Anterior Segment Disease and Treatment

presented by
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for
The Vision Institute of Canada Conference
Sunday, October 24, 2010

Catania: “One more time! Let’s make this the last, OK?”
Sunday, October 24th

Session 10 (9:00AM to 10:40AM): Ant. Seg Disease & Treatment
- Organizing and maintaining a therapeutic eye care practice
- Practical hints to deal with ocular urgencies and emergencies

Nutrition Break (10:40AM to 11:00AM)

Session 11 (11:00AM to 12:45PM): Ant. Seg Disease & Treatment
- The CE Jeopardy game: “I’ll take anterior segment for $200”
- Clinical cases of varying degrees of difficulty in the classic Jeopardy game format

TPA issues in Optometric Practice

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<td>Books &amp; journals</td>
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Anterior Segment Therapeutics

Generic Drug Classification (alphabetical)

- Anti-allergics (topical and oral)
- Anti-infectives (topical and oral)
- Anti-inflammatories (topical and oral)
- Other categories
- Considerations in prescribing

Anti-allergics (topical and oral)
- Antihistamines (e.g., Albalon, Patanol)
- Antihistamines with decongestants
- Anti eosinophilis (Alocril)
- Mast cell stabilizers (e.g., Opticrom, Alomide, Crolom)

Anti-infectives (topical and oral)
- Antibiotics/antibacterials
- Antifungals
- Antivirals
- Combinations (with steroids and/or vasoconstrictors)
Examples of “some” anti-infective topicals

<table>
<thead>
<tr>
<th>Antibiotics</th>
<th>Antifungal</th>
<th>Antivirals</th>
<th>Combs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azithromycin</td>
<td>Natamycin</td>
<td>Acyclovir</td>
<td>Blephamide</td>
</tr>
<tr>
<td>Besivance</td>
<td></td>
<td>Famciclovir</td>
<td>Garasone</td>
</tr>
<tr>
<td>Erythromycin</td>
<td></td>
<td>MCV-A</td>
<td>Maxidex</td>
</tr>
<tr>
<td>Gentamicin</td>
<td></td>
<td>Viroptic</td>
<td>Maxitrol</td>
</tr>
<tr>
<td>Neosporin</td>
<td></td>
<td></td>
<td>Pred-G</td>
</tr>
<tr>
<td>Ocuflax</td>
<td></td>
<td></td>
<td>Pentasone</td>
</tr>
<tr>
<td>Polyoxin</td>
<td></td>
<td></td>
<td>Tobradex</td>
</tr>
<tr>
<td>Tobramycin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vigamox</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zymar</td>
<td></td>
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<td></td>
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</tbody>
</table>

Examples of “some” anti-inflammatories

- **Steroids**
  - Alrex
  - Cortisporin
  - Decadron
  - Dexamethasone
  - Flarex
  - FML
  - FML Forte
  - Lotemax
  - Opticort
  - Pred Forte
  - Pred Mild
  - Vexol

- **NSAIDs**
  - Acular
  - Nevanac
  - Ovagen
  - Voltaren

- **Combos**
  - Blephamide
  - Garasone
  - Maxidex
  - Maxitrol
  - Pred-G
  - Pentasone
  - Tobradex

- **T-cell modulators**
  - Restasis

Steroid and Derivative | Decrease in Corneal Inflammation
---|---
Prednisolone acetate 1% | 51%
Prednisolone phosphate 1% | 28%
Dexamethasone alcohol 0.1% | 40%
Dexamethasone phosphate 0.1% | 19%

An additional emerging classification: **Biologics**

Defined by the FDA as:
- Vaccines
- Somatic cells (e.g., stem cells, ELAM agonists)
- Gene therapies
- Tissue and recombinant proteins
  - Monoclonal antibodies
  - Antibody fragments
- Allergens
- Blood components
  - Tumor necrosis factor (TNF) inhibitors
  - Interleukin-1 (IL-1) antagonists
  - Interferon agonists
### Other categories

- Analgesics (narcotic and non-narcotic; topical and oral)
- Artificial tears (Drops and ointments)
- Dilators and cycloplegics
- Hypertonic saline (drops and ointments)
- Nutritionals (vitamins, etc., etc.)

### Additional in-office medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Potential usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotic ung. &amp; qtts</td>
<td>Initial in-office treatments</td>
</tr>
<tr>
<td>5% Homatropine qtt</td>
<td>Dilation for trauma, etc.</td>
</tr>
<tr>
<td>Steroid ung. &amp; qtts</td>
<td>Initial in-office treatments</td>
</tr>
<tr>
<td>2% Pilo &amp; timolol qtts</td>
<td>Acute angle closure</td>
</tr>
<tr>
<td>Acetazolamide (Diamox) or Neptazane</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>Oral glycerin (Osmogly)</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>Povidone iodine solution</td>
<td>Antiseptis (procedural)</td>
</tr>
<tr>
<td>70% isopropyl alcohol</td>
<td>Antiseptis (wound)</td>
</tr>
<tr>
<td>Ringer’s solution</td>
<td>Irrigation (burns, etc.)</td>
</tr>
</tbody>
</table>

### Additional in-office instrumentation

<table>
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<tr>
<th>Instrument</th>
<th>Potential usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head loup</td>
<td>Gross examination</td>
</tr>
<tr>
<td>Jeweler’s forceps</td>
<td>Multiple uses</td>
</tr>
<tr>
<td>Toothed &amp; dilla forceps</td>
<td>For grasping tissue &amp; cilia</td>
</tr>
<tr>
<td>Desmarres lid retractor</td>
<td>Lid or corneal procedures</td>
</tr>
<tr>
<td>Westcott or iris scissors</td>
<td>Fine cutting (e.g., skin tags)</td>
</tr>
<tr>
<td>Punctal dilator</td>
<td>Lacrimal dilation</td>
</tr>
<tr>
<td>Lacrimal cannulus</td>
<td>Lacrimal irrigation</td>
</tr>
<tr>
<td>3 or 5 cc syringes</td>
<td>FB removal, cyst drainage, etc.</td>
</tr>
<tr>
<td>Hypodermic needles 2” 18 &amp; 22-g; 5/8” 25-g</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>Golf club spud</td>
<td>FB removal</td>
</tr>
<tr>
<td>Camura spatula</td>
<td>FB removal and scrappings</td>
</tr>
<tr>
<td>Alger brush (diamond burrs ?)</td>
<td>Hemosiderosis &amp; RCE</td>
</tr>
<tr>
<td>Instrument tray (Sterilizer ?)</td>
<td>Cleaning/storing instruments</td>
</tr>
</tbody>
</table>

### Additional in-office perishable supplies

<table>
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<tr>
<th>Supplies</th>
<th>Potential usage</th>
</tr>
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<tbody>
<tr>
<td>Culture media (booth &amp; agar)</td>
<td>Conj. &amp;/or corneal cultures</td>
</tr>
<tr>
<td>Microscope slides (?)</td>
<td>Cytology</td>
</tr>
<tr>
<td>ph paper</td>
<td>For chemical burns</td>
</tr>
<tr>
<td>Disposable plano soft lenses</td>
<td>Corneal bandaging</td>
</tr>
<tr>
<td>Cotton-tip applicators (sterile)</td>
<td>Varied procedures</td>
</tr>
<tr>
<td>Cotton balls (non sterile)</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>2x2” &amp; 4x4” gauze pads</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>Alcohol sponges</td>
<td>Antiseptis procedures</td>
</tr>
<tr>
<td>Eyepads</td>
<td>Pressure patching</td>
</tr>
<tr>
<td>Paper, cloth or plastic tape</td>
<td>“ ” “ ”</td>
</tr>
<tr>
<td>Adhesive remover</td>
<td>Patch removal</td>
</tr>
<tr>
<td>Ammonia ampules</td>
<td>Vasovagal responses (Dr. or pt.)</td>
</tr>
</tbody>
</table>

### Prescribing & Sampling

- Clinical issues
- Legal issues
- Practical (community) issues
- Professional issues
- Corporate issues

### Considerations in prescribing

- Writing the prescription:
  - Drug selection (generic or brand name)
  - Route (topical or oral)
  - Vehicle (topical: solution, suspension, ointment; oral: tablet, capsule, liquid/elixir)
  - Dispense (How much?)
  - Dosage (location, frequency, additional instructions)
Considerations in prescribing

Mr. John Doe

10/24/10

Drug name
Brand name
Generic

Drug name
Route
Topical
Oral

Vehicle
Topical
Solution
Oral
Suspension

Dispensing instructions:
How much (ml, oz, #X tabs/caps)

Dosage: Location (which eye or eyelid – use RE or LE)
Frequency (bid, tid, qid, hs, etc.)
Additional instructions (e.g., Duration, occlude puncta, how to instill, etc.)

Prednisolone 1%, Topical Suspension
5 ml bottle
RE, OD 2X for 10 days

Nicolitz Eye Consultants
1235 San Marco Blvd. #301
Jacksonville, FL 32207
(904) 396-2720
425-4600
7499 Merrill Rd.
Jacksonville, FL 32211
(904) 743-5700

Mr. John Doe

NO SUBSTITUTIONS
LABEL
REFILL TIMES

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Considerations in prescribing

- Writing the prescription:
  - Drug selection (generic or brand name)
  - Route (topical or oral)
  - Vehicle (topical: solution, suspension, ointment; oral: tablet, capsule, liquid/elixir)
  - Dispense (How much?)
  - Dosage (location, frequency, additional instructions)
- Duration (length of therapy)
- Expected outcome

Scheduling issues

- BOV, OV, EOV
- Managed care requirements
- Staff training
- Routine care vs “POC”
- “Stacking” emergencies

Professional fees

- Reasonable and customary
- Is it care or is it your education?
- DON’T UNDERCHARGE!
- Third party/managed care issues

Clinical Challenges

- Do the “easys” first
  - Blepharitis
  - Conjunctivitis
- Careful with
  - Keratitis
  - Uveitis
- Stay in your “comfort zone”

Protocols & “Comgmt” with MDs

- Discuss emergency care
  - Chemical burns
  - Angle closure
  - Corneal ulcers
  - Gross trauma
- Agree on protocols:
  - for emergency care
  - for secondary, tertiary care
  - for problem cases
- Agree on consults vs. referrals
- Agree on post-op comanagement protocols

Pharmacists and PCPs

- Your absolute best friends in primary and TPA care are your local pharmacists and PCPs
- Personal contacts are invaluable
- Phone pharmacists with Rxs
- If you write, write clearly
Coverage, “On-call”
• Remember 24 hours per day, 7 days per week, 365 days per year
• Arrange coverage
• Organize on-call networks
• There are very few true ocular emergencies that require 3:00 am care (more on that in a moment)

“Marketing” TPAs
• Your strongest referral base will be happy, well cared for patients (“The injured paw theory of TPA marketing.”)
• 30 seconds after each exam with all patients will develop your TPA practice better than anything else.

Books and Journal
• Books:
  – Ocular Differential Diagnosis, Roy
  – Ocular Pharmacology, Bartlett & Janus
  – Current Ocular Therapy, Fraunfelder
  – Will’s Emergency Ocular Treatment Manual
  – The full Primary Care series by Appleton and Lange
  – and of course, Primary Care of the Anterior Segment, Catania
• Journals
  – Academy of Ophthalmology Journal
  – American Journal of Ophthalmology
  – British Journal of Ophthalmology
  – Survey of Ophthalmology
  – Review of Ophthalmology & Review of Optometry

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Ocular urgencies and emergencies

OR

“What should or shouldn’t I get out bed for?”

A true ocular emergency…
One requiring care within minutes to hours to save the eye(s) or vision.

US ophthalmologists’ categories…
1.
2.
3.
Categories

- True ocular emergencies (STAT);
- Acute urgencies;
- Subacute urgencies;
- As soon as possible (ASAP)

As soon as possible (ASAP) (Care within 24 to 48 hours)

- Painful lid lesions (e.g., hordeolum)
- Insidious, painless red eye
- Diplopia onset over days to weeks
- Progressive visual loss and/or dimming of vision over days to weeks
- Sudden (within days to weeks) eye turning

Subacute urgencies (Care within 12 to 24 hours)

- Corneal abrasion
  Abrasion vs. Laceration

Subacute urgencies (Care within 12 to 24 hours)

- Corneal abrasion
- Corneal foreign body
  Superficial vs. Penetrating

Subacute urgencies (Care within 12 to 24 hours)

- Corneal abrasion
- Corneal foreign body
- Dull aching eye pain without vision loss
  Probably episcleritis or an early uveitis

Subacute urgencies (Care within 12 to 24 hours)

- Corneal abrasion
- Corneal foreign body
- Dull aching eye pain without vision loss
  Vision fluctuations lasting 15 to 20 minutes with visual phenomena
Acute urgencies
(Care within 6 to 12 hours – “same day”)
- Blunt injury with or without vision loss

**Blunt injuries could do "anything" but the biggie is...**

Acute urgencies
(Care within 6 to 12 hours – “same day”)
- Blunt injury with or without vision loss
- Severe corneal pain with contact lens wear

**Do we really need to discuss this one?**

Acute urgencies
(Care within 6 to 12 hours – “same day”)
- Blunt injury with or without vision loss
- Severe corneal pain with contact lens wear
- Dull aching eye pain with vision loss

Might be uveitis,
**BUT**
**Watch out for...**

Angle closure glaucoma
- Steamy cornea
- Fixed mid-dilated pupil
- IOP(s) > 30
- Chemosis
- Severe ocular pain
- Nausea
- Usually hyperopes

AACG Management
1. 1% or 2% Pilo q 15 mins. for 1 hr.
2. Timolol q 30 mins. for 1 (plus) hours
3. 3 to 5 oz. of glycerine (Osmoglym) PRN
4. IV Mannitol (if not broken in 3 to 4 hrs.)
5. Patient may experience nausea and vomiting.
6. Refer to ophthalmology for iridectomy.

Acute urgencies
(Care within 6 to 12 hours)
- Blunt injury with or without vision loss
- Severe corneal pain with contact lens wear
- Dull aching eye pain with vision loss
- Progressive loss of vision (over days) with headache or jaw pain
True ocular emergencies (STAT) (Immediate care indicated)
- Alkaline burn
  - Minimal phone discussion;
  - Begin copious irrigation with regular H₂O for at least 20 minutes, non-stop (no “neutralizing agents”);
  - Contact poison control or ophthalmic consultant;
  - Call patient back after 20 to 30 mins. and instruct:
    - Continue irrigation and have someone drive them to your office or consultant’s office, if possible;
    - Bring info (e.g., label, etc.) if available of chemical substance.
  - No statues in the park for anyone treating alkaline burns!

True ocular emergencies (STAT) (Immediate care indicated)
- Alkaline burn
- Central retinal artery occlusion
- Flashes and floaters
- Injury with high velocity projectile history
- Sudden loss of vision with or without trauma
- Acute glaucoma (severe pain with vision loss)
- Orbital cellulitis

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Explanation of the Jeopardy Game
- Twenty unknown cases of varying degrees of difficulty are randomly selected by the audience from a PowerPoint projected “Jeopardy” board.
- Upon selection of an unknown case by a volunteer audience member, the case is “generally” presented and approached as follows:
  o Subjective findings
  o Objective findings
  o Clinical photos and diagrams
  o Diagnostic choices to be considered by audience
  o Correct diagnosis presented and discussed
  o Management choices to be considered by audience
  o Correct management presented and discussed
  o “Take home clinical pearls” regarding diagnosis and management
- Upon completion of a case, the “Jeopardy Board” is reprojected and a new case is selected for presentation.
- During the case presentation, correct (and close to correct) answers are rewarded with “prizes” (sumptuous goodies) throughout the presentation.