Institute of Ophthalmology “Conde de la Valenciana”, Mexico City an all subjects gave their informed consent to obtain samples. Tear and Serum Samples were collected to determine cytokines IL2, IL-4, IL-5, IFN-g, TNF-a, IL-10 by cytomteric bead arrays (CBA), following manufacturer’s instructions. 

**Results:** Patients showed lower significant levels of L-4 after 6 months of treatment, without changes in IL2, IL5, TNFαa and IL10. Significant Clinical improvement was also observed since 3 months of treatment and was maintained until the end of 6 months. 

**Conclusions:** DLE could be an excellent therapeutic tool to improve the clinical outcome in ACNST patients; it is possible that clinical improvement could be Tear IL-4 dependent. 

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**358 Histochemical Study of Allergic Inflammation in Conjunctiva From Ovalbumin Sensitized Rabbits after Ocular or Nasal Challenge**

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**Background:** We previously demonstrated that subcutaneous sensitization with ovalbumin (OVA) induce generation of specific IgE antibodies and quantitative modifications in immune cells populations from different mucosal sites in rabbit. The aim of the study is characterization of eosinophil infiltration in conjunctival mucosa from OVA sensitized and ocular and nasal challenged rabbits.

**Methods:** Animals were divided into 4 groups: G1 (n = 9): normal control; G2 (n = 10): subcutaneous sensitized with OVA; G3 (n = 10): subcutaneous sensitized and conjunctival challenged with OVA; G4 (n = 9): subcutaneous sensitized and nasal challenged with OVA. Four hours after challenge animals were sacrificed and obtained samples were processed for histochemistry with cromotrope 2R for eosinophil detection. Cells were counted in 200 high power fields per group.

**Results:** Data were expressed as positive cells per high power field. Conjunctival mucosa: G1: 2.3; G2: 3.4; G3: 12.2; G4: 3.3 (G3 vs G1, G2 y G4 P < 0.001). Specific anti-OVA-IgE levels were evaluated by positive passive cutaneous anaphylaxis test (PCA) at 160 fold dilutions.

**Conclusions:** We observed an increase in the number of eosinophils-positive cells after local challenge in conjunctiva as compared to normal controls and sensitized and nasal challenged animals. We conclude that systemic sensitization with soluble antigen and conjunctival challenge induces modifications in number of eosinophil populations in conjunctiva but not in nasal challenged rabbits.

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**359 Prevalence of Allergic Conjunctivitis in Childhood**

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**Background:** The prevalence of allergic conjunctivitis (AC) has not been established. Estimates suggest that ocular allergies affect 15 to 20% of the worldwide population yet most epidemiological studies encompasses nasal and ocular allergy symptoms together and have not been specific with respect to AC. The aim of this study was to verify the prevalence of ocular allergy symptoms in adolescents.

**Methods:** Adolescents were selected from a sample of schools and self-completed in classrooms a previously validated questionnaire on symptoms of AC. AC was considered when more than 3 episodes of ocular itching were reported in the past 12 months. Related symptoms as tearing, photophobia, foreign body sensation, impact on daily activities, and diagnosis of allergic conjunctivitis were analyzed.

**Results:** Questionnaires from 3120 adolescents (mean 13.3 ± 1.1 years) were analyzed. Ocular itching in the past 12 months occurred in 1,592 (51%). The most frequent associated symptom was tearing (74%) followed by photophobia (50.1%) and foreign body sensation (37.1%). The prevalence of allergic conjunctivitis was 20.7% affecting more females (56.1% vs 45.9%; P < 0.01). Moderate and severe interference in daily activities were reported by 66% and 21%, respectively. Diagnosis of AC was reported by 47% of them.

**Conclusions:** Symptoms of ocular allergy are common and cause great impact on daily activities in adolescents. Accessing risk factors and the allergic status of these patients should be the focus of future epidemiological studies on AC.

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**360 Effects of Omalizumab in Children with Atopic Keratoconjunctivitis: A New Treatment for Severe Ocular Allergies?—Report of Two Cases**

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**Background:** Keratoconjunctivitis is a severe form of ocular allergy, difficult to control and with poor prognosis. The purpose of this study was to verify the clinical efficacy of humanized monoclonal antibody omalizumab treatment in children with this condition.

**Methods:** Report of 2 cases of children with severe vernal keratoconjunctivitis poorly controlled by the conventional therapeutic scheme that were submitted to treatment with Omalizumab. The disease was scored according to the severity by ophthalmologic evaluation (amount of viscous mucus, giant papillae >1 mm, aspect of cornea/keratitis) and graduation of allergic symptoms (itching, tearing, photophobia), before and after the last subcutaneous administration of Omalizumab. Evaluation by Parents/ guardians using the same score, regarding to itchy eyes, runny eyes and photophobia, after Omalizumab application, was also requested.

**Results:** Case 1: MPOS (7 years) with vernal keratoconjunctivitis and atopic dermatitis since childhood, both with progressive severity. Recalcitrant ocular itching and photophobia, in addition had other atopic conditions such as mild asthma, rhinitis and egg allergy. Total IgE = 1323 IU/mL. Ocular manifestations poorly controlled with topical use of antihistamines, cromolyn, tacro-limus and cyclosporine. The use of topical corticosteroids was frequent, but resulted in brief improvement. Case 2: HCS (6 years) with vernal keratoconjunctivitis since 3 years age, and mild asthma and moderate persistent rhinitis. Continued use of topical tacrolimus 0.03% showed an initial improvement, but subsequent relapses resulted in frequent use of systemic prednisolone and eye drops antibiotics to control symptoms. Total IgE = 1530 IU/mL. After the second Omalizumab application, good or excellent improvement in ocular symptoms of both children was observed by allergists and parents. Ophthalmologic evaluation showed moderate improvement in the amount of slime and little or no improvement in the structural changes of the eye (cornea and appearance of giant papillae).

**Conclusions:** There are few reports about the use of Omalizumab in allergic keratoconjunctivitis. Our work points to the need for further research in this area as the Anti-IgE may become a promising therapy for this difficult to control condition.

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**361 Giant Papillary Conjunctivitis without Associated Triggers. Report of Two Cases**

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Giant papillary conjunctivitis is associated with soft and rigid contact lenses. Maria C Jiménez-Avila, Jorge Galicia-Carreón, MD, MSc, Raul Velázquez-Sámano, MD. Servicio de Alergia e Immunología Clínica, Hospital General de México, Mexico City, Mexico.

**Background:** Giant papillary conjunctivitis is associated with soft and rigid contact lenses, band keratopathy, corneal foreign bodies, limbal dermoids, and cyanoacrylate tissue adhesives. Patients present decreased lens tolerance, increased lens movement and awareness, mucus, irritation, redness, burning, and itching. It is bilateral and 10% unilateral. The upper tarsal conjunctiva shows inflammation, papules >0.3 mm, bulbar conjunctival injection, superior corneal pannus or opacities. Fluorescein noted papillary reaction. Histopathology: Mast cells, basophils and eosinophils were found in the epithelium and substantia propria. Histamine, Ig, IgG, IgM, C3, Factor B, C3 anaphylatoxins, Eotaxin, Neutrophilic chemotactic factor elevated in tears. Lactoferrin is decreased. Pathophysiology: The cause is unknown, factors as immunologic disease, mechanical trauma or irritation influence. Contact lenses become coated that serves as an antigen so the increased proteins in the tear film result in further coating. Treatment: Nonsteroidal anti-inflammatory agents, topical mast cell stabilizers or mast cell stabilizer-antihistamines. Replacement lenses at 2 weeks to 3 months. Daily lens disinfection with hydrogen peroxide and unpreserved saline solution. Severe should stop wearing their contact lenses for >4 weeks or refit with rigid gas-permeable lenses.

**Methods:** A 7 year-old female presents 6 months ago redness, pruritus, foreign body sensation, eyelid inflammation without improvement with treatments. On examination with conjunctival hyperemia, hypertrophy of papillae and epiphora. A 22 year-old male presents at 7 years old conjunctival burning, foreign body sensation, conjunctival hyperemia, hyaline secretion treated with topical antibiotics and steroids with minimal and temporal improvement. On examination, conjunctival hyperemia, giant papillae on superior tarsal bilateral predominantly left. Stool negative.

**Results:** We found 2 patients affected without common triggers and early onset of severe clinical manifestations and refractory to usual treatment.

**Conclusions:** We present 2 clinical cases of unusual presentation since both of them were pediatric presentation and Giant papillary conjunctivitis has its peak of incidence in the adult population. Besides, both patients lacked an initial trigger such as contact lens wearing or ophthalmologic surgery. Both of them had a poor response to treatment. This disease should be considered in pediatric population and start treatment immediately to avoid complications such as loss of vision.

### 362 Contact Allergy Due to Ophthalmic Drugs in Uruguay
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**Background:** The external eye is exposed to a large number of environmental, cosmetic and pharmacological allergens and the frequency of external eye diseases related to the prolonged use of ophthalmic medications and contact lens wear is increasing. Predisposing factors for contact allergy are: high exposure to topical drugs (eyelids & eye), high percutaneous absorption in eyelids, high potential for concomitant irritation and hand transfer of allergens due to frequent rubbing.

**Methods:** Ninety three patients 56 women and 37 men, age range 10 to 81 years old, mean age 43 years old with a clinical picture compatible with ocular allergy were referred to our Allergy Unit by the Department of Ophthalmology at the University Hospital for allergological evaluation, including a thorough history, complete clinical examination as well as laboratory techniques and skin testing. Patch-testing was performed with the standard series, an ophthalmic series of allergens developed at our unit, as well as additional allergens according to the clinical situation.

**Results:** Contact allergy was more frequently caused by topical antibiotics and preservatives and occasionally by mydriatic agents and topical drugs for glaucoma. The allergens more frequently implicated were Neomycin (10.7%), Bacitracin (9.6%) Thimerosal 8 (8.5%) Benzalconium chloride 5 (5.3%) Phenylephrine hydrochloride 3 (3.2%), local anesthetics 3 (3.2%), Chloramphenicol (3.1%), Polymyxin (2.1%), Kanamycin (2.1%), Gentamicin (2.1%), Tobramycin (2.1%), Beta-blockers 1 (1.7%), and others (6.1%).

**Conclusions:** Patients with a clinical picture compatible with ocular allergy should be referred for allergologic evaluation. A comprehensive approach will often provide clues for a presumptive diagnosis and appropriate management. When a contact allergy is found it is mandatory to avoid contact with the precipitating substance. This may simply be a case of stopping or altering an ophthalmic medication. The proper use of ophthalmic preparations should decrease the incidence of allergic contact reactions.

### 363 Increased Frequency of γδ T Cells in Patients with Allergic Conjunctivitis
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**Background:** It is well known involvement of CD4+ T cells in the maintenance of allergic immune response at conjunctiva; recently, it was suggested in the mouse model that γδ T cells are needed for the ocular allergic response maintenance; however contribution of γδ T cells in human allergic conjunctivitis is still unknown. The aim of this study was to evaluate the frequency of γδ T cells in AC patients.

**Methods:** Patients with AC diagnosis were included. All participants gave their informed consent for blood sampling after written information was provided. Peripheral blood mononuclear cells (PBMC) were separated on a Ficoll density gradient, after that PBMC were stained with mAb against human CD3-PeCy5 and γδ-PE. The cells were analysed for marker expression by collecting 10,000 events using a FACSscan flow cytometer (Becton Dickinson, CA, USA) and CellQuest Pro software. To analyse cell surface marker staining, a gate was drawn around the lymphocyte population based on their physical properties (forward and side scatter). Data were analyzed with t-test and differences were considered statistically significant with P < 0.05.

**Results:** We observed a higher frequency of γδ T cells in patients with AC, γδ T cells were increased 11.9 times in AC-patients (22.63 ± 2.9%) than healthy donors (1.9 ± 1.9%) (P = 0.002).

**Conclusions:** γδ T cells are increased in allergic conjunctivitis patients. These data suggest that lipids antigens could be involved in pathogenesis of allergic conjunctivitis in humans and possibly implicated in chronic responses at ocular level, as has been suggested in the mouse model of allergic conjunctivitis.

### 364 Zero Itch in Eyes Treated With Olopatadine Hydrochloride Ophthalmic Solution, 0.2% in Bilateral Conjunctival Allergen Challenge Studies
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**Purpose:** To further assess the prevention of ocular itching with olopatadine hydrochloride ophthalmic solution, 0.2% (OLO) in patients with allergic conjunctivitis.

**Methods:** This was a post-hoc analysis of 85 patients participating in 2 prospective, randomized, double-masked bilateral conjunctival allergen challenge (CAC) studies. Patients received OLO in one eye and placebo (vehicle) in the contralateral eye. Ocular itching was self-assessed by patients and rated on a scale of 0 (none) to 4 (severe). To assess onset of action,