Results: Histamine release after ConA challenge varied from 0% to 100% in Indian subjects. Eighteen percent subjects showed less than 5% histamine release (non-releasers). Flow-cytometric analysis revealed a significantly reduced expression of FcepsilonRI in non-releaser basophils ($P < 0.05$). Total serum IgE levels were also significantly low ($P < 0.05$) in non-releasers. Flow-cytometric analysis revealed a significantly reduced expression of Ly6 and Syk kinases in basophils ($P < 0.05$). Histamine release also significantly correlated with expression of Ly6 and Syk kinase ($P < 0.05$). Non-releasers showed the presence of SNP at +79 (T-C), which leads to the one amino acid change at 8th position in the mature IL-3 from serine to proline.

Conclusions: About 18% of the Indian subjects studied showed non-releaser phenotype and also had reduced serum IgE levels and FcepsilonRI expression. Non-releasers have shown the presence of less potent isoform of IL-3/8, which is suspected to be common factor responsible for the non-releaser phenotype. This needs to be extended to a larger sample size and could be a potential target for the development of therapeutics for allergic patients.

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IL-17 Role in the Regulatory Function of B Cells
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Background: B lymphocytes are known to be important cytokine sources in inflammation and play a pathogenic role by producing autoantibodies in a number of chronic immunological diseases. However, B cell depletion therapy induced an exacerbation of symptoms in some patients with autoimmune disorders, revealing that B cells play a critical anti-inflammatory role mediated by IL-10 release. We therefore investigated the human B cell regulatory subset producing IL-10 in response to stimulation.

Methods: Highly purified B cells were obtained from tonsils by using a multiple-step separation procedure which included rosette depletion, adherence depletion, CD3+ cell magnetic-activated depletion and CD19+ magnetic-activated positive cell selection. CD20+ purity was verified by flow cytometry. The CD19+CD20+ B cells were stimulated with CpG oligonucleotide, IL-4, IFN-gamma, anti-CD40, IL-17A and IL-17F, either alone or in combination. The expression of both IL-6 and IL-10 mRNA was analyzed by quantitative RT-PCR and by ELISA. B regulatory cell subsets expressing IL-10 and the markers CD5 and CD1d were quantified by FACS analysis. B cell proliferation was determined by 3H thymidine incorporation or CFSE labeling.

Results: Expression of IL-10 mRNA and protein in purified B cells from tonsils was weakly stimulated by anti-CD40 antibody, CpG oligonucleotide or with IL-17. When B cells were simultaneously stimulated with IL-17, anti-CD40 antibody and CpG oligonucleotide, the mRNA and protein expression of IL-10 was strongly increased ($n = 3; \sigma = 0.001$). B cells proliferation was also significantly increased. In contrast, stimulation with IL-4 alone or in combination with anti-CD40 antibody, decreased the expression of IL-10 ($n = 3; \sigma = 0.001$).

Conclusions: TLR9 receptor stimulation synergizes with CD40 and IL-17 receptors stimulation in the induced proliferation and potent release of IL-10 cytokine while decreasing IL-6 production in B cells. These novel findings provide evidence that B lymphocytes might be an important source of the anti-inflammatory IL-10 cytokine, and provide novel evidence that stimulation of B lymphocytes with IL-17 cytokine could be an important regulatory mechanism in immune responses.

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Role of TH-17 Cytokines in Steroid Insensitivity in Peripheral Blood Mononuclear Cells. Relationship to GR-alpha and GR-beta Expression
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Background: Inhaled corticosteroids represent the most common treatment for asthma. Although most asthmatic patients respond well, a significant proportion of severe asthmatics require higher doses or even fail to respond to oral or inhaled corticosteroids. We previously reported that glucocorticoid receptor-beta is associated with corticosteroid resistance in airway epithelial cells from asthmatic patients and that Th-17 cytokines increase steroid insensitivity via a mechanism involving GR-beta upregulation. We aim to investigate whether IL-17A and F cytokines enhance steroid unresponsiveness in PBMCs from normal subjects and severe asthmatics via the upregulation of GR-beta isoform.

Methods: PBMCs were cultured for 48 hours in the presence or absence of IL-2, IL-4, IL-17A, IL-17F or IL-23 cytokines. Expression of GR-alpha, GR-beta, IL17G and IL-6 was determined using Q-RT-PCR and/or Western blotting. Response to Dexamethasone was determined on the inhibition of PHA-induced proliferation by Dexamethasone (IC50) by using either 3H-thymidine or CFSE-labelled cells. Response of the cells to Dexamethasone-induced apoptosis was determined by Annexin-V staining.

Results: Treatment of PBMCs with IL-17A+IL-17F combined significantly decreased the mRNA expression of GR-alpha while that of GR-beta was significantly upregulated. IL-2+IL-4 in combination significantly decreased GR-alpha expression but had no effect on GR-beta receptor expression. IL17A+IL17F+IL23 combined induced the highest ratio of GR-beta/GR-alpha in PBMC from normal subjects. Either IL-17A+F or IL-2+IL-4 combinations significantly decreased the inhibitory effect of Dexamethasone on PBMC proliferation (IL-17A+F IC50 = 190 mN Dex; IL-2+IL-4 IC50 = 1060 mN Dex), when compared to the control without cytokine stimulation. In the presence of Dexamethasone, IL-2+IL-4 but not IL-17A+IL-17F, inhibited the expression of the glucocorticoid-inducible leucine zipper gene (GILZ) in PBMCs from both normal (60%) and asthmatics (45–50%), which was correlated with significantly higher apoptosis in cells stimulated with IL-2+IL-4.

Conclusions: IL-17A, IL-17F, IL-2, and IL-4, which are known to be upregulated in the blood and lung tissue of asthmatics, contribute to steroid insensitivity of severe asthmatic patients by modulating the expression of GR-alpha and GR-beta receptors on peripheral blood PBMCs. GR-beta could protect PBMCs from Dex-induced apoptosis. Furthermore, the increased GR-beta/GR-alpha ratios by both IL-17A+F and IL-2+IL-4 cytokines correlates with the decreased inhibitory effect of Dexamethasone on PHA-induced PBMC proliferation.

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Prevalence of Latex Sensitization Between Medicine and Dentistry Students from Nuevo Leon University
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OCCUPATIONAL ALLERGIES

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Background: Latex allergy has become an important health problem in the last 2 decades. Sensitization in general population is about 1%,1 Healthcare workers have a frequency of 2% to 25%.2 There is not information about this issue in Mexico. Our objective was to know and compare prevalence of latex sensitization in last grade medicine and dentistry students of the Nuevo Leon University.

Methods: This was an observational, prospective and comparative study. Last grade medicine and dentistry students were invited to participate. Spanish version of the Latex Allergy Questionnaire (ACAAI recommended) and skin tests for latex: prick test (SPT) (latex extract Allerstand 1:20 w/v), prick by prick (PBPT) (latex gloves) were performed in every patient. Positive control was histamine 10 mg/mL and glycerinated solution for negative control (allerstand) using duotip test disposable. SPT and PBPT were read 15 min after application and positive result were interpreted as a wheal diameter of 3 mm more than negative control. Data were analyzed for demographics with Statistical Package for Social Sciences (SPSS v16.0), for comparison between groups of sensitized patients fighter exact test was performed.

Results: Study included 378 patients, 213 (56.3%) dentistry students and 165 (43.7%) medicine students. Male/female ratio was 1.2/1 for medicine and 0.36/1 for dentistry. Average age was 23 years in both groups. General sensitization to latex was 7.1% (27), per group medicine was 6% (10) and dentistry 7.9% (17). Almost to all commercial extract, only one patient in each group was positive to gloves PBPT. By questionnaire 10.9% medicine group and 17.3% of dentistry group report symptoms with latex, but only 14.8% of dentistry group was Skin test positive, no one in medicine group. Rhinitis or conjunctivitis symptoms were found in 48.1% of sensitized patients. Most frequent foods associated with symptoms were pineapple (2.6%), fig (2.1%), avocado (1.9%) and kiwifruit (1.6%). There was no statistical difference between both groups sensitization ($P = 0.549$).

Conclusions: Latex sensitization was more common in healthcare students than references in general population but symptoms referred to latex no always are demonstrated by IgE sensitization, so delayed mechanism must be take in to account to get a better diagnosis and treatment approach.

516 Profile of Latex Sensitization in Children with Myelomeningocele of São Paulo, Brazil
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Background: Latex allergy is an important cause of occupational allergy and is responsible for numerous allergic reactions in sensitized individuals.

Methods: The study included 55 children with myelomeningocele followed at a specialized center. In addition to a standard questionnaire and skin tests for immediate cutaneous hypersensitivity to aeroallergens and total latex, the patients underwent determination of serum total and specific IgE to latex and its fraction recombinants.

Results: The rates observed were 45% for sensitivity and 20% for latex allergy (sensitization with clinical symptoms). Twenty-four (43.6%) patients were atopic and the average age at the first episode of reaction to latex was 44.5 months, with cutaneous reactions being the most frequently reported (72.7%). Specific IgE to fractions rHev b1, 3, 5, 6.1 and 6.2 were detected in more than 50% of patients allergic to latex. The group comprising sensitive and allergic patients was different from non-sensitized subjects regarding the following variables: atopy, rhinitis, angioedema, average number of surgeries, patients with 4 or more surgeries, use of ventricular peritoneal shunt, the presence of at least one skin tests for immediate cutaneous hypersensitivity positive for aeroallergens and serum total IgE greater than 200 KU/l. Multivariate analysis showed as significant: current asthma, atopy and the number of surgeries undergone.

Conclusions: Our study documented the raised prevalence of awareness and latex allergy in patients with myelomeningocele. Specific IgE to fractions rHev b1, 3, 5, 6.1 and 6.2 were detected in more than 50% of children with myelomeningocele who are allergic to latex. The number of surgeries that the patients were submitted to determined higher levels of specific IgE, especially rHev b5 and 6.01. History of current asthma, atopy, and having undergone 4 or more surgeries were independent risk factors identified for latex allergy.

517 Specific IgE to Recombinant Allergens of Latex and Foods in Patients With Spina Bifida
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Background: To identify the profile of specific IgE to recombinant allergens of Hevea brasiliensis and fruits in patients with spina bifida and latex allergy.

Methods: Cross-sectional study with 210 patients aged 0 to 18 who have spina bifida and who have been followed in a Reference Hospital in Sao Paulo, Brazil. Patients were submitted to a questionnaire about immediate latex allergy symptoms. Their blood were collected for the detection of specific IgE to recombinant allergens of Hevea brasiliensis and specific IgE to rHev b1, 3, 5, 6.01, 6.02, 8, 9, 11, and specific IgE to avocado, banana, chestnut, potato and papaya, through ImmunoCAP technique.

Results: Patients’ mean age was 7.9 years, and 108 (51%) were female. The mean time to the first surgery was 40 days, and patients presented an average of 4 or more surgeries during their lives. Forty-seven (22%) patients reported symptoms related to latex, predominantly cutaneous symptoms (85%). The latex recombinant allergens most related with symptoms were rHev b1 (19 patients, 68%) and rHev b3 (11 patients, 39%). On the other hand, tests were also positive to rHev b5 (5 patients, 32%), rHev b6.01 (12 patients, 43%), rHev b6.02 (12 patients, 43%), rHev b9 (patients 1, 4 %), and rHev b11 (9 patients, 32%). All tests were negative to rHev b8. Although, 36 (17%) patients tested positive to at least one of the food allergens, they did not present symptoms related to them. Balloons and latex gloves were the main objects associated with the onset of symptoms.

Conclusions: In this study, the prevalence of latex allergy was 22%. We observed a different profile of latex sensitization in relation to the literature. Patients do not present latex-fruit syndrome, in spite of cross-sensitization.

518 Association between Clinical History and Specific IgE Recombinants Latex Allergens
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Background: To identify the profile of sensitization to latex allergens in patients with spina bifida, with and without symptoms of latex allergy.

Methods: Cross-sectional study with 210 patients aged 0 to 18 who have spina bifida and who have been followed in a Reference Hospital, in Sao Paulo, Brazil. Patients were submitted to a questionnaire for immediate symptoms related to latex allergy and they were classified as symptomatic (S) or asymptomatic (A), depending the presence of immediate symptoms on exposure to latex. Their blood were collected for the detection of serum total IgE, specific IgE to latex, and specific IgE to rHev b1, 3, 5, 6.01, 6.02, 8, 9, 11, through ImmunoCAP technique.

Results: Patients’ mean age were 7.9 years and 108 (51%) were female. S patients were 47 (22%). For these patients, 28 (60%) had at least one specific IgE positive test and 19 (40%) presented all tests negative. The A cases accounted for 163 (78%) patients. For these patients, 57 (35%) had at least one specific IgE test positive and 106 (65%) presented all tests negative. The