

Allergic conjunctivitis: Time for a new classification

To the Editor,

The term “ocular allergy” includes several disorders and many pathophysiologic mechanisms (other than those that are immunoglobulin E [IgE] related) that affect the entire ocular surface (lid, conjunctiva, and cornea): seasonal allergic conjunctivitis and perennial allergic conjunctivitis, vernal keratoconjunctivitis, atopic keratoconjunctivitis, and giant papillary conjunctivitis.^{1,2}

In a recent review published in *Allergy & Asthma Proceedings*, Bielory *et al.*³ proposed an algorithm for the diagnosis and treatment of allergic conjunctivitis. However, in other allergic disorders (*i.e.*, asthma, rhinitis, and atopic dermatitis), a more generic pathophysiology based classification of allergic, nonallergic, and mixed forms has been suggested, which illustrates a reliance on clinical presentation and severity of symptoms (as in asthma) as a means of classification. Because of the heterogeneity and oftentimes overlapping systems of classification currently in use for ocular allergic disorders, we propose a new, more clinically relevant, taxonomic system.

The term “allergic conjunctivitis” includes different clinical entities, but, only for some of these entities, the classic type I hypersensitivity determines all the manifestations of the disease; other immunologic (IgE and non-IgE mediated) and nonimmunologic mechanisms may be involved in their development. Moreover, in the current classification, the terms “allergic” and “atopic” are not properly used. “Atopy” refers to the familial predisposition toward developing allergic hypersensitivity reactions; it may have a hereditary component, although the contact with the allergen must occur before the hypersensitivity reaction can develop. The term “allergy”

refers to a hypersensitivity reaction of the immune system initiated by specific immunologic mechanisms that involve antibody-mediated and/or cell-mediated mechanisms to produce distinct disease manifestations. Allergic responses are specific to and typically reproducible on sufficient exposure to an allergen. These manifestations may be clinically divided into those that are IgE mediated and those that are non-IgE mediated. Hypersensitivity reactions and/or disease manifestations of hypersensitivity without a defined immunologic mechanism are termed nonallergic.⁴

Therefore, we propose a new classification that aims to distinguish the pathophysiologic mechanism that underlies the disease, as in other allergic diseases (Table 1). In this new classification, pure “allergic” forms (with an exclusively type I hypersensitivity etiology) should be clearly distinguished from “nonallergic” multifactorial forms (which involve either non-IgE-mediated and non-immune-mediated reactions). We suggest including seasonal allergic conjunctivitis and perennial allergic conjunctivitis (the first is usually caused by airborne pollens and the second by involvement throughout the year with exposure to perennial allergens) under the name of “allergic conjunctivitis,” with common symptoms and both related to an IgE mechanism. The new term of “multifactorial conjunctivitis” should include the vernal keratoconjunctivitis, characterized by a nonspecific hyperreactivity induced by nonspecific stimuli (such as wind, dust, and sunlight) not related to allergen levels in the environment, and atopic keratoconjunctivitis, which is a mixed form, with an IgE-mediated and non-IgE-mediated etiology. Finally,

Table 1 Old and new classification of allergic conjunctivitis

Old Classification	Type of Reaction	Triggers	New Classification
SAC PAC	IgE mediated	Pollens Dust mite, animal dander, cockroach	Allergic conjunctivitis
VKC, AKC	Non-IgE mediated, IgE-mediated/ non-IgE mediated (mixed)	Nonspecific irritants (dust, wind, sunlight); mixed	Multifactorial conjunctivitis
GPC	Nonimmune mediated	Trauma	Traumatic conjunctivitis

SAC = Seasonal and perennial allergic conjunctivitis, PAC = seasonal and perennial allergic conjunctivitis, VKC = vernal keratoconjunctivitis, AKC = atopic keratoconjunctivitis, GPC = giant papillary conjunctivitis.

the giant papillary conjunctivitis remains, in the new classification, a traumatic disorder.

This new approach, based on the pathophysiology of the disease, should be helpful to ophthalmologists, allergists, and pediatricians because a correct nomenclature may lead to a better diagnosis, therapy, management, and prognosis. Indeed, for allergic forms (SAC and perennial allergic conjunctivitis), more directly related to IgE, first-line therapy should include a mast cell stabilizer and a histamine H1 receptor antagonist, with the use of topical steroids at the start of the therapy or in the period of more-severe symptoms. For multifactorial conjunctivitis, in addition to topical antiallergic therapy, specific drugs should be added for atopic keratoconjunctivitis (mixed IgE and non-IgE mechanisms) topical steroids, with the therapy for cutaneous involvement; for vernal keratoconjunctivitis topical cyclosporine; and for steroids (in eyes without cornea involvement) is indicated. For giant papillary conjunctivitis, besides the discontinuation of corneal lens use, short-term topical steroid therapy may be useful.³

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