Background: Latex allergy has become an important health problem in the last 2 decades. Sensitization in general population is about 1%. Healthcare workers have a frequency of 2% to 25%. 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 Fisher 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.

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 foods 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 serum specific IgE to latex, 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 (9 patients, 32%), rHev b6.01 (12 patients, 43%), rHev b6.02 (12 patients, 43%), rHev b9 (1 patients, 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.

516 Profile of Latex Sensitization in Children with Myelomeningocele of Sao 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.

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 latency 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
prevalence of sensitization to recombinant latex allergens is not the same among patients S and A: rHev b1 (S = 68%, A = 49%), rHev b3 (S = 39%, A = 28%), rHev b5 (S = 32%, A = 21%), rHev b6.01 (S = 43%, A = 23%), rHev b6.02 (S = 43%, A = 19%), rHev b8 (S = 0, A = 2%), rHev b9 (S = 4%, A = 5%), rHev b11 (S = 32%, A = 23%).

Conclusions: In this study, the prevalence of latex allergy in spina bifida patients is 22%. In symptomatic patients, the sensitivity of specific IgE tests is very poor. The profile for rHev b positivity is different in symptomatic and asymptomatic patients.

Background: Asthma and atopy have a complex background which may result from the interaction of genes and environments. Interleukin (IL)-10 is known to play various roles in immune-regulating and anti-inflammatory responses. The aim of this study was to evaluate the possible effect of the IL-10 promoter polymorphisms on susceptibility to childhood asthma.

Methods: We recruited 333 patients with atopic asthma, 55 with non-atopic asthma, and 248 normal controls. We performed a genetic association study of 3 genetic polymorphisms (IL-10-1082A>G, IL-10-819T>C, −592A>C) of the IL-10 promoter.

Results: There was no difference between atopic asthma, non-atopic asthma and normal controls in allele, genotype or haplotype frequencies of these IL-10 polymorphisms. However, the −1082A>G polymorphism and ATA haplotype in the IL-10 promoter gene were associated with airway hyperresponsiveness (AHR) and the −819T>C, −592A>C, and ATA and ACC haplotypes were also shown to be related with serum eosinophil cationic protein (ECP).

Conclusions: Our results suggest that the polymorphisms within the IL-10 promoter may have a disease-modifying effect in asthmatic airway.

521 Serum NT-3 and NT-4 Levels are Associated with Clinical Severity in Asthmatic Children

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Background: Neuronal modulation of inflammation and airway hyperresponsiveness has been well described in asthma and neurotrophins provide the link between inflammation and neuronal dysfunction. In humans, elevated BDNF, NGF and NT-3 levels have been found in bronchoalveolar lavage fluid (BALF) following allergen provocation. Moreover, BDNF levels are significantly higher in untreated asthmatic patients in comparison to those treated with inhaled glucocorticoids and non asthmatic controls. It has also been shown that allergic inflammation increases local all 4 neurotrophins production that are important mediators of eosinophil survival in BALF. The aim of this study was to analyze if levels of neurotrophins in serum of asthmatic pediatric patients are altered in the course of disease (exacerbation and asymptomatic period) and therefore may serve as potential biomarkers for disease activity or symptoms severity.

Methods: In the study we included 98 children diagnosed with asthma. The blood was collected twice: during exacerbation and in the asymptomatic period. The serum levels of 4 neurotrophins (BDNF, NGF, NT-3, NT-4) were analyzed with use of DuoSet ELISA Development Kit (R&D). Statistical analysis was performed with Statistica v. 9.0.

Results: Analysis revealed no significant differences in neurotrophins levels in serum between asthmatic patients during asthma exacerbation and asymptomatic period. However, we found that serum levels of NT-3 and NT4 correlate with disease severity, being significantly lower in mild asthmatics as compared to patients with moderate and severe asthma (P < 0.01).

Conclusions: Our results suggest that neurotrophins levels do not seem to correlate with the clinical symptoms activity in the course of asthma, however 2 of them (NT-3 and NT-4) correlate with disease severity.