

Pharmacists Greatest Nightmares

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Patients _____ Phone # _____
Name _____ Date _____

RX

**LOOKS HARMLESS
DOESN'T IT-
HOWEVER, MISTAKES
CAN JUST KILL YA**

Generic equivalent
unless otherwise noted
Do NOT substitute

Refill _____ Times

DEA NO _____
Phone NO _____

The Smoking Gun

- RX is a legal document
- Once it leaves your office you have lost control
- Any mistakes are now in hard print
- Pharmacy that fills script, owns the script
- Legal document can be ordered into court
- Mistake on glasses RX-remake the glasses
- Mistake on critical drug RX-lose the farm

WHY IS EVERYTHING WRITTEN IN A DEAD LANGUAGE (LATIN)?

1. It makes the Doctor look smarter
2. Pharmacists can only read Latin
3. It is code for "I GOT MY MONEY, NOW YOU GET YOURS".
4. Doctors have bad hand writing
5. Julius Ceasar was the first pharmacist

PHARMACEUTICAL WEIGHTS AND MEASURES OR HOW BIG IS GRANDMAS TABLESPOON

- METRIC
- APOTHECARY
- HOUSEHOLD

Special dosing formulas

- Age
- Weight
- Body Surface Area

Young's Rule

- Based on age
- $\frac{\text{Age (yrs)}}{\text{Age} + 12} \times \text{Adult dose} = \text{Pediatric dose}$
- Example: 6 y/o gets acetaminophen q 4h. Adult dosage = 650mg q 4h
- $\frac{6}{6 + 12} \times 650\text{mg} = 216 \text{ mg}$

Webster's Rule (Modified Young's)

- Based on age (modified- Kids are fatter now)
- $\frac{\text{Age} + 1 \text{ (yrs)}}{\text{Age} + 7} \times \text{adult dose} = \text{Pediatric dose}$
- Example:
- $\frac{6 + 1}{6 + 7} \times 650 = 350\text{mg}$

Clark's Rule

- Based on weight
- More realistic and individualized
- Kids are larger today/greater obesity
- $\frac{\text{Wt (Lbs)}}{150} \times \text{adult dose} = \text{Pediatric dosage}$
- Example: 50/60/70 lb 6 Y/O's/ acetaminophen at adult dose of 650mg q 4h
- $\frac{50/60/70}{150} \times 650\text{mg} = 216/260/303\text{mg}$

Body Surface Area (BSA)

- Complicated logarithmic formulas
- Very precise calculation
- Mosteller has simplified formula
- $M = \text{the square root of: } \frac{\text{Ht (cm)} \times \text{Wt (kg)}}{3600}$
- or $\frac{\text{Ht (in)} \times \text{Wt (lbs)}}{3131}$

BSA example

- 3ft 3in tall child weighting 44 lbs has a BSA of:
- $\frac{39 \text{ in} \times 44 \text{ lbs}}{3131} = 0.548\text{-sq rt} = 0.74 \text{ sq meters}$
- $\frac{100 \text{ cm} \times 20 \text{ kg}}{3600} = 0.555\text{-sq rt} = 0.75 \text{ sq meters}$
- Quick BSA dose calculation =
- Adult BSA = 1.73 sq M/adult dose acetaminophen = 650mg q 6h
- Child's dose = $\frac{0.74 \text{ sq. M}}{1.73 \text{ sq. M}} \times 650\text{mg} = 282\text{mg}$

Simple weight/dose calculations

- PDR/package insert/facts and comparisons lists dose by weight
- Weight is almost always in Kg
- Dose is the full 24 hour dose
- Must know the frequency of dosing/D
- Must know the concentration of liquid dosage forms
- Must know the strengths of all solid dosage forms

If the standard pediatric DAILY dosage of prednisolone is 1mg/kg in divided dosage
 Prescribe a standard dose for a 33 lb child to be administered TID
 NOTE pediaped syrup contain 5mg/5ml prednisolone

PEDIATRIC DOSAGE CALCULATION

- CONVERT WEIGHT TO KILOS LBS/2.2 = KILO $33/2.2 = 15$ KILOS
- DOSE OF 1MG/K X 15 K = 15MG TOTAL DAILY DOSE
- DIVIDE DAILY DOSE BY NUMBER OF DAILY DOSAGES $15MG/3 = 5MG$ PER DOSE
- CONC = 5MG/5CC ADMINISTER 5 CC TID PO

WHEN COUNSELING PATIENTS BE SPECIFIC

- Ointments---APPLY
- Ophthalmic solutions or suspensions--INSTILL
- Suppositories---INSERT
- Oral preparations---TAKE

WHAT'S WRONG WITH THIS RX?

You prescribe Pilopine HS gel.
 You want her to use it once daily at bedtime in the left eye specifically as you showed her in your office

Patients Mary Edwards Phone # _____
 Name _____ Date _____

RX **Pilopine HS Ophth. Gel**
5 GM Tube

Sig: Instill QD OS at h.s. ut dictum

Generic equivalent unless otherwise noted
 Do NOT substitute

DEA NO _____

Refill 5 Times

Phone NO _____

Never use the term:

- 1. HS
- 2. OS
- 3. QD
- 4. UT DICT
- 5. You don't "INSTILL" a gel

You should not use the term:

- 1. SOL.
- 2. BID is wrong
- 3. Never use the .5% designation
- 4. You don't "INSTILL" eye drops

CLINICAL PEARLS

- USE GENERIC IF THERAPEUTICALLY EQUAL TO BRAND PRODUCT
- STATE THAT IT IS AN OPHTHALMIC PRODUCT
- SUSPENSION VS SOLUTION
- CHRONIC MED-MOST ECONOMIC SIZE
- DOSE BETA BLOCKERS q 12H
- ONLY ENOUGH REFILLS TILL NEXT SCHEDULED VISIT

You want M.E. to take 250mg amoxicillin orally 3 times daily for 10 days. She can't swallow pills.

Patients _____ Phone # _____
Date _____

Name

RX

Generic equivalent
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Do NOT substitute

DEA NO _____

Refill _____ Times

Phone NO _____

Proper notation?

- 1. Take i teasp 3 times daily
- 2. Take 5cc q 8h PO X 10D
- 3. Instill 5cc PO TID
- 4. Take 5cc TID PO X 10D
- 5. Take 5cc q 6h PO X 10D

Clinical Pearls

- Suspensions are excellent alternative for people that can't take pills
- Must know concentration
- Note that a suspension must be shaken
- Must give enough to cover 10 days dose
- Note 10 day limit on acute vs chronic meds
- No refills on acute meds

CLINICAL PEARLS

- LIST DOSAGE FORM-SUSPENSION
- ENOUGH MEDICINE FOR 10 DAYS-
- 8 HOUR DOSE INTERVAL
- PO = BY MOUTH
- PUT TX DURATION IN INSTRUCTIONS-10 DAYS
- NO REFILLS OF ACUTE MEDS

You want M.E. to use Pred Forte 1% every hour OD for 3 days, then 2 hours for 3 days, then 4 times daily for 3 days, then twice daily for 3 days, then once daily for 3 days

Patients _____ Phone # _____
Date _____

Name

RX

Generic equivalent
unless otherwise noted
Do NOT substitute

DEA NO _____

Refill _____ Times

Phone NO _____

Clinical Pearls

- Don't try to put complex instructions on a 2 X 2 label
- Don't use generic steroid suspensions
- Write out instructions and take time to counsel patient in office
- Write shake well on RX-Help the pharmacist to do what's important

Prescription drugs are always more dangerous than OTC drugs

- 1. TRUE
- 2. FALSE

OTC CLINICAL PEARLS

- Document patient counseled on drug side-effects and contraindications and given proper directions for a specific reason (DX)
- Do not prescribe OTC in RX dose if not in your privileges-illegal/invalidates malpractice insurance

Which of the following potentially fatal conditions can be worsened by topical beta-blockers?

- Adverse Effects
- 1. Asthma
- 2. Coronary insufficiency
- 3. Heart block
- 4. Depression
- 5. All of the above

Never give a diabetic a beta-blocker.....#1

- 1. If they are prone to hypoglycemia
- 2. If they are prone to hyperglycemia
- 3. If they are a type I diabetic
- 4. If they are a type II diabetic
- 5. If they have any sign of retinopathy

What Does Chloramphenicol Have in Common with Diamox?
The answer will just kill you (or your patient)

- Adverse effect?
- 1. Worsens sickle cell disease
- 2. Steven-johnson syndrome
- 3. Sulfa allergy with both
- 4. Both induce aplastic anemia
- 5. Both produce hyperglycemia in diabetics

The Bleeder

- 76 y/o white male with periocular bleed OS
- Does not drink
- GLC patient
- HX of recent, recurrent bruises on arms and epistaxis
- Normal DFE, IOP
- In spite of being married, denies trauma

Current Meds

- 1 325mg ASA/D
- Timoptic 0.25% BID OU
- Trusopt TID OU
- Zantac
- Glucosamine
- Vitamin E 400U BID
- Vitamin C
- Multivitamin

Which meds can make you bleed?

- 1. ASA, Zantac
- 2. ASA, Vit E, Trusopt
- 3. ASA, Vit E, Timoptic
- 4. Glucosamine + Tylenol
- 5. ASA + Glucosamine

Bleeder

- BP: 140/68
- CBC:WBC: 1.1VL, RBC: 2.77VL, HCT: 29VL, HGB: 9.9VL, PL 57K VL, Neut: 0.3VL, Lymph, 0.7VL, Mono:0.1VL, Neut: 18%VL, Lymph 61%H
- PT, PTT: Both normal
- Renal and Hepatic: Normal
- Glucose: 97nml

What Dirty Little Secret does Sulfacetamide share with HCTZ, Diabinese, Acetazolamide and Celebrex??

- 1. They are all anticholinergic medications
- 2. They are all parasympholytic medications
- 3. They are all fluoroquinolones
- 4. They are all diuretics
- 5. They are all sulfonylureas

What drug is most commonly associated with SJ syndrome?

- 1. Sulfonylurea
- 2. Cephalosporins
- 3. Tetracyclines
- 4. Penicillins
- 5. Fluoroquinolones

Your patient has non-symptomatic sickle cell disease-the best way to activate it is to give them a:

- 1. Penicillin
- 2. Tetracycline
- 3. Topical sulfonylurea
- 4. Oral Sulfonylurea
- 5. Oral steroid

Alcohol + _____ = Trouble

1. ASA-platelet inhibition
2. APAP-liver failure
3. NSAIDS-Renal failure
4. Tetracycline-Blocks calcium

Don't even think about giving a pregnant patient.....

1. Tetracyclines
2. Fluoroquinolones
3. Sulfonamides
4. NSAIDS
5. Prostaglandins

Never Give a Diabetic-Part II:

1. NSAIDS
2. Tetracycline
3. Fluoroquinolones
4. Penicillin
5. Sulfonylureas

Know Your Pharmacokinetics

- Oral hypoglycemics highly protein bound
- NSAID's also highly protein bound
- Motrin displaces diabenese from protein binding sites.
- Diabenese travels to pancreas and stimulates extra insulin and results in drop of blood glucose

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

Which eyedrop can produce flashes and floaters?

1. Timoptic
2. Pilocarpine
3. Alphagan
4. Xalatan
5. Trusopt

If You Prescribe Narcotics, let your patient know NOT TO:

- Drink alcohol
- Drive
- Operate machinery
- Don't exceed recommended dosage
- No anti-cholinergics

Never Give an Oral Steroid to:

- Psychotics
- Diabetics
- Hypertensives
- GI ulcer patients
- CHF patients

I didn't know an antihistamine could do that!!!

Adverse effects

- Drowsiness
- Elevated IOP
- Cardiac arrhythmia

- Mechanism

So Your patient says his heart medication is making his vision fuzzy- Just change his glasses or, maybe save their life

- Digoxin and TI is an important relationship

If You're allergic to ASA never take these:

The Drugs

- Motrin
- Feldene
- Advil
- Indomethacin
- Celebrex
- Vioxx
- In other words-ALL NSAIDS

If your patient has an angle closure glaucoma attack and has diabetes don't give them:

The Drug

- Glycerin (Osmoglyn)

The Adverse effect

- Elevated glucose

Viagra-The Good

- Affects nitric oxide receptors and may affect ocular blood flow-Useful in open angle glaucoma?
- In a recent study 100 male glaucoma patients take Viagra for one year

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

The 3-A's of Adverse Effects

Adverse effects are Allegedly Associated with:

- Autonomics
- Allergy
- Ancestry

Autonomics

- Central nervous system = brain and spinal cord
- Peripheral nervous system = Voluntary and Involuntary (autonomic)
- Autonomic = Sympathetic and Parasympathetic
- Try to affect one receptor, you affect them all

Allergy = Too much of a Good Thing

- Over protective Immune System
- Not Dose dependant, a little drug goes a long way = anaphylaxis
- First exposure does not produce a reaction