Proactive Management of Ocular Allergy

Highlights From a Roundtable Discussion

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A Supplement to Optometry Times
Describe the differentiating clinical features of ocular allergy.

Review best practice management strategies of ocular allergy.

Implemen proactive management strategies for increasing patient identification of ocular allergy.

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Learning Method and Medium
This educational activity consists of a supplement and 20 study questions. The participant should, in order, read the learning objectives contained at the beginning of this supplement, read the supplement, answer all questions in the post test, and complete the evaluation form. To receive credit for this activity, please follow the instructions provided on the post test and evaluation form. This educational activity should take a maximum of 2.0 hours to complete.

Content Source
This continuing education (CE) activity is based on a tele-roundtable meeting held on February 13, 2012.

Target Audience
This educational activity intends to educate optometrists.

Overview
Allergies constitute the 5th leading chronic disease and affect between 30% and 50% of the US population, with as many as 40% of individuals reporting ocular symptoms. Doctor visits, pharmaceutical costs, lost days from work and school all contribute to the socioeconomic burden associated with allergic conjunctivitis. A group of ocular surface disease experts convened to discuss the importance of proactively managing ocular allergies, addressing the challenges of differential diagnosis, selecting amongst the treatment options, and employing best practices to encourage better patient outcomes year-round for patients with ocular allergies.

Learning Objectives
Upon completion of this activity, optometrists will be better able to:
- Describe the differentiating clinical features of ocular allergy and appropriate diagnostic tests in pediatric and adult patients
- Explain the importance of early and long-lasting treatment of ocular allergy
- Review best practice management strategies of ocular allergy, including early treatment, in pediatric and adult patients, and in contact lens wearers
- Implement proactive management strategies for increasing patient identification of ocular allergy

Accreditation Designation Statement
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**Introduction**

Recent estimates indicate that allergies constitute the 5th leading chronic disease and affect between 30% and 50% of the US population, with as many as 40% of individuals reporting ocular symptoms. Doctor visits, pharmaceutical costs, lost days from work and school all contribute to the socioeconomic burden associated with allergic conjunctivitis. A group of ocular surface disease experts convened to discuss the importance of proactive management of ocular allergies versus crisis management, the challenges of differential diagnosis, current treatment options, and best practices in treating ocular allergy to encourage better patient outcomes.

**Prevalence and Trends in Ocular Allergy**

**Dr Karpecki:** First, let us focus on the overall prevalence of ocular allergy. What percentage of our experts’ practices involves caring for patients with allergy?

**Dr Hom:** I have observed that clinical populations vary. I would say that approximately 25% of my general optometry practice in southern California involves caring for patients with allergies.

**Dr Autry:** We have quite a large percentage of patients with allergies in Texas. The Midwest and the eastern part of our country tend to be home to the so-called pollen capitals of the United States. Texas has multiple areas with high pollen counts. In addition, the state’s oil and gas industry creates increased pollution from factories, so we have not only pollen-driven allergies, but environmentally triggered allergies as well.

**Dr Cunningham:** I practice in a perisurgical setting, and our suspicion of disease and diagnosis is quite high for preexisting conditions such as blepharitis, allergy, or any ocular surface disease. We see a concentrated portion of patients who cannot wear contact lenses, or who have problems with wear duration. We screen each patient for allergy, suspecting that most of them have either dry eye or allergies to start with; it is very rare that we will consider an eye pristine, without any preexisting disease.

**Dr Bloomenstein:** The prevalence of allergy is actually quite high in our practice in Arizona and I believe the comorbidity of dryness and other issues may mask it.

**Dr Karpecki:** A great resource on allergies for both clinicians and patients is the Web site pollen.com. The site has 4-day allergy forecasts for cities across the United States, allergy news, and various beneficial tools. Let’s talk about screening. How do you screen patients for ocular allergy in your practice?

**Dr Bloomenstein:** I ask patients if they are experiencing discomfort or irritation from their contact lenses, and that guides me in the diagnosis. Some of the testing I do is to rule out dryness. I do lissamine green staining and I look at the lid margins to see if there is any significant inflammation or papillary reaction. I usually do fluorescein staining to evaluate the superior and inferior bulbar conjunctiva. Also, I will put a drop of an antihistamine/mast cell stabilizer in the patient’s eye and ask if this makes his or her eye feel more comfortable. Getting a positive response is a good way to help with a simple diagnosis.

**Dr Karpecki:** Of the many ways to screen for ocular allergies, I’m finding success in osmolarity testing with the TearLab system even though it is primarily used for dry eye testing. When I have a patient who comes in with redness, itching, and burning, I’ll do a tear film osmolarity test. The normal osmolarity range is 275-306 mOsm/L. If the result is in the normal range, I know I am not looking at a dry eye or even at meibomian gland dysfunction. Allergy is one of the top causes of symptoms when the osmolarity score is normal.

**Dr Bloomenstein:** Something else I do as part of a medical history is to inquire about systemic medications the patient may be taking. If a patient is already taking a systemic antihistamine, then I know that allergies are causing the trouble. Many patients think that taking a systemic medication actually helps the ocular response, but the truth is it can exacerbate the problem and confound the diagnosis a bit more.

**Dr Hom:** The number 1 symptom, as we all know, is itch. As part of my screening, I ask every patient, “How often do you experience ocular itching—seldom, sometimes, frequently, always?” If the response is sometimes, I usually correlate that to mild allergy; frequently correlates to moderate allergy; and always correlates to severe allergy.

**Dr Karpecki:** There has been substantial growth in the prevalence of ocular allergies, and systemic allergies as a whole, since the 1980s. We have a survey reporting that in the 1980s approximately 74 million people had reported an episode of ocular allergy; that number has now increased 66% to 123 million. Several theories have been put forth to explain the increase in prevalence.

**Dr Bloomenstein:** I think there are 2 main reasons. One is that we have such a mobile society. I live in Arizona and people leave here during the summer time to go to a cooler climate, so they’re exposed to a wider range of seasonal allergens. Another theory is the hygiene hypothesis. Some think that we as parents potentially overuse antimicrobial lotions to clean our hands. Years ago we built up a lot more immunity, and the thought now is that kids over the past few decades have not been getting that same immune system build-up. Other types of allergy we haven’t discussed, but which should be considered, are workplace allergies and reactions to preservatives. Industry produces thousands of new chemicals a year that may increase the exposure to new allergens; this can easily be confirmed if symptoms worsen at the workplace. Preservatives in topical medications may also induce a significant sensitivity reaction. When we take a patient’s history, we should question both the workplace situation and use of medications containing preservatives.
Dr Karpecki: What overlap do you see in your practice of patients with ocular allergies and those with rhinitis, sinusitis, or other nonocular symptoms, and how do you treat these patients?

Dr Hom: According to the studies, 70% of patients who have ocular allergy also have rhinitis. Although there are cases of only pure allergic conjunctivitis, or pure allergic rhinitis, it is more than likely that a patient has both.

Dr Autry: In patients with both ocular allergies and rhinitis, we treat with a topical ophthalmic and a nasal steroid, which will work as well as an oral medication without exacerbating other underlying conditions. I use a nasal steroid, which has been shown to be safe and effective, as well as an oculan antihistamine/mast cell stabilizer. If those agents do not provide complete relief, I'll add an oral medication. I often recommend Benadryl (diphenhydramine) at night for these patients because their symptoms are often worse at that time.

Dr Karpecki: We as optometrists have become very good at treating ocular allergies and it can lull us into thinking this is a benign disease that is easy to treat. We shouldn't forget the effect on quality of life (QOL) ocular allergy can have on our patients.

Dr Bloomenstei: We definitely underestimate that QOL effect. Optometrists have an opportunity to do something a little bit more prophylactic. For instance, we can prepare for seasonal allergies, but if we also limit our patients’ exposure to perennial triggers, we could actually improve their QOL more than they realize.

Dr Karpecki: There is no question that there are huge issues related to QOL. In a study of 124 allergy patients who responded to the Eye Allergy Patient Impact Questionnaire (EA PIQ), patients were especially troubled by the effect of their ocular allergy symptoms on being in the outdoors (73%) and on reading (70%). A large percentage of patients also stated that ocular allergy symptoms affected their driving, their concentration on daily tasks, sleeping, and applying or wearing makeup. In optometry, we all need to be aware of the importance of treating the disease quickly and effectively.

Triggers and the Allergic Response Mechanism

Dr Hom: I work with allergists regularly and we’ve often discussed what triggers allergic conjunctivitis. They tell me that, with the exception of cats, it is not the perennial allergens that trigger allergic conjunctivitis. Pollen is the most likely trigger of allergic conjunctivitis, and of all the pollens that cause or trigger this condition, grass is the most potent. Knowing that grass is the most potent trigger doesn’t mean we should not also be aware of all the other seasonal and perennial allergens that can trigger our patients’ ocular allergies. We need to understand the allergic response, both the early and late phases.

Dr Karpecki: I believe there is some practicality to the idea of early- and late-phase allergic response and treating patients accordingly. In the early phases of an allergic response, the most common symptom is itching due to histamine release as mast cells degranulate. Patients will come in with dramatic symptoms. Following the exposure to the allergen, the body recruits its own immune cells and initiates the lipooxygenase and cyclooxygenase pathways, producing prostaglandins, leukotrienes, platelet activating factors, and cytokines. At that point, we are dealing with inflammation and observe more signs; we see patients with a lot more chemosis. The results of the inflammation cycle back, more histamine is released, and the cascade continues.

Dr Bloomenstei: If we are able to treat the patient in a proactive manner, specifically with preventing the mast cell from degranulating, then I think we can stop the more serious adverse reactions. We have to start changing our treatment regimen and begin thinking about putting our patients on an anti-inflammatory and an antihistamine/mast cell stabilizer earlier.

The key to proactive treatment is having that mast cell stabilization and antihistamine working in the background. It is important that we start prescribing those medications for our patients to be used preventatively.

Dr Hom: I educate my patients on the allergic cascade to help them understand the need to be prepared. I explain that in very severe cases, the cascade is similar to an avalanche. It starts out as a trickle and then all a sudden you have all these inflammatory factors and the eye gets red, and there is swelling and other uncomfortable symptoms. It is so much easier for us to treat early, because after the cascade has started—or after the avalanche has started—there is more to deal with and it will be more difficult to get the patients back on the right track.

Dr Karpecki: A simple way to think about it is, if symptoms are worse than signs, treat with an antihistamine/mast cell stabilizer combination. If signs are worse than symptoms, start the patient with a steroid and add the combination product later. That’s how I think of it. It makes it simple, yet matched to the early- and late-phase responses.

Dr Bloomenstei: I think the key to proactive treatment is having that mast cell stabilization and antihistamine working in the background. It is important that we start prescribing those medications for our patients to be used preventatively.
Implications of Suboptimal Management

**Dr Karpecki:** One area of suboptimal management is with contact lens-intolerant patients. Jason Nichols, OD, reported on a survey in *Contact Lens Spectrum* in which he looked at the treatment of ocular discomfort. The article stated that when a patient presents with contact lens intolerance, optometrists first change the contact lens, and second, change the solutions. Not until the sixth or seventh step of care was treatment of the underlying disease considered. Many clinicians are so accustomed to addressing contact lenses as the primary function of their practice, it becomes automatic to switch the lens in a patient who complains of discomfort. But, treatment of the underlying disease should be one of the first steps taken.

**Dr Hom:** For me, there are 2 principal reasons to treat ocular allergies in a contact lens wearer: 1) to extend the patient’s lens wear time, and 2) to decrease the need for rewetting drops. Two studies have been conducted—one with bepotastine and the other with epinastine—showing that this is the case. Both studies showed that using a treatment twice a day, before putting in the contact lenses and again after taking them out, versus applying just a rewetting drop, resulted in a decrease in rewetting drop use and also in an increase in wear time. Optometrists feel comfortable prescribing topical allergy drops because they have extremely high safety margins and because studies have shown the importance of treating ocular allergies in this specific patient type.

**Dr Bloomenstein:** Suboptimal management of ocular allergies in a patient undergoing LASIK (laser-assisted in situ keratomileusis) is not an option. Patients are expecting a 20/20 outcome with LASIK surgery, or with any form of corneal corrective surgery. We know that inflamed eyes cause dryness. Thus, a dry, inflamed eye has less ability to get rid of the antigens that are on the corneal surface. More importantly, a compromised tear film can reduce the quality of the patient’s vision.

**Dr Cunningham:** There are some well-documented situations in which previous allergy may not only cause issues of patients touching their eyes, but also cause flap-related complications or interface-related complications. We need to remember that allergy itself is an inflammatory response. Any amount of inflammation present prior to a surgical procedure is not only dangerous, but decreases a favorable prognosis of the surgery itself because of potential complications. Corneal nerves are cut during surgery, possibly exacerbating dry eye, at least temporarily. In our perisurgical care, my colleagues and I rely heavily on steroids, which temporarily blunt the inflammatory response. We must find out what is causing the patient any type of discomfort or symptomatic issues before the surgery, so we can treat appropriately to help ensure the success of the procedure.

Differential Diagnosis

**Dr Karpecki:** The most common diagnoses challenging optometrists are ocular allergies and dry eye, and often patients have both. How do we differentiate between these 2 conditions?

**Dr Autry:** In ocular allergies and also in dry eye, you can see staining and chronic irritation. Differentiating between the symptom of itch and the symptom of burning is useful. I ask patients if their eyes “burn and water” more or “itch and water” more. Next, I ask what time of day the symptoms occur and during what time of the year. Are they seasonal sufferers? Do they also have allergic rhinitis or an underlying asthma? We know that 75% of patients who have asthma also have allergic rhinitis and ocular symptoms as well. Taking a good history and carefully listening to what the patient reports in the history can be just as important in determining a diagnosis as observing the signs of the disease.

**Dr Bloomenstein:** There is such an interchange between dry eye and allergy that it is essential to get to the heart of the primary symptom of allergy—itch. If you ask the question, “Do your eyes ever itch?” and the patient answers “Yes”, then that patient should be started on a preventative medicine for itching. Treat with a medicine that is indicated for allergy and itching rather than trying to differentiate if you are dealing with dry eye. If you treat the itch and it goes away, then the stimulus to induce more inflammation or cause more dryness may go away as well. Doctors need to be a little more aggressive and a little bit more prophylactic in treating patients with ocular allergy.

**Dr Hom:** I conducted a recent study on just this topic, examining the overlap of ocular allergies and dry eye. There were 689 patients in the study ranging in age from 5 to 90 years. Clinically significant itchiness was found in 194 (28.2%) patients, dry eyes in 247 (35.8%), redness in 194 (28.2%); and symptom overlap was demonstrated in many of the patients. Of the 194 patients with itchiness, 58% had clinically significant dryness. In the 247 patients with dry eyes, 45% had clinically significant itch. Redness was apparent in 62% of the patients with itch and in 49% of the patients with dryness. Statistical analysis demonstrated that self-reported itchiness, dryness, and redness were not independent of each other. The odds of patients with “itchy eyes” also experiencing dry eyes were 2.11 times that of patients with non-itchy eyes, and the odds of these same patients also experiencing redness were 7.34 times that of patients with non-itchy eyes. (Figure) The study has completely changed my perspective in terms of allergic conjunctivitis and dry eye. Now, I look for both ocular allergies and dry eye and then secondarily I try to figure out whether it is just pure dry eye or pure allergic conjunctivitis.

**Figure.** Itch, dryness, and redness in the overlap of allergy and dry eye. The Venn diagram shows the relationship among all 3 subgroups. Reprinted with permission from Elsevier.
In my office, I use either the validated standard for symptomatic questionnaire for dry eye, the Ocular Surface Disease Index (OSDI), or the EAPIQ, which is considerably longer, as part of my ocular surface disease workups. Then I use the Total Ocular Symptom Score (TOSS) questionnaire. It includes 4 questions, and I score it like the OSDI, from zero to 100, 100 being the most severe. I review both the OSDI and TOSS scores; whichever one is higher, that is the predominant condition I treat. If the questionnaires reveal a 50 OSDI score and a 50 TOSS score, then I would consider combination therapies because both conditions are significantly present.

Dr Karpecki: We also need to differentiate between ocular allergies and viral or bacterial conjunctivitis. With bacterial conjunctivitis, there is mucopurulent discharge and typically a much more injected conjunctiva, while viral conjunctivitis may present with more of a watery discharge. The injection between a viral conjunctivitis and allergic conjunctivitis is fairly similar at times. Also, viral and bacterial conjunctivitis may have lymph adenopathy or a recent history of a cold or flu associated with them.

Dr Autry: It may be a little easier to differentiate viral conjunctivitis in adults than in children because adults tend not to have an underlying follicular response on the conjunctiva that can be present in children. I also consider the time of onset and if the symptoms started just recently. I always ask the patient if he or she has these symptoms only during certain times of the year or if they happen year-round. If the condition occurs about the same time each year, then I tend toward an allergy diagnosis. If signs started in 1 eye and moved to the other within a short amount of time, then I consider a viral condition in my differential.

Dr Karpecki: I think doctors often misdiagnose vernal keratoconjunctivitis (VKC) in children and call it seasonal allergic conjunctivitis. When any elevation is evident at the limbus, the diagnosis should be VKC because there is no other condition in which there occur limbal accumulations of eosinophils or elevation at the limbus. Although huge cobblestone papillae under the upper eyelid are the hallmark for VKC diagnosis, just the elevation at the limbus can be enough to make a diagnosis of VKC. (Table 1)

Table 1. Signs and Symptoms of Allergic Conjunctivitis Subtypes

<table>
<thead>
<tr>
<th></th>
<th>Vernal Keratoconjunctivitis (VKC)</th>
<th>Atopic Keratoconjunctivitis (AKC)</th>
<th>Giant Papillary Conjunctivitis (GPC)—also called Contact Lens-induced Papillary Conjunctivitis (CLPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Extreme itching, mucus discharge, photophobia.</td>
<td>Primarily burning followed by itching, tearing,ropy discharge, photophobia, and/or decreased vision</td>
<td>Ocular itching, mucus discharge, blurred vision; contact lens intolerance and increased soilage</td>
</tr>
<tr>
<td></td>
<td>Rare</td>
<td>Can often accompany atopic dermatitis, eczema, or asthma.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More likely in warm weather and dry climates.</td>
<td>Not seasonal, but can go through remissions and exacerbations.</td>
<td></td>
</tr>
<tr>
<td>Signs for Diagnosis</td>
<td>Any elevation at the limbus from limbal accumulations of eosinophils; Trantas dots; appearance of huge cobblestone papillae under the upper eyelid.</td>
<td>Periorbital eczema, blepharitis, conjunctivitis, potential neovascularization and even conjunctivalization of the cornea, anterior polar cataracts and keratoconus are associated with this disease</td>
<td>Very large papillae in the upper lid—often 1 mm in diameter or larger, high-riding contact lens</td>
</tr>
<tr>
<td>Demographics</td>
<td>Males &gt; females, age 6-17 years</td>
<td>Ages 20-40 years generally</td>
<td>Contact lens wearers, age teens to 30s in general</td>
</tr>
</tbody>
</table>

Dr Karpecki: We’ve touched on a few classes of ocular allergy medications, but there are numerous topical products that affect the allergic cascade, including mast cell stabilizers, antihistamine/mast cell stabilizer combinations, steroids, and other anti-inflammatory agents such as nonsteroidal anti-inflammatory drugs. Antihistamine/mast cell stabilizer formulations are commonly used because they are well tolerated by most patients and because of their dual action of inhibiting the histamine receptor activation, which reduces itching, and stabilizing the mast cell, which decreases signs such as hyperemia and edema. Current topical antihistamine/mast cell stabilizer formulations are olopatadine, azelastine, epinastine, ketotifen, bepotasine, and so forth.
and alcaftadine, the latter 2 being the newest on the market. (Table 2) Steroids may also be used to treat allergic conjunctivitis effectively, but physicians always consider the appropriateness and safety of long-term steroid use, depending on the individual patient and the allergic eye disease they are treating. Since bepotastine and alcaftadine are the newest entries to the market, it is worth spending a little extra time reviewing their clinical studies.

Dr Cunningham: To begin with, Greiner and colleagues in a recent phase 4 study compared alcaftadine, 0.25%, placebo, and olopatadine, 0.1% in a conjunctival allergen challenge (CAC) model. The purpose of the study was to compare the onset and duration of action of alcaftadine to olopatadine and placebo in treating the signs and symptoms of allergic conjunctivitis. The results showed that alcaftadine and olopatadine treatments were significantly better than placebo in treating ocular itching and conjunctival redness in the measures of onset (15 minutes after dosing) and duration of action (16 hours after dosing). The onset of action data for alcaftadine was shown to be superior to that of olopatadine. All treatments were well tolerated in the population studied, with no reports of dry eye with either of the medications. 20

Dr Karpecki: Most of the ocular allergy efficacy and safety studies use the CAC model because it is widely accepted by the US Food and Drug Administration. A thorough review of the CAC model, as described by Dr Mark Abelson, can be found in the July 2003 issue of Current Allergy and Asthma Reports. 29 The bepotastine phase 3 CAC trials also showed that bepotastine was significantly better than placebo at treating itching and conjunctival hyperemia in both the onset (15 minutes after dosing) and duration of action (8 hours after dosing) measurements. There were no reports of dry eye in either the bepotastine or placebo arms. 30 Furthermore, the bepotastine zero-itch data showed that 68% of patients with severe itch scores (grade 3, defined as continuous itch or greater) had zero-itch scores after 3 minutes compared with only 3% of those in the placebo arm.

Table 2. Currently Available Antihistamine/Mast Cell Stabilizer Products 21-27

<table>
<thead>
<tr>
<th>Brand name</th>
<th>Molecule</th>
<th>Indication</th>
<th>Dosing</th>
<th>Bottle Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bepreve®</td>
<td>Bepotastine</td>
<td>Relief of ocular itching</td>
<td>1 drop BID</td>
<td>5 mL/10 mL</td>
</tr>
<tr>
<td>Elestat®</td>
<td>Epinastine</td>
<td>Relief of ocular itching</td>
<td>1 drop BID</td>
<td>5 mL</td>
</tr>
<tr>
<td>Lastacaft™</td>
<td>Alcaftadine</td>
<td>Relief of ocular itching</td>
<td>1 drop QD</td>
<td>3 mL</td>
</tr>
<tr>
<td>Optivar®</td>
<td>Azelastine</td>
<td>Relief of ocular itching</td>
<td>1 drop BID</td>
<td>6 mL</td>
</tr>
<tr>
<td>Pataday™</td>
<td>Olopatadine</td>
<td>Relief of ocular itching</td>
<td>1 drop QD</td>
<td>2.5 mL</td>
</tr>
<tr>
<td>Patanol®</td>
<td>Olopatadine</td>
<td>Relief of signs and symptoms</td>
<td>1 drop BID</td>
<td>5 mL</td>
</tr>
<tr>
<td>Zaditor®</td>
<td>Ketotifen</td>
<td>Relief of ocular itching</td>
<td>1 drop BID</td>
<td>5 mL</td>
</tr>
</tbody>
</table>

Adherence/Compliance and Comfort

Dr Karpecki: From a patient perspective, what differentiates these products? One is the dosing regimen; another is the comfort of the drop; and third is zero itch scores and effects on severe allergic conjunctivitis symptoms. With an eye that’s already irritated, comfort can be a concern. First, do patients typically dose as recommended, or as needed when their symptoms occur? For example, someone mows the lawn, his eyes become symptomatic, and so he uses his drops, we expect, more frequently. Doctors, what are your insights regarding adherence/compliance and comfort?

Dr Karpecki: The comfort of eye drop instillation has always been important to me in attempting to give my patients the most appropriate treatment for ocular allergies or other eye conditions. Research has been conducted measuring the comfort levels of several ocular allergy drops, and I think it behooves us to provide a brief overview of a few of these agents. In 2009 Clinical Ophthalmology published the results of a CAC study that evaluated the comfort levels of olopatadine and azelastine. In the study (N=36), olopatadine was rated significantly more comfortable than azelastine upon instillation, at 30 seconds, and at 1 minute after instillation. 31 In a similar study (N=39), the comfort of epinastine was compared with that of ketotifen and azelastine. Epinastine was found to be significantly more comfortable than ketotifen upon instillation (t=0 minutes). The study also showed that epinastine and ketotifen were significantly more comfortable than azelastine at 30 seconds, 1 minute, and 2 minutes after instillation, and that epinastine was more comfortable at 5 minutes post instillation. 32

Dr Cunningham: I also agree that comfort should be taken into consideration when choosing an eye drop medication. We wanted to compare the comfort of the latest agents bepotastine and alcaftadine. The study was not evaluating efficacy or any long-term effects, just comfort. Bepotastine was statistically more comfortable at time points of 1 minute, 3 minutes, 5 minutes, and 10 minutes. Comfort scores and grading evaluations converged quickly the longer the drop was in the eye. Both products had relatively high comfort scales, but there was a statistically significant difference between ocular comfort with bepotastine over alcaftadine. 33 And so, as the studies show, there may be differences in the level of comfort with allergy eye drops that should be considered.
Tips for Proactive Management of Ocular Allergies

Please visit www.mededicus.com/ProactiveOcularAllergy/Templates to download templates you can use in your office.

**Patient Dialogue/Relationship**

**Tip #1** Ask every patient, “Do your eyes burn, water, get irritated, or ever itch?” Often “itching” is the common word associated with allergy. Some patients with dry eye will describe the feeling as an “itch” even though the sensation could be more of an irritation. Remember to take the words patients use with a grain of salt and ask additional questions to get a complete picture, such as, “Is the [symptom] most bothersome in the morning or at night?” This conversation may be repeated at slit-lamp examination when signs are discovered.

**Tip #2** Treat every patient with ocular allergy much as you treat your patients with glaucoma. Bring them back every 3 or 4 months to make sure their treatment regimen is working and ask if they need additional prescriptions. At this time you can also reiterate ways to manage their ocular allergies, depending on whether they are seasonal or perennial sufferers. Treating allergies as any other eye disease is the absolute best thing you can do for your patients.

**Tip #3** E-mail or send your patients a postcard before allergy season to remind them that allergy season is approaching and they need to schedule an appointment, so they’ll be prepared before the season starts. Communicate that if they have experienced “itchy, watery, irritated or burning eyes” in the past year, they may have ocular allergies and should visit their eye care doctor for a checkup.

**Tip #4** Display a poster in the office waiting room that states, “If you experience any itching, burning, irritation, watery eyes, or any other type of discomfort related to your eyes, please make sure to tell the doctor because there could be a solution that you may not know about.” Encouraging the patient to have a dialogue with the doctor can help provide an accurate diagnosis and result in a better outcome for the patient.

**Education/Awareness**

**Tip #5** If you have Eyemaginations software available for viewing in your office, make sure patients watch the video on ocular allergies. This will help educate them on the various manifestations of ocular allergies and will encourage them to proactively seek treatment. Educating your patients is key to a successful outcome.

**Tip #6** Develop relationships with the pharmacies in your town; it makes a lot of sense. Make sure they have available for their patrons printed information and patient education literature on allergies, and remind them that you are there to see patients for a variety of eye issues. You can also request that your pharmaceutical sales representative keep the pharmacists supplied with patient education material.

**Tip #7** Help the patient make use of pharmaceutical companies’ rebate programs. Explain (or better yet, demonstrate) that they can go online and print rebates for their prescriptions. Or, if convenient, have your office staff print out the rebates for the patients. Patients will view this service as a significant benefit of your eye care practice.

**Tip #8** If patients have a significant supply of allergy eye drops at their disposal, they are more likely to treat throughout the entire allergy season. Bothering to get a refill is often a nuisance. Therefore, either write a prescription for a 90-day supply or prescribe the largest bottle available for dispensing. This will encourage better compliance and show that you are a patient advocate because you’re saving your patients money.

**Therapy Adherence**
**Case Studies**

**Dr Karpecki:** Viewing colleagues’ case studies has always been a helpful way for me to learn from others. Many times my fellow clinicians ask questions of their patients or conduct a diagnostic test I haven’t considered. It’s a great way to see if how I’m treating is in line with other practitioners around the country. Let’s share a few cases that have some overlap, but present different challenges.

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**Case**

**Perception is not reality in allergy and LASIK**

A 43-year-old male presented for a second opinion 5 months after LASIK surgery. He complained of fluctuating vision, hazy and uncomfortable eyes. He felt he could not wear his contact lenses as long as he used to. His prior diagnosis had been an allergy to his contacts or to the solutions, and providers had him change the contacts and the solution. The patient became frustrated and decided it was time to have LASIK surgery. The main issue after having LASIK was that the quality of his vision was not as good following the procedure, and he was diagnosed as having dryness and was kept on artificial tears and cyclosporine.

Upon consultation, the refraction did not correlate with the signs of his vision. Following consultation with the patient, he was diagnosed with a mild GPC, and, more importantly, ocular allergies. He was started on alcaftadine QD. Within a matter of weeks, a reduction in the inflammation was noted and the quality of the patient’s vision improved. This case highlights the importance of carefully examining and talking with your patients, because perception is not always reality, especially after refractive surgery. The problem is not always going to be just dryness. Allergy can cause significant issues, including inducing inflammation on the patient’s ocular surface.

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**Case**

**Differentiating ocular surface diseases**

A 28-year-old female contact lens wearer presented with a primary complaint of constant itching and redness followed by mild burning, grittiness, and decreased contact lens wear time. There was no significant discharge, but she had noticed a mild clear/mucin discharge the day before her visit. Symptoms started 3 days earlier and the itching was getting worse. Further questioning of the itch location focused on the eye and, particularly, the canthal region as opposed to the eyelid margins. She also indicated the presence of rhinitis and itchy palate. An osmolarity test was performed and she scored a 293. This indicated that it was not dry eye that was the problem even though her complaints were itching, burning, and dryness with grittiness and her contact lens wear time was down substantially. Her condition was much more of a seasonal allergic conjunctivitis. Her vision was fine. She had a history of taking oral antihistamines, which might have exacerbated her dryness that led to the symptom of grittiness and to the contact lens issues. She was started on bepotastine BID, before and after contact lens insertion. Because her symptoms last for several months, the 10-mL bottle size is helpful here in that it lasts through the longer season without the patient having to refill a prescription.

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**Case**

**Diagnosing allergy in an adult contact lens wearer**

A 35-year-old female presented with no history of allergies. She had significant itching and her contact lens wear time was down to 6 hours a day. The patient did not report any significant signs or symptoms. The EAIPQ questionnaire, which is scientifically validated, but long, was used to assess symptoms, daily life effect and psychosocial effect. This patient did not have any significant conjunctival staining, but the questionnaire responses indicated that she suffered all the time from watery, red, itchy, dry eyes and had trouble driving, sleeping, concentrating, applying make-up; felt tired, frustrated, and irritable. Even though the patient was not initially aware of her allergies, questioning her helped reveal that she did indeed have allergies. The patient was treated with olopatadine and, as a back-up, over-the-counter ketotifen (Alaway®).

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**Case**

**Diagnosing allergy in a child**

A 6-year-old male presented after his mother was told by the school that he had pink eye. Upon questioning the patient, it was discovered that itching was the primary symptom, and that he would sometimes wake up with what the child described to be periorbital edema and redness, as well as occasional matting in the mornings. His symptoms had been present for approximately a month. We know the pattern of viral conjunctivitis is shorter than that, and that this youngster had had similar episodes in the last year. The history alone suggested more than an acute bacterial or viral conjunctivitis.

During examination, periorbital edema and follicles were observed. Follicular reactions in children can have a wide array of causes. They are often idiopathic—some children just have...
more convenient for the parent than twice-a-day administration. The medication also has a high safety profile and carries a Category B rating in pregnancy.

**CASE**

Decreased contact lens wear time

A 34-year-old female patient presented for a LASIK evaluation. Her main motivation for LASIK was contact lens intolerance. She experienced moderate eye itch that paralleled her seasonal allergies, greatly decreasing her contact lens wear time. Outside of the typical allergy season, she also felt as though her contact lens wear time was not as long as she would have liked it to be. In the past she had tried using artificial tears and switching contact lens solutions, both with little success. She was diagnosed with seasonal allergic conjunctivitis and concurrent blepharitis, and was treated with alcaftadine because it's QD, and when you are dealing with children, giving an eye drop once a day is more convenient for the parent than twice-a-day administration. The medication also has a high safety profile and carries a Category B rating in pregnancy.

After surgery the patient was prescribed bepotastine ophthalmic solution and artificial tears to control ocular allergy and limit symptomatic dry eye. We feel it is important to use antihistamines that are maximally selective for the H1 histamine receptor in perioperative corneal surgery cases. This provides effective ocular allergy control and should not contribute to normal post-surgical dry eye. All corneal surgeries involve severing corneal nerves and tear production is temporarily decreased until the nerves grow back. Effective allergy control becomes increasingly important in the presence of ocular surface comorbidities, where we rely on adequate tear production to flush out surface inflammatory factors.

**References**


27. Zaditor [drug facts]. Fort Worth, TX: Alcon Laboratories, Inc.


1. Since the 1980s, the prevalence of ocular allergies has:
   a. Increased 66%
   b. Decreased 33%
   c. Increased 74%
   d. Stayed the same

2. Up to ____% of allergy sufferers report also having ocular symptoms.
   a. 20%
   b. 40%
   c. 60%
   d. 80%

3. Which of the following is NOT a common way to screen or help with a differential diagnosis of ocular allergies?
   a. Asking the patient how often he or she experiences ocular itching
   b. Conducting an osmolality test
   c. Performing staining to help evaluate the conjunctivae
   d. Using a rewetting drop

4. ________ may exacerbate ocular drying.
   a. Oral antihistamines
   b. Omega-3 fatty acids
   c. Cyclosporine
   d. Mast cell stabilizers

5. In the early phase of the allergic cascade, the most common sign or symptom is usually:
   a. Tearing
   b. Chemosis
   c. Itching
   d. No sign or symptoms present

6. Not treating ocular allergies before LASIK or other surgeries can lead to:
   a. Suboptimal quality of vision
   b. No additional issues
   c. Dry eye
   d. Scarring

7. Methods to distinguish ocular allergy from dry eye include:
   a. Tear film osmolality testing
   b. A thorough patient medical history
   c. Correlation of the onset of signs and symptoms with the time of year
   d. All the above

8. A study by Milton Hom, OD, published in the March 2012 issue of Annals of Allergy, Asthma & Immunology showed a ______ overlap between dry eye and ocular allergies.
   a. 0%
   b. 10%-15%
   c. 40%-50%
   d. 100%

9. Studies with bepotastine and epinastine have shown that treating contact lens patients who suffer from ocular allergies results in:
   a. No change in wear time
   b. No change in the need for rewetting drops
   c. Decrease in need for rewetting drops; wear time stays the same
   d. Decrease in need for rewetting drops; increases in wear time

10. The most potent trigger for allergies is:
    a. Pet dander
    b. Dust mites
    c. Pollution
    d. Grass

11. During the late phase of the allergic cascade, which of the following situations is/are true?
    a. Inflammation is more present than in the early phase
    b. Immune cells are releasing inflammatory mediators
    c. An accumulation of fluid has resulted in chemosis
    d. All the above

12. Viral conjunctivitis usually presents with:
    a. Mucopurulent discharge
    b. Itchy eyes
    c. Watery discharge
    d. Severe chemosis

13. When any elevation is evident at the limbus, the diagnosis should be _____ because there is no other condition in which there occur limbal accumulations of eosinophils or elevation at the limbus.
    a. Meibomian gland dysfunction
    b. Vernal keratoconjunctivitis
    c. Giant papillary conjunctivitis
    d. Atopic keratoconjunctivitis

14. What are some available treatment options to help manage ocular allergies?
    a. Steroids
    b. Antihistamines
    c. Antihistamine/mast cell stabilizer combination
    d. All the above

15. Which of the following is NOT a tip for proactively managing ocular allergies?
    a. Asking questions of your patients about all their ocular symptoms
    b. Scheduling regular visits with your ocular allergy patients throughout the year
    c. Prescribing a topical antihistamine to a patient with severe signs and symptoms of ocular allergy
    d. Sending your ocular allergy patients a reminder to schedule an appointment before the allergy season begins

16. Alcaftadine, 0.25% vs olopatadine, 0.1% were evaluated by Greiner and colleagues in a conjunctival allergen challenge (CAC) model. The results showed:
    a. Both agents are efficacious vs placebo in treating ocular itching and conjunctival redness lasting for 16 hours
    b. Both agents are efficacious vs placebo in treating ocular itching and conjunctival redness for up to 8 hours
    c. Alcaftadine’s onset of action is shorter than that of olopatadine
    d. Both a and c

17. Suboptimal management of ocular allergies may occur because:
    a. Clinicians often forget to look for ocular surface disease
    b. Ocular allergy is not the patient’s primary complaint when coming in to the office
    c. Patients believe bothersome contacts are a normal part of wearing contact lenses
    d. All the above

18. Which activity/activities of daily living do allergy patients claim is/are affected by their disease?
    a. Driving
    b. Sleeping
    c. Applying make-up
    d. All the above

19. Antihistamine/mast cell stabilizers treat ______ very well, and steroids are known to control ocular __________.
    a. Itch, inflammation
    b. Chemosis, itch
    c. Hyperemia, inflammation
    d. Inflammation, burning

20. There is significant comorbidity of ______ and ocular allergies.
    a. Allergic rhinitis
    b. Sjögren syndrome
    c. Blepharitis
    d. Meibomian gland dysfunction
Proactive Management of Ocular Allergy

Highlights From a Roundtable Discussion