Handling Complaints in the Community Pharmacy Part 2: Eyes & Ears

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Objectives

- Utilize the QuEST Process to obtain complete historical information when patients present with symptomatic complaints.
- Describe basic concepts of differential diagnosis in terms of triaging self-care conditions.
- Based upon patient history and basic exam findings, differentiate common ophthalmic complaints that are self-treatable from those requiring medical referral.
- Based upon patient history and basic exam findings, differentiate common otic complaints that are self-treatable from those requiring medical referral.

QuEST Process

- Quickly and accurately assess the patient
- Establish that the patient is an appropriate self-care candidate
- Suggest appropriate self-care strategies
- Talk with the patient

QuEST Process

- Quickly and accurately assess the patient.
  - Ask about current complaint (SCHOLAR)
  - Ask about medications and other products
  - Ask about coexisting conditions

SCHOLAR

- Symptoms
- Characteristics
- History
- Onset
- Location
- Aggravating factors
- Remitting factors

Differential Diagnosis

- Simply a mental “list” of possible conditions that might explain a patient’s clinical presentation.
- List is “ranked” according to the clinician’s index of suspicion for each condition.
- List is created based upon a thorough history and exam findings—in most cases, history is most telling.

Pharmacists utilize differential diagnosis to:
  - distinguish self-treatable conditions from those requiring medical referral.
  - distinguish a problem/symptom as being caused by drug therapy versus by a new or worsening condition.
Role of the Pharmacy Technician

- When patients have symptomatic complaints or ask for OTC recommendations, obtain the pharmacist for a self-care consult.

Common Eye Symptoms

- Red eye
- Dry eyes
- Eye pain
- Visual disturbances or changes
Evaluation of the Red Eye

Inflammation
- Bacterial
- Viral
- Fungal
- Parasitic
- Drug-related
- Contact lens

Hemorrhage
- Conjunctival
- Subconjunctival

Common Differentials of Red Eye

Conjunctival Disease
- Infection (bacterial, viral, Chlamydia)
- Allergy
- Foreign body
- Subconjunctival hemorrhage
- Pinguecula
- Pterygium
- Conjunctivitis

Corneal Disease
- Herpes simplex
- Adenovirus
- Herpes zoster
- Keratoconjunctivitis sicca
- Chemical trauma
- Chemical burn
- Corneal ulceration (with or without concomitant infection)

Uveal Tract Disease
- Primary iritis and choroiditis
- Secondary iritis (infection, trauma)

Systemic Diseases (collagen vascular)

Diseases of the Eyelid and Orbit
- Blepharitis
- Chalazion
- Hordeolum
- Dacryocystitis
- Cellulitis
- Hemorrhage

Intraocular Disease
- Acute glaucoma
History and Key Symptoms

- **History**
  - Duration of redness
  - Rapidity of onset
  - Patient’s activity at the time
  - Quality and severity of symptoms
  - Ophthalmic history, medication history, PMH

- **KEY SYMPTOMS**
  - Visual changes
  - Pain
  - Itching
  - Crusting in the morning
  - Tearing
  - Mucoid or purulent discharge
  - Photophobia
  - Foreign body sensation

Physical Exam

- Preauricular lymph nodes
- Inspect lid margins
- Inspect conjunctiva
- Inspect for presence of ciliary flush and distribution of redness
- Note presence or absence of loose foreign bodies

Conjunctivitis

- Painless red eye
- Discharge
- Conjunctival erythema
- Bulbar (over sclera) and palpebral (lining the eyelids) conjunctival injection
- Normal vision
- Common causes:
  - Viral
  - Bacterial
  - Allergic
Conjunctivitis

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Viral</th>
<th>Bacterial</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Varies typically &lt; 3 weeks</td>
<td>Symptoms usually unilateral</td>
<td>Symptoms usually bilateral with itching and clear, watery discharge</td>
</tr>
<tr>
<td></td>
<td>Bilateral, often begins unilateral</td>
<td>Almost always unilateral</td>
<td>Concomitant history of seasonal respiratory allergies is very common</td>
</tr>
<tr>
<td></td>
<td>Clear, watery or mucoid discharge</td>
<td>Constant thick creamy discharge: white, yellow, or green (wipe away; discharge reappears within minutes)</td>
<td>Associated nasal symptoms and/or sneezing</td>
</tr>
<tr>
<td></td>
<td>Occasionally a palpable preauricular lymph node</td>
<td>Preauricular lymphadenopathy on the affected side</td>
<td>Symptom duration &gt; 3 weeks</td>
</tr>
<tr>
<td></td>
<td>Most likely cause if others in household also have similar symptoms</td>
<td>Symptoms usually bilateral with itching and clear, watery discharge</td>
<td>Common history of recurrences</td>
</tr>
</tbody>
</table>

Conjunctivitis: Treatment

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Viral</th>
<th>Bacterial</th>
<th>Allergic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reassurance, time and education</td>
<td>Refer</td>
<td>Cool compresses</td>
</tr>
<tr>
<td></td>
<td>Highly contagious, live virus is shed in tears for up to 2 weeks</td>
<td>Oral antihistamines are treatment of choice (properly manage allergic rhinitis)</td>
<td>Oral antihistamines or decongestant drops</td>
</tr>
<tr>
<td></td>
<td>Refrain from rubbing eyes and transmitting infection</td>
<td>Can also use ophthalmic antihistamines or decongestant drops</td>
<td>If caused by contact allergy, treat as above and stop offending agent</td>
</tr>
<tr>
<td></td>
<td>Self-limited within 2–3 weeks</td>
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</tr>
<tr>
<td></td>
<td>Ophthalmic or oral antihistamine if eyes are itchy</td>
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</tbody>
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Episcleritis

- Benign inflammation of superficial episcleral vessels
- Usually idiopathic but can be a marker of collagen vascular disease
- Tender irritated eyes (foreign body sensation)
- Vision and lids are normal
- Corneas are clear
- Conjunctiva show local raised areas of redness
- May be confused with conjunctivitis

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Subconjunctival Hemorrhage

- Redness is socked-in & not "injected"
- Absence of itchiness, pain, or foreign-body sensation
- No tenderness on exam (gently wiggle the globe through closed eyelids)
- You may likely elicit a history of recent valsalvas, like coughing, pushing in labor, lifting a piano, etc.
- Treatment is typically self-limiting and requires reassurance
- Can recommend cool then warm compresses

Corneal Abrasion

- Essential to ascertain a history of trauma ("something scratched my eye")
- Visualize scratches with a penlight, but often requires fluorescein staining
- Patients complain of pain &/or gritty sensation in eye
- Watery tearing, sensitivity to light, blurry vision, redness
- Completely heal in 24 hours; if not REFER
- Refer if history of working in a metal workshop or patient was cutting or hammering metal

Blepharitis

- Inflammation involving the structures of the lid margin
- Commonly caused by Staphylococcus or associated with sebaceous dermatitis.
- Presents with red, scaly, thickened eyelids (sometimes with loss of lashes), associated with itching and burning
- Tends to be chronic and recurring
- Treat with good eyelid hygiene
  - Hot compresses for 15-20 minutes 2-4 times daily
  - Follow with lid scrubs or baby shampoo
Hordeolum (Stye)
- Infection of the meibomian gland (internal) or of the glands of Zeis and Moll (external)
- Presents with a palpable, tender nodule, +/- swelling of eyelid
- Typically associated with staphylococcus
- Treat with hot compresses 3-4 times daily for 5-10 minutes
- Clearing usually occurs in 1 week
- May or may not be treated with ophthalmic antibiotics

Chalazion
- Sterile granulomatous (not infectious) inflammation of the meibomian gland
- Very similar in appearance to a hordeolum
- Unilateral, firm, nodular lesion located beneath the skin
- Not usually tender to gentle palpation
- Treat with lid hygiene and hot compresses.
- If no resolution within 1 week, refer for possible incision and drainage.

Orbital Cellulitis
- Usually caused by gram (+) organisms that enter the orbit either directly from the sinuses or through venous channels.
- Presents as swollen, red eyelids, with exophthalmos, pain, and fever
- Considered medical emergency (can cause paresis of CNs 3, 4, 5, 6 or cavernous sinus thrombosis)
- Require IV antibiotics
Acute glaucoma

- An ocular emergency—permanent vision loss occurs rapidly
- Presents abruptly with severe eye pain or retro-orbital pain with prominent ciliary flush
- Pupil is mid-dilated and fixed
- Cornea is cloudy
- Patient reports cloudy vision or vision loss, colored rings around lights (due to corneal edema, unilateral headache often associated with N/V)
- Send to ER for immediate iridectomy

REFER

- Red eye complaints associated with pain &/or visual changes
  - Corneal ulcer/keratitis
  - Scleritis
  - Iritis/Uveitis
  - Optic Neuritis

Evaluation of Dry Eyes
Principle Causes of Dry Eyes

- Lacrimal gland dysfunction
  - Age
  - Sjogren’s syndrome, syphilis, collagen vascular diseases, neoplasms
  - Anticholinergic drugs

- Compromised eyelid function
  - 5th or 7th nerve palsy
  - Sarcoidosis
  - Hodgkin’s disease

- Mucus deficiency
  - Chlorosis
  - Bacterial conjunctivitis
  - Vitamin A deficiency

- Environmental factors
  - Excess exposure

- Lipid abnormalities
  - Chronic blepharitis
  - Meibomitis

History

- S—any associated dry mouth, joint pains, prior ocular disease, infection or surgery?
- C—are tears produced with crying? Strands of mucus from the inner canthi when awakening?
- H—more pronounced as the day progresses?
- O—duration and frequency of symptoms
- L—related to dry environmental conditions?
- A—tobacco smoke?
- R—what factors improve the condition?

TAKE A DETAILED MEDICATION HISTORY!

Ask about any history of rheumatological conditions

Physical Exam

- Frequency and completeness of blinking
- Note any lid pathology, and complete lid closure
- Note presence of blepharitis (lid margin crusting, redness) or meibomitis (engorgement of meibomian glands)
- Other findings may include thick yellowish mucous strands in the lower fornix, hyperemic and edematous bulbar conjunctiva, corneal dullness
- Skin and joints are examined for signs of rheumatoid disease
- CNs examined for facial nerve palsy
Treatment approaches

- Eliminate unnecessary medications that may be contributing
- Reduce environmental dryness by use of room humidifier
- Artificial tear substitutes used as often as desired
  - methylcellulose 0.5%, 1%
  - Polyvinyl alcohol 1.4%, 3%
  - Hydroxypropyl methylcellulose 1%
- Nonmedicated ophthalmic ointments for use at night
  - White petrolatum is most common ingredient
- Topical cyclosporine (Restasis®) 1 gtt q 12h
- Ensure patient knows how to instill eye drops and eye ointments

Evaluation of Otic Complaints

Ear Anatomy
Common Ear Symptoms

- Ear pain
- Dizziness
- Hearing loss/hearing changes
- Tinnitus

Common Differentials of Ear Pain

- Otitis Media
- Otitis Externa
- Local Furuncle
- Cerumenosis
- Eustachian Tube Dysfunction

Acute Otitis Media

- Principle findings: ear pain, hearing loss, mild to moderate fever
- On exam: bulging TM and opaque effusion may be noted; behind the TM, perforation may or may not be present; loss of anatomic landmarks
- Common bacterial species: Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis, Staphylococcus aureus, Staphylococcus pyogenes
- Treat with Amoxicillin, amoxicillin-clavulanate or TMP-SMX or erythromycin in PCN-allergic patients
Otitis Externa

- Patient’s complain of itching, crustings, pain, redness, and/or discharge
- Movement of the pinna is characteristically painful, as well as pressure on the tragus
- Main pathogens: pseudomonas and staphylococcus aureus
- Treatment: topical antibiotics, usually containing polymyxin, hydrocortisone, neomycin or fluoroquinolones and analgesics

Furuncle

- A staph “boil” occurring in or right near the canal (localized infection of the hair follicles)
- Small furuncles may resolve with proper hygiene, keeping area clean or may require antibiotics
- Larger furuncles may require I&D

Cerumenosis (Impaction)

- Canal fully occluded with wax
- Patients may complain of hearing loss/decrease, sense of ear fullness or pressure in the ear, +/- dull pain
- Pain less severe than in AOM
- Patients may also complain of vertigo
- Carbamide peroxide 6.5% in anhydrous glycerin to soften, loosen, and remove excessive wax
- Remove remaining wax with gentle, warm water irrigation using a rubber otic bulb syringe
- Do not recommend ear candles
Eustachian Tube Dysfunction

- One of the most common causes of ear pain
- May also complain of popping sensation
- Commonly due to URI or allergic rhinitis
- Patients may complain of concurrent allergy symptoms
- Retracted TM upon exam

Causes of referred pain to the ear

- Ill-fitting dentures or tooth problems
- TMJ dysfunction
- Nasopharyngeal infections
- Tumors, cysts
- Migraine headaches
- Cervical arthritis

Water-clogged Ear

- Patients complain of wetness or fullness in the ear, accompanied by gradual hearing loss
- Need to inquire about the presence of T-tubes and whether the patient has a ruptured TM
- Can recommend products containing isopropyl alcohol 95% in anhydrous glycerin or in boric acid 2.75% or a 50:50 mixture of acetic acid 5% (white household vinegar) and isopropyl alcohol 95%
Tinnitus

- Nonspecific symptom of otologic disease
- Sensation of ringing, buzzing, or roaring in the ears
- Often accompanied by or a precursor to hearing loss; often results from same conditions that cause hearing loss
- Up to 50% of cases have no identifiable etiology

Tinnitus: Some causes

- Impacted cerumen
- TM perforation
- Sensorineural
- Otosclerosis
- Acute otitis media
- Glomus tumors
- Post-traumatic arteriovenous fistulas
- Presbycusis
- Noise-induced hearing loss
- Acoustic trauma
- Ototoxic drugs (aminoglycosides, salicylates)
- Meniere’s Disease
- Acoustic neuroma
- Tinnitus cerebri
- Cerebral aneurysm
- Coster’s syndrome (associated with TMJ dysfunction)

Dizziness

- Vestibular Disease
  - Benign positional vertigo
  - Vestibular neuronitis
  - Meniere’s disease
  - Acoustic neuroma
  - Basilar insufficiency
  - Multiple sclerosis
  - Migrainous vertigo
- Cardiac and Vascular Disease
  - Critical aortic stenosis
  - Carotid sinus hypersensitivity
  - Volume depletion
  - Autonomic insufficiency
  - Diminished vascular reflexes of the elderly
- Multiple Sensory Deficits
  - Diabetes mellitus
  - Cataract surgery
  - Cervical spondylosis
  - Cerebellar disease
- Psychiatric Illness
  - Anxiety
  - Depression
  - Psychosis
- Metabolic Disturbances
  - Hypoxia
  - Severe hypoglycemia
  - Hypocapnia and hypercapnia
History is critical

- Description of dizziness (SCHOLAR)
  - True vertigo vs. lightheadedness vs. ill-defined dizziness vs. poor balance
  - What are/were you doing to bring it on? What are the events surrounding the dizziness? How does standing or change in position affect symptoms? Are there other associated symptoms?
- Obtain a complete PMH
- Obtain a complete medication history

Physical Exam

- General observation
- Skin for pallor and sweating
- Blood pressure and pulse including orthostatics
- Eyes for nystagmus (EOMs)
- Palpate and auscultate carotid arteries
- Cardiac Exam
- Neurologic Exam including gait and CNs
- Provocative maneuvers (hyperventilation, vestibular maneuvers, standing up, walking and turning)
- Alleviating maneuvers (rebreathing in paper bag, lying still, getting up slowly, holding patient’s hand or using cane when walking)

Benign Positional Vertigo

- Symptoms only occur upon change of position and last a few moments (typically < 1 minute)—can even be provoked by rolling over in bed or lying down
- May be associated with N/V; no other neurologic complaints
- Primarily affects those > 60 years
- Usually recurrent without treatment for weeks to months
- Diagnosed using the Dix-Hallpike maneuver
- Responds well to the Epley maneuver
  - Relocates free-floating debris from the posterior semicircular canal into the vestibule of the vestibular labyrinth (where it no longer causes vertigo during head movement)
  - 80% success rate reported after single treatment
  - Recurrence rate is about 30% within 1 month—recurrence more common in those who delay treatment
  - Balance-vestibular rehab also an option (vestibular “retraining”)
- Meclizine and promethazine only reserved for patients who have not responded to the Epley maneuver and are only recommended when the frequency of spells is high or as premedication for the maneuvers when there is associated N/V
  - Prolonged use of vestibular suppressants can delay central adaptation
  - Drugs are also sedating which may increase risk of falls during an attack
  - Other options: dimenhydrinate 50 mg po q6h—more rapid onset than meclizine
Acute Labyrinthitis

- Viral or post-viral inflammatory disorder affecting the vestibular portion of the 8th CN
- Patients may report fairly recent viral URI followed by acute onset of vertigo, tinnitus, and hearing loss
- Associated symptoms may include N/V and gait instability
- Symptoms are self-limited, usually resolving by 3-6 weeks with no residual deficits
- Treatment includes oral corticosteroid taper
- Symptomatic treatment:
  - Dimenhydrinate 50 mg po q4-6h
  - Diphenhydramine 25-50 mg po q4-6h
  - Meclizine 25-50 mg po q6h
  - Benzodiazepines and antihistamines
- Symptomatic treatment only recommended in the acute phase when symptoms are most severe, usually for the first couple of days without medical referral.

Meniere’s Disease

- Typically present with symptoms between the ages of 20 and 40
- Classic triad of symptoms
  - Episodic vertigo (true spinning sensation that may persist from 20 minutes to 24 hours)
  - Sensorineural hearing loss—usually fluctuating, and initially affects lower frequencies. Hearing loss progresses over time and often results in permanent hearing loss at all frequencies over an 8-10 year period
  - Tinnitus—characteristically low in pitch (like listening to a seashell or machinery)
- Associated symptoms may also include sensation of aural fullness, N/V
- Treatment includes lifestyle modification, antihistamines, benzodiazepines, and antiemetics

Ototoxicity

- Damage to cochlear and/or vestibular (inner ear) function as a result of administration of medications
- May be temporary or permanent
- Symptoms vary depending on medication
  - Ringing in the ears (tinnitus)
  - Hearing loss
  - Difficulty understanding speech
  - Particularly in noisy environments
  - Severe dizziness (spinning vertigo)
High Risk Medication Classes

- Drugs used to treat infections (antibiotics)
- Drugs used to treat cancer (anti-neoplastics)
- Drugs used to treat heart failure and edema (diuretics)
- Drugs used to treat malaria (antimalarials)
  - Sometimes also used for other conditions
- Drugs used to treat pain and inflammation (non-steroidal anti-inflammatories NSAIDs)

ED Drugs and Hearing Loss

- 29 cases reported in mid-2000s
- Prompted FDA Review and major study
- Large epidemiological study of 11,525 men over 40 years of age gathered by the Medical Expenditure Panel Survey conducted between 2003 and 2006
- Men who reported use of PDE-5 inhibitors were twice as likely to also report hearing loss as were men who had not used the drugs
Drugs used for Infections

- Aminoglycosides
  - Gentamicin
  - Tobramycin
  - Neomycin
  *Patients with kidney failure receiving IV doses at greatest risk*
  *Loss is usually permanent; monitoring is key to prevention*
- Macrolides
  - Erythromycin (Eryc, EES, E-mycin)
  - Clarithromycin (Biaxin)
  - Azithromycin (Zithromax)
  *Patients with kidney failure receiving IV doses at greatest risk*
- Miscellaneous
  - Vancomycin
  - Trimethoprim-Sulfamethoxazole (Bactrim, Septra, SMZ-TMP)

Drugs used for Cancer

- Cisplatin (Platinol)
- Carboplatinum (Carboplatin)
- Methotrexate (Rheumatrex)
- Vincristine (Oncovin)
- Vinblastin (Velban)
- Bleomycin (Blenoxane)

*Careful monitoring of blood levels can minimize ototoxicity*

Drugs Used for Heart Failure and Edema

- Furosemide (Lasix)
- Bumetanide (Bumex)

*Most problematic when given intravenously for acute kidney failure or acute lung edema or congestive heart failure*

*Rare cases reported when taken orally in high doses, especially in patients with chronic kidney failure*
Drugs used for Malaria and other Conditions

- Quinine
- Chloroquine
- Hydroxychloroquine
- Primaquine
- Quinidine

Very similar to effects seen with aspirin; usually reversible when medication is discontinued

Drugs used for Pain and Inflammation

- Aspirin
  
  *High doses can cause high-pitched or hissing tinnitus and hearing loss*

  *Can be permanent, but more often is reversible with discontinuation of aspirin (salicylate) therapy*

- Acetaminophen (Tylenol)

Drugs used for Pain and Inflammation

- NSAIDs
  - Diclofenac (Voltaren)
  - Ibuprofen (Motrin, Advil, Nuprin, etc)
  - Indomethacin (Indocin)
  - Naproxen (Naprosyn, Alleve, Anaprox)
  - Piroxicam (Feldene)
  - Sulindac (Clinoril)

- Opioids
  - Hydrocodone/acetaminophen combinations (Lortab, Vicodin, Norco)
  - Methadone (Dolophine)

*Dose related, usually reversible but some permanent cases have been reported*
How Common is Hearing Loss Associated with Drugs for Pain and Inflammation?

- Study surveyed almost 27,000 men every 2 years over 18 year time span
  - Regular users of aspirin 12% more likely to develop hearing loss
  - Regular users of NSAIDs were 21% more likely to develop hearing loss
  - Regular users of acetaminophen were 22% more likely to develop hearing loss

Risk Factors for Ototoxicity

- Age (over 60)
- Certain hereditary (genetic) factors
  - Especially for aminoglycoside antibiotics
- Pre-existing sensorineural hearing loss or balance problems
- Pre-existing noise-induced hearing loss
- Kidney disease/failure
  - People with kidney problems have an unusually high incidence of hearing loss, even without drug use
- Previous use of ototoxic drugs, repeated courses of the same ototoxic drug
- Using two or more ototoxic medications at the same time

- Previous ototoxic reactions to drugs in the past
  - Increase risk for permanent, more severe ototoxicity
- Inappropriate dose given
  - Too high of a dose relative to patient age and weight
  - Especially with aminoglycoside antibiotics
- Improper administration of known ototoxic drugs
  - Larger than recommended dose, higher than recommended cumulative dose, dose administered faster than recommended (injection or intravenous)
- Dehydration
Summary

- Growth of health and wellness, prevention and self-care
  - Approximately 75% of Americans prefer self-care treatment options over going to a primary care provider
  - Patients expect pharmacists to assist them with an array of health care concerns and to help them interpret treatment options within the health care delivery system

- Impact of Affordable Care Act

- Pharmacists’ Role
  - In terms of health and wellness, prevention, and self-care needs — synonymous with primary care activities
  - Requires effective communication skills (thorough questioning & active listening) and basic working knowledge of physical assessment
    - \textit{Primary care} (PCP) requires a greater working knowledge
    - \textit{Community pharmacists} (CPhT) have limited physical exam findings
  - Determine problem
  - \textit{QuEST Process a good starting point}

- Patient History
- \textit{Observed physical data} (basic physical exam findings)

Source: