrates
- Coronary artery dilators

24 **THE CASE OF THE CLOUDED CORNEA**

- 64 y/o male without complaints
- BVA: 20/25 OU
- Meds: Cholestyramine resin-Lipids
Niacin-Lipids
Cordarone-Arrhythmia
Lasix-Hypertension
- SLE: "Strange corneal deposits"

25 **Watch for the anti-arrhythmic Agents @ @ @ @**

- All can produce reversible decrease in acuity

- Optic neuritis has occurred
- Permanent loss of vision with amiodarone

26 **Adverse Effects**

- Mydriasis
- Blurred Vision @ @ @ @
- Night Blindness @ @ @ @
- Decreased Color Vision
- Optic Neuritis @ @ @ @
- Diplopia
- Verticillata

27

The Bespeckled Bleeder

- 66 y/o white male
- Bloody OD discovered this AM
- Daily nose bleeds
- bruises on arms X 2 weeks
- His eye doctor says that this is normal

28 **If they like to drink, skip the Tylenol**

- Acetaminophen contraindicated in alcoholics
- Can not exceed 4gm/day in normal adults
- Liver failure produces excessive bleeding @ @ @ @

29 **Clotting Tests**

- APTT: Activated partial thromboplastin time-Monitor heparin and warfarin
- PT: Prothrombin time-Monitor Warfarin
- INR: Combination of both

30 **Calcium Channel Blockers**

- Mechanism-Vasodilation
- Multiple uses
- Value in low-tension GLC???
- Side-effects:
Amplify beta-blocker SE's
Potentiate bleeding with ASA
- Diltiazem and verapamil most common agents

31 **Systemic Beta-Blockers**

- **Betaxolol**
- **Propranolol**
- **Timolol**
- **Carteolol**
- **Acetbutolol**
- **Atenolol**
- **Labetolol**

32 **Beta-Blocker Indications**

- **Hypertension**
- **Angina**
- **Arrhythmia**
- **Migraine**
- **Anxiety**

33 **Name 8 potentially fatal Beta-blocker Adverse Effects**

- **Adverse Effects**
 1. Asthma
 2. Coronary insufficiency
 3. Heart block/arrhythmia
 4. Depression
 5. Diabetics
 6. Anaphylaxis reversal
 7. Lipid abnormality in coronary artery disease
 8. Impotence (just feel like you want to die)

34 **On-going patient evaluation is critical**

- 10% of patients have obvious contraindications to beta-blockers
- 12% of “normals” will develop significant side-effects that will require discontinuation of TX
- Good VS Bad side-effects

35 **Very Popular for BP Control**

- Slow the heart rate (Bradycardia)@@@
- Dilate arteries-Lower BP/Decreased perfusion@@@
- Reduced cardiac work load (Decreased cardiac output/ischemia)@@@
- Decreased cardiac sensitivity (Heart block/1st/2nd, 3rd degree
- P---QRS----T)

36 **Combining Topical Beta Blockers with Oral Beta Blockers**

- Not a good idea
- Increase in side-effects@@@@

- More severe side-effects@@@
- Less topical efficacy@@@

37 **Anti-Hypertensive Therapy**

- Proper Staging
- Stepped Care
- Combination Therapy-Synergy
- Sound familiar to something else?

38 **A.C.E. Inhibitors**
(NOT ACE VENTURA)
THE -PRILS

- Captopril
- Enalapril
- Lisinopril

ANTI-HYPERTENSIVES

39 **Anti-adrenergics-act peripherally-reduction in peripheral resistance**

- Reserpine
- Guanethidine
- Prazosin

40 **Hyperlipidemia**

Lipids:

- Cholesterol
- Triglycerides

Lipoproteins

- Chylomicrons
- VLDL, ILDL, LDL, HDL

41 **Anti-hyperlipidemic Agents**

Bile Acid Sequestrants:

- Cholestyramine

HMG-CoA Reductase Inhibitors

- Lovastatin
 - Pravastatin
 - Simvastatin
- Cataracts???????????

42 **Accelerated Lipid Metabolism**

- Probucol
- Clofibrate
- Dextrothyroxine
- Gemfibrozil
- Nicotinic Acid

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44 **The Case of the “Sugar Free” Patient**

- 67 Y/O male with a complaint of red, mildly tender OD X 3 D
- PEH: Occurred several times in the last 3 years. Tx'd successfully with eye drops from previous eye doctor
- Med Hx: Hypertension and Type II diabetes
- Meds: Diabinese, Lasix and Inderal

45 **Objective**

- Sectoral Injection OD
- Blanches with 2.5% phenylephrine
- DX??
- EXCELLENT!! You're correct
- Episcleritis
- TX: FML TID
- Ibuprofen 600mg QID

46 **The Bad News**

Three days later the patient's internist calls and he's as mad as hell. I quote “Are you trying to kill my patient”-End of quote.

Patient sent to hospital after collapsing with blood sugar of 30

WHAT HAPPENED?

47 **Diabetes and NSAIDs: More Bad News**

- Prostaglandins produce vasodilation of afferent arterioles that supply the unit of the kidney, the nephron. Dilate afferent arteriole increase renal filtration.
- NSAIDs produce constriction of afferent arteriole and compromise renal function @ @ @ @
- Deadly in diabetics

48 **Reference Material**
Facts and Comparisons