Oral Antibiotics
Feel More Confident and Comfortable in One Hour
Prescribing Oral Antibiotics for Your Patients

Greg Caldwell OD, FAAO
American Academy of Optometry
Seattle, WA 2013

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Disclosures

• Greg A. Caldwell, OD, FAAO will mention many products, instruments and companies during our discussion, I don’t have any financial interest in any of these products, instruments or companies.

• In the past 12 months I have lectured or participated in a focus group which I received a honorarium for:
  – Allergan, Alcon, Valeant and SARcode Bioscience

• All of these cases have entered/referred to my practice

#aaoptom13

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Patient Wants Second Opinion
42 year old woman
OD red and painful

Va 20 / 20
cc 20

Current Correction
R -2.00-1.00 x 180
L -3.00-1.00 x 180

EOMS: full, unrestricted
PERRL (-)APD
CT: ortho D/N
CF: full by FC OU

New Diagnosis?

Recurrent bacterial conjunctivitis secondary to dacryocystitis
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October 26, 2013

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Dacryocystitis

Treatment discussion?
- Topical antibiotics
- Oral antibiotics

Remember to check for?
- Patient is allergic to Penicillin and Keflex
- Which antibiotic would you use?

Medical History

Before we Rx any medications we take a thorough medical history which includes:
- CC
- HPI
- ROS
  - Kidney disease, liver disease, dialysis
- PFS History
- Current Medications
- Allergies...Adverse Reactions/Allergies
- Pregnancy...any chance you might be pregnant?

Adverse/Allergic Reaction

Hypersensitivity—fever, rash, photosensitivity or ANAPHYLAXIS
- Hematologic—neutropenia, eosinophilia, increase in PT/PTT
- GI—nausea, vomiting, diarrhea
- Liver Failure
- CNS—dizziness, HA, confusion, seizures
- Ototoxicity
- Cardiac—dysrrhymias

FDA Pregnancy Categories

Category A—studies in pregnant women, no risk
Category B—animal studies no risk but human not adequate...or...animal toxicity but human studies no risk...safe
Category C—animal studies show toxicity human studies inadequate but benefit of use may exceed risk...avoid
Category D—evidence of human risk but benefits may out weigh risks...avoid
Category X—fetal abnormalities, risk>benefits...avoid

Renal Impairment

Identify patients on hemodialysis
Adjustment made by patient’s creatinine clearance (CrCl)...ml/min
Work with patient’s PCP/Internist

Antibiotic Paradigm

Penicillin  Macrolide  Cephalosporin  Quinolone  Sulfonamide
Augmentin  Zithromax  Keflex  Cipro  Bactrim
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Cross Reaction

- Penicillin
- Macrolide
- Cephalosporin
- Quinolone
- Sulfonamide

- Augmentin
- Zithromax
- Keflex
- Cipro
- Bactrim

Augmentin

- Amoxicillin and potassium clavulanate
- Kills everything, good for everyone
- Safe in pregnancy...category B
- Watch for PCN allergies
- Adults: 250, 500 and 875 mg
  - 125 mg of potassium clavulanate
- Children <100 pounds: oral suspension 28-48 mg/kg divided into 2 doses
- Covers Staph, Strep and Haemophilus influenzae

- Augmentin
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Zithromax (azithromycin)

- Macrolide antibiotic (erythromycin)
- Drug of choice in PCN sensitive patients
- All age groups and pregnancy category B
- No renal adjustment
- Adult:
  - 250 mg bid (day1), 250 mg qd (day 2-5), 6 pack
  - 500 mg qd x 3 days, tri-pack
- Children<16: 10 mg/kg (day1), 5 mg/kg (day 2-5)
- Covers Staph, Strep and Haemophilus influenzae
- Better tolerated than erythromycin, little GI upset
- Chlamydia...1 g qd

Zithromax (azithromycin)

- “The Vegas Drug” - Chlamydia...1 g qd

Keflex (cephalexin)

- Cross reaction with PCN sensitive patients
- 1st generation, moderately effective against PCN-ase
- Good for Gram +, not good for Haemophilus (-)
- Available in 250 and 500 mg
- Category B
- Adult: typically, 500 mg bid x 1 week
  - Maximum 4 g in 24 hrs
- FYI...Drug of choice for blow out fractures
**Ceftin (cefuroxime)**
- Minimal cross reaction with PCN sensitive patients
- 2nd generation
- Better for Haemophilus (-)
- Children: 3 months to 12 years old, oral suspension 15 mg/kg divided into 2 doses x 10 days
- Available in 125, 250 and 500 mg
  - FYI: adults typically 250 mg bid x 10 days
- Category B

**Cipro (ciprofloxacin)**
**Levaquin (levofloxacin)**
- In my opinion, an end of the line, antibiotic to use...
- allergic to PCN, cephalosporins, macrolides...
- Really effective
- Would avoid if pregnant...category C
- Only use 18 years or older (oral)
- Cipro and Levaquin available in 250, 500 and 750 mg
  - Cipro 750 mg for only severe infections
  - 500 mg bid x 1 week-Cipro.
  - 500 mg qid x 1 week-Levaquin
- Levaquin - tendon ruptures

**Sulfa Drugs**
- Limited use...last line of defense
- Contraindicated in pregnancy and sickle cell disease
  - Category C
- High incidence of Steven-Johnsons
- Cross reaction with: oral hypoglycemics, CAI’s, celebrex and thiazide diuretics...all sulfa based
- Bactrim SS
  - 400 mg sulfamethoxazole/ 80 mg trimethoprim
  - 1-2 tab PO bid
- Bactrim DS (double strength)
  - 800 mg sulfamethoxazole/ 160 mg trimethoprim
  - 1 tab PO bid

**Summary**

**How About**
- PCN, Ampicillin and Amoxicillin
- Dicloxacinill, 250mg qid x 1 week

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What group of antibiotics are we missing?

<table>
<thead>
<tr>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigamox gtts TID</td>
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<tr>
<td>Zithromax</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Dilation and Irrigation</th>
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<tbody>
<tr>
<td>Confirmed nasolacrimal duct blockage</td>
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<tr>
<td>DCR, dacryocystorhinostomy</td>
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</tbody>
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48 year old man
OU red, gritty, sandy and dry feeling

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A Closer Look

Rosacea Blepharitis (Inflammatory Blepharitis, MGD)

<table>
<thead>
<tr>
<th>Diagnosis?</th>
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<tbody>
<tr>
<td>Rosacea</td>
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<tr>
<th>Treatment?</th>
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<tbody>
<tr>
<td>In my opinion, most under treated condition</td>
</tr>
<tr>
<td>Warm compresses</td>
</tr>
<tr>
<td>Lid hygiene</td>
</tr>
<tr>
<td>Artificial tears</td>
</tr>
<tr>
<td>Omega 3 fatty acid</td>
</tr>
<tr>
<td>EPA and DHA total 1800 mg (900 mg minimum)</td>
</tr>
<tr>
<td>Dermatological consult (Acne Rosacea)</td>
</tr>
<tr>
<td>Oral antibiotics...??</td>
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</tbody>
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What findings support your diagnosis?
Telangiectasias
Erythema of the cheeks, forehead and nose
Rhinophyma
Indicates chronic

Let us get a closer look

Diagnosis

What group of antibiotics are we missing?

Blepharitis (Inflammatory Blepharitis, MGD)
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Minocycline / Doxycycline
- Drug of choice for marginal inflammatory blepharitis (posterior blepharitis)
- AB, anti-inflammatory and anti-collagenase
- Inhibits lipase enzyme
- No renal adjustment
- 50-100 mg qd-bid 2-12 weeks (pulse)
  * Lower maintenance dose
- 20 mg Periostat (Doxycycline)
  * Helpful in those with stomach or GI sensitivity
  * Excellent for those requiring long maintenance dose

My Paradigm for Minocycline / Doxycycline

- Status of MG
  * Inspissated
  * Turbid
  * Clear
- Minocycline / Doxycycline Paradigm
  * Maximum dosage for 2-12 weeks (pulse)
  * 100 mg BID, QD
  * 50-100 mg qd while turbid
  * 20 mg longer treatments
  * Periostat (Doxycycline)
  * 20 mg if maintenance dose needed

Customize Treatment
- 50 mg Minocycline with pill cutter (25 mg)
- Oracea 40 mg of Doxycycline total
  * 30 mg immediate release
  * 10 mg sustained release
- Alodox KR
  * 30 mg Doxycycline
  * Ocusoft lid scrub
- AzaSite (azithromycin ophthalmic solution) 1.0%
  * Initiate early in treatment
  * Adjunctive when patient is already on Doxycycline
  * Alternative in states that do not have oral therapeutic licensure

Precautions With Oral Tetracycline Analogs
- Enhanced photosensitivity
- Avoid in children and pregnancy (Category D)
- Can enhance Coumadin
- Can enhance the action of digoxin
- Long term use with increase risk of joint cancer?
  * 1 paper/ study, not regarded as highly reliable study
  * Further investigation discredited the association
- Benign intracranial hypertension, reported cases
  * 17 cases from 1976-2002

Benign intracranial hypertension
“IT’s not rare if it’s in your chair”

8-19-2010
8-31-2010
Minocycline

- Less photosensitivity
- Less GI upset
- Less bacterial resistance

Successfully Treated

- Warm Compresses
- Lid Scrubs
- Artificial Tears, Systane Balance
- Omega 3 (1500 EPA and DHA)
- Mino 100 mg PO 6 weeks, 50 mg 3 months, 20 mg maintenance (Doxy)
- Steroids, Tobradex qid (5 weeks with taper)
  - Moderately red and thickened lid margins
  - Marginal infiltrates

What is an Inspissated MG?

I Can’t Believe It’s Not Butter® Squeeze

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Thank You
and
Hope You Enjoyed
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