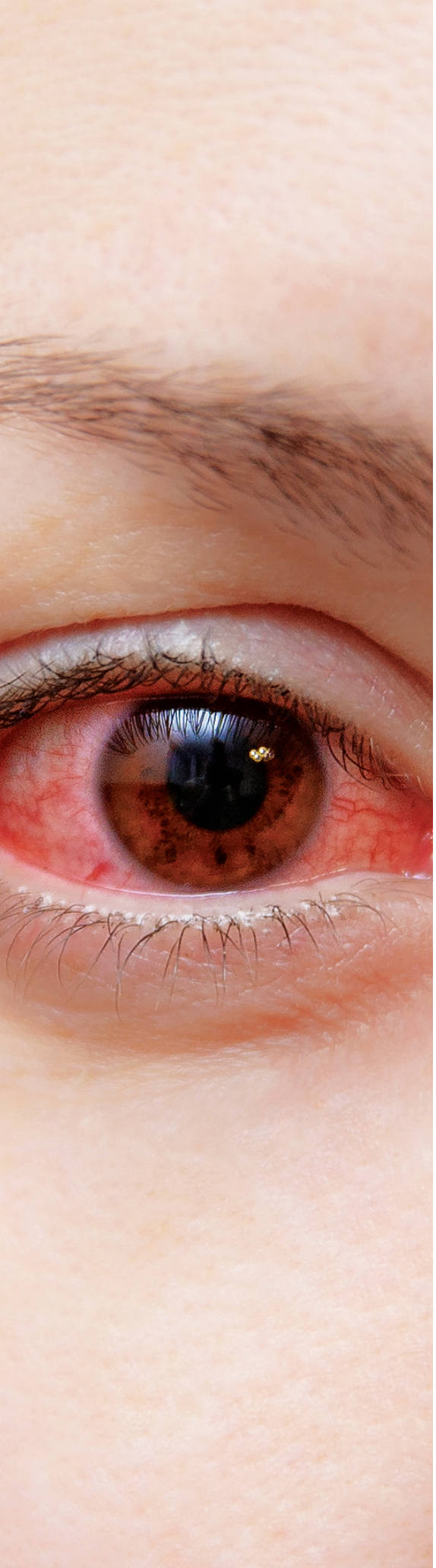

BASIC ALLERGY DIAGNOSIS AND TREATMENT

Is it allergy or is it dry eye disease? The answer matters, and in-office testing can prove enlightening.

BY JASON SCHMIT, OD

Many of us enjoy the changing seasons, but for some these changes bring on a host of allergens that cause watery, dirty, red, messy, irritated eyes. When a patient presents with these symptoms, allergies should be on your mind in the differential diagnosis, but dryness and ocular surface disease should also be considered as possible culprits.

UNDERSTANDING THE ALLERGIC RESPONSE PROCESS

Typically, allergic response is a two-step process. Step one occurs when an individual is first exposed to an allergen (antigen) and immunoglobulin E (IgE)-mediated antibodies join with associated mast cells, become activated, and take up residence in areas of the body most susceptible to additional exposure. At this point, the body is sensitized to the antigen but is not yet symptomatic. Step two happens with additional exposure. The now IgE-specific mast cells release histamine and prostaglandins, causing swelling, itching, pain, smooth muscle contraction, and vasodilation. The greater the exposure to the antigen, the more the mast cells are stimulated and the greater the allergic response.[1]

DIAGNOSIS

Patients may self-diagnose and decide to use over-the-counter allergy drops and vasoconstrictors, which can aggravate symptoms. Although many of us think of itching as the hallmark symptom of allergies, patients may also complain of redness, watery eyes, swelling of the eyelids, and mattery eyes.

AT A GLANCE

- Patients with allergies can experience ocular itching, redness, watery eyes, swelling of the eyelids, and mattery eyes.
- Patients may self-diagnose and use over-the-counter allergy drops and vasoconstrictors, which can aggravate symptoms; this is one reason why accurate diagnosis (allergies vs dry eye disease vs infectious cause) and treatment are so important.
- Avoidance of the allergen is the only guaranteed way to improve allergy symptoms, but common treatment tactics include systemic and topical antihistamines and combination antihistamine/mast-cell stabilizers.

TABLE. Common Options in Ocular Allergy Treatment

GENERIC NAME	BRAND NAME	MANUFACTURER	OTC
COMBINATION ANTIHISTAMINE/MAST-CELL STABILIZERS			
ketotifen fumarate ophthalmic solution 0.035%	Alaway	Bausch + Lomb	Y
ketotifen fumarate ophthalmic solution 0.035%	Zaditor	Alcon	Y
bepotastine besilate ophthalmic solution 1.5%	Bepreve	Bausch + Lomb	N
epinastine HCl ophthalmic solution 0.05%	Elestat	Allergan	N
azelastine HCl ophthalmic solution 0.05%	Optivar	Meda	N
olopatadine HCl ophthalmic solution 0.1%	Patanol	Alcon	N
olopatadine HCl ophthalmic solution 0.2%	Pataday	Alcon	N
olopatadine HCl ophthalmic solution 0.7%	Pazeo	Alcon	N
alcaftadine ophthalmic solution 0.25%	Lastacaft	Allergan	N
ANTIHISTAMINES			
emedastine difumarate ophthalmic solution 0.05%	Emadine	Alcon	N
MAST-CELL STABILIZERS			
nedocromil sodium ophthalmic solution 2%	Alocril	Allergan	N
lodoxamide tromethamine ophthalmic solution 0.1%	Alomide	Alcon	N
cromolyn sodium ophthalmic solution 4%	Crolom	Bausch + Lomb	N
NONSTEROIDAL ANTIINFLAMMATORY DRUGS			
ketorolac tromethamine ophthalmic solution 0.5%	Acular	Allergan	N
STEROIDS			
loteprednol etabonate ophthalmic suspension 0.2%	Alrex	Bausch + Lomb	N

Abbreviations: HCl, hydrochloride; N, no; OTC, over the counter; Y, yes

KEY POINTS FOR ALLERGY TESTING

When you arrange allergy testing for any patient, remember the following:

- Instruct the patient to stop taking oral and topical antihistamines 5 to 7 days before the testing.
- Some tricyclic antidepressants interfere with testing and may have to be discontinued. Consult with the patient's primary care physician if necessary before discontinuing.
- The antigens tested have been stored in glycerin, which some individuals are sensitive to.
- A patient who has no reaction to the control (histamine) may have an undiagnosed autoimmune condition. Additional blood tests will confirm this suspicion.
- Doctor's Allergy Formula tests only for 60 IgE-mediated antigens. Patients can still have allergies to other environmental, dermatologic, or contact-related items.
- Caution is needed with immunotherapy for patients of very young or old age, patients who are pregnant, patients with autoimmune disorders, those taking beta blockers, and those with unstable asthma.

Thus, a comprehensive history is a must to try to determine whether the patient has dry eye disease, an infection, or ocular allergies. It's essential to know when the patient's symptoms first occurred, how long he or she has been symptomatic, whether the symptoms are worsening, when and where the symptoms typically occur, and whether there are other modifying factors (eg, worse at work or better at home).

In patients with allergy, slit-lamp examination should reveal papillae on the inner palpebral conjunctiva of both upper and lower lids. Inflammation can be moderate or severe enough to cause the puncta to swell shut. The resulting lack of tear-film circulation and constant exposure of the ocular surface to antigens only exacerbates the allergic condition further. Surgical solutions (eg, punctoplasty or insertion of a polyvinylpyrrolidone punctal plug) may be necessary to open the puncta.

In-office point-of-care allergy testing can help clinicians figure out the cause of a patient's symptoms. Doctor's Allergy Formula (Bausch + Lomb) is an FDA-approved in-office allergy scratch test performed on a patient's arms in the clinic setting. See *Key Points for Allergy Testing* above for a list of considerations to take into account before scheduling patients for testing. The test, which is usually covered by most insurance companies, includes a panel of 60 allergens specific to your part of the country. It takes about 3 minutes to administer, and results are ready within 15 minutes.

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Percentage of people in developed nations who are affected by ocular allergy.[1]

Seasonal and perennial allergic conjunctivitis make up more than 95% of allergic eye disease treated in ophthalmic practices.[1]

1. Butrus S, Portela R. Ocular allergy: diagnosis and treatment. *Ophthalmol Clin North Am*. 2005;18(4):485-492.

TREATMENT TALK

Avoidance of the offending allergen or allergens is the only guaranteed way to improve allergy symptoms, but that's not always a realistic solution. Common treatment tactics (Table) include the use of systemic and topical antihistamines and combination antihistamine/mast-cell stabilizers. Topical steroids and nonsteroidal antiinflammatory drugs may also be used. If these options don't deliver satisfactory outcomes, it may be necessary to consider in-office allergy testing to determine the root cause of the patient's complaints.

If complete avoidance of the causative agents identified is not possible, in the past, allergists would administer weekly injections of immunotherapy shots, but now patients can opt for daily sublingual immunotherapy to desensitize their immune systems over a period of several weeks to months.

I believe that patients are more understanding and compliant with treatment recommendations when they know that there truly is a causative factor for their symptoms. Note: Check with your local state laws for clarity regarding optometry's ability to perform these tests.

IT PAYS TO BE SURE

Allergic eye disease can be difficult to diagnose. Ruling out dry eye disease and infectious causes is an important step to take before initiating treatment. Knowing the root cause of a patient's symptoms will prove helpful in finding appropriate solutions. Furthermore, figuring out the causative factor and creating a customized plan will impress your patients, improve their outcomes, and set your practice apart from others in the area. ■

1. Amin K. The role of mast cells in allergic inflammation. *Respir Med*. 2012;106(1):9-14.

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