Allergic Eye Disease

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KEYWORDS

• Allergy • Conjunctivitis • Vernal • Atopic • Seasonal • Perennial

KEY POINTS

- Allergic eye disease is almost always bilateral, and itching is the predominant symptom.
- Allergic eye disease can be clinically and pathophysiologically classified as seasonal allergic conjunctivitis, perennial allergic conjunctivitis, vernal keratoconjunctivitis, atopic keratoconjunctivitis, contact blepharoconjunctivitis, and giant papillary conjunctivitis.
- The first step in management is avoidance of allergen and cessation of eye rubbing.
- For mild cases without evidence of corneal involvement, treatment with a combination of topical antihistamines mast cell stabilizers is highly effective, and topical nonsteroidal anti-inflammatory drugs and steroids should be prescribed by an ophthalmologist.
- The presence of pain, visual impairment, or evidence of corneal involvement should prompt referral to an ophthalmologist for further management.

INTRODUCTION

Ocular allergy, affecting approximately 10% to 20% of the US population, is one of the most common ocular disorders encountered by pediatricians and ophthalmologists.[1,2] Patients with ocular allergy often present with bilateral inflammation of the eyelid and conjunctiva that may be associated with rhinitis, asthma, or other atopic conditions. Allergic eye disease is classified into seasonal allergic conjunctivitis (SAC), perennial allergic conjunctivitis (PAC), vernal keratoconjunctivitis (VKC), atopic keratoconjunctivitis (AKC), contact blepharoconjunctivitis, and giant papillary conjunctivitis (**Table 1**). The predominant symptom is itching and redness, and mucinous discharge or photophobia may be present. If pain is present, vision is impaired, the cornea is involved, or symptoms do not improve with treatment, the clinician should refer the patient to an ophthalmologist. A basic understanding of eye surface anatomy is required to fully appreciate key diagnostic elements. Initial treatment involves a combination of topical antihistamines and mast cell stabilizers. Topical nonsteroidal anti-inflammatory drugs (NSAIDs) and occasionally short-term use of topical steroids should be prescribed ideally by an ophthalmologist, because

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Table 1
Clinical presentation and characteristics of ocular allergy

Characteristic	SAC	PAC	VKC	AKC	CBC	GPC
Age	All ages	All ages	<20 y (male>female)	Adulthood (male>female)	All ages	All ages
Onset	Childhood	Childhood	Preadolescence	Any age	Any age	Any age
Allergens	Tree pollens (early spring) Weed pollen (August–October) Outdoor molds Grasses (May–July)	Dust mites Animal dander Mold Air pollutants	Seasonal allergens	Any can contribute	Cosmetics Ophthalmic eye drops Inert chemicals	Foreign body Contact lenses Suture material Prosthesis
Seasonal	Yes	No	Yes	No	No	No
Personal or family history of atopy	Common	Common	Possible	Always	Possible	Possible
Contact lens wear	No	No	No	No	Possible	Yes
Symptoms	Itching Tearing Photophobia	Itching Tearing Photophobia	Itching Copious mucous Photophobia	Itching Burning Photophobia	Itching Burning Photophobia	Itching Tearing Photophobia
Pathophysiology	IgE-mediated Type I hypersensitivity	IgE-mediated Type I hypersensitivity	IgE-mediated Type I and IV hypersensitivity	IgE-mediated Type I and IV hypersensitivity	Type IV hypersensitivity	IgE-mediated Type I and IV hypersensitivity
Conjunctival eosinophilia	Yes	Yes	Always	Always (acute phase)	Occasional	Rare
Serum IgE	Mildly elevated	Mildly elevated	Elevated	Elevated	Variable	Variable
Goblet cells	Elevated	Elevated	Marked elevation	Decreased	Variable	Variable
Periocular skin involvement	Sometimes edema	Sometimes edema	Sometimes edema	Sometimes edema, sometimes eczema	Dermatitis, sometimes edema	Sometimes edema
Visual impairment	+/–	+/–	++	+++	+/–	+/–