



Barbara Rinehart

CE: PHARMACY

ALLERGY: CONJUNCTIVITIS

My responsibilities were:





-  Worked with CE provider to define content
-  Prepared educational objectives
-  Wrote content, prepared tables, defined figures
-  Developed assessment test, glossary, reference list

TABLE 5 PRESCRIPTION TREATMENTS FOR ALLERGIC CONJUNCTIVITIS

Classification/Products	Mechanism of Action	Dose & Administration	Use in Children as Young as	Side Effects	Indications
Mast Cell Stabilizers					
Cromolyn sodium (Crolom [®] , Bausch & Lomb; Opticrom [®] , Allergan)	Mast cell stabilizer	1 or 2 drops in each eye 4-6 times a day at regular intervals	4 years	Transient ocular stinging or burning upon instillation	Treatment of vernal keratoconjunctivitis, vernal conjunctivitis, and vernal keratitis
Lodoxamide tromethamine (Alomide [®] , Alcon Labs Inc.)	Mast cell stabilizer that is 2,500 times more potent than cromolyn	1-2 drops in each affected eye, 4 times daily up to 3 months	2 years	Transient ocular	Treatment of vernal
Pemrolast potassium (Alamast [®] , Santen Inc.)	Mast cell stabilizer (early, late phases)	1-2 drops in each affected eye, 4 times daily			
Antihistamines					
Emedastine (Emadine [®] , Alcon Labs Inc.)	H ₁ -receptor antagonist	1 drop in each eye 4 times a day			
Levocabastine (Livostin [®] , Novartis)	H ₁ -receptor antagonist	1 drop in each eye 4 times a day			
NSAIDs					
Ketorolac tromethamine (Acular [™] , Allergan)	Reduces the itch response caused by prostaglandin release	1 drop 4 times per day			
Corticosteroids					
Loteprednol etabonate (Lotemax [®] & Alera [®] , Bausch & Lomb)	Inhibits the inflammatory response to inciting agents	1 drop 4 times daily	Safe in children		
Dexamethasone (Maxidex [®] , Alcon Labs LTD)	Inhibits the inflammatory response to inciting agents	For allergies, 1-2 drops in the affected eye every 3 or 4 hours until the desired response is obtained	N/A		

TREATMENT OPTIONS FOR ALLERGIC CONJUNCTIVITIS: A FOCUS ON AGENTS WITH DUAL AND MULTIPLE MECHANISMS OF ACTION

EDUCATIONAL OBJECTIVES

- After completing this monograph, the pharmacist will be able to do the following:
1. Discuss the prevalence and epidemiology of allergic conjunctivitis in the United States.
 2. Describe the most common factors that predispose patients to allergic conjunctivitis.
 3. Identify the five subtypes of allergic conjunctivitis and their associated symptoms, as well as potential complications, economic burden, and impact on patients' quality of life.
 4. Assess the various evaluation and testing procedures used in the diagnosis of allergic conjunctivitis.
 5. Examine the various pharmacotherapeutic options (OTC and prescription) that are available for the management of allergic conjunctivitis, as well as non-drug therapy (ie, avoidance of allergens).
 6. Discuss the role of the pharmacist in educating and counseling patients who suffer from allergic conjunctivitis.
- See Glossary, page 12.

INTRODUCTION

Allergic conjunctivitis—a bothersome inflammatory eye condition affecting millions of Americans—can substantially affect a patient's quality of life. Allergic conjunctivitis is a consequence of IgE-mediated type-I hypersensitivity reactions initiated by exposure to aeroallergens.¹ A key symptom is itchy eyes, but symptoms may also include redness and tearing. Conventional treatment of allergic conjunctivitis consists of allergen avoidance, comfort measures, and topical OTC and prescription vasoconstrictors, decongestants, antihistamines, and mast-cell stabilizers. The recent increased understanding of the pathogenesis of allergic conjunctivitis has led to the introduction of several agents with dual and multiple mechanisms of action. These agents target the complex events of the allergic response and have proven to be more efficacious compared to single-action agents in reducing or preventing the symptoms of allergic conjunctivitis.^{2,3,4,5,6,7}

The large variety of over-the-counter (OTC) and prescription medications available to treat allergic conjunctivitis can result in confusion for patients, many of whom will turn to their pharmacist for assistance. Consequently, pharmacists play an important role in providing patients with education and guidance regarding available therapies and their appropriate use, as well as techniques for allergen avoidance. To assist the pharmacist in this role, this monograph will discuss important aspects of allergic conjunctivitis and its treatment, including its etiology, pathogenesis, diagnosis, and symptomatology; therapeutic options (focusing on agents with dual and multiple mechanisms of action); and patient counseling guidelines.

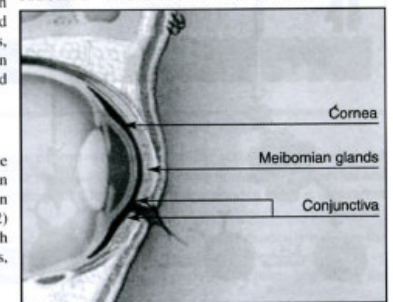
Anatomy

Ocular allergies typically involve the soft tissue surrounding the globe, conjunctiva, eyelids, and facial skin (see Figure 1). The typical signs of ocular allergy can include the following: (1) redness or vasodilation, and (2) chemosis or swelling of the conjunctiva and/or skin, with histology showing inflammatory cells, such as mast cells, eosinophils, and/or lymphocytes (see Figure 2, page 2).


Prevalence and Epidemiology

Allergic conjunctivitis is estimated to affect more than 40 million people annually in the United States.¹ It is the

FIGURE 1 CROSS SECTION OF THE EYE



Adapted from: Carter S. Eyelid disorders: diagnosis and management. *Am Fam Phys.* June 1998. Available at: <http://www.aafp.org/afp980600ap/carter.html>.




CONTINUING EDUCATION

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