Conclusions: *Helicobacter pylori* colonization seems to protect against allergic disorders in comparison with the effect of respiratory tract infections. The hygiene hypothesis may be better explained when this kind of gastrointestinal and respiratory tract infections are subtly differentiated.

**ATOPIC DERMATITIS**

**338 Early Clinical Differential Diagnosis between Infant Atopic Dermatitis and Seborrheic Eczema**

Rubens Marcelo Souza Leite, MD,1 and Adriana Aragao Craveiro Leite, MD2, 1Departamento Medico, Camara dos Deputados, Brasilia, Brazil; 2Allergy, Instituto Saint Louis, Brasilia, Brazil.

**Background:** Clinical differential diagnosis between atopic dermatitis and seborrheic eczema is sometimes difficult. Early differential diagnosis is important, since atopic dermatitis can be more difficult to treat and may be associated with asthma and allergic rhinitis.

**Methods:** In a cohort study, 96 infants with high risk for atopic dermatitis were followed up from the maternal ward until they completed one year of age. The infants were submitted to complete skin examination, monthly, for a 1 year period. A full skin examination was performed and any sign of eczema was registered. Therapy with hydrocortisone 1% cream was prescribed. Eczema onset time, skin distribution, response to therapy and the presence of pruritus were evaluated.

**Results:** 87 (96%) infants fulfilled the study criteria (physical examination at least 10 months). Fifty four (62%) infants had signs of eczema during one year follow up. Atopic dermatitis was diagnosed in 14 (16%) patients and seborrheic eczema in 30 (34.5%) infants, with 10 (11.5%) classified as: both eczemas. Atopic eczema onset was mainly between 2 and 4 months and seborrheic eczema between 1 week and 3 months, with an important coincident period. Facial eczema had similar onset and semiological aspect for both diseases in its beginning. Head eczema was present in 40 (74%) eczema infants, 33 (82.5%) with a posterior diagnosis of seborrheic eczema and 7 (17.5%) with atopic dermatitis. After 3 to 5 months, axillar and groin folds eczema were the main signs of seborrheic dermatitis diagnosis, while face, neck and limbs were the main eczema sites in atopic dermatitis. The 10 infants with dubious eczema just after 6 months could have a more accurate eczema diagnosis. Hanifin et Rajka diagnostic criteria for infants showed to be useful just after 6 months, since some of its criteria are evolutive. All patients improved with hydrocortisone cream, but seborrheic eczema infants had a better response and prognosis, with complete eczema resolution until 8 months. The presence of pruritus could be securely established just after 6 months of age.

**Conclusions:** Continuous follow up is indispensable for Infant atopic dermatitis differential diagnosis with seborrheic eczema. Eczema distribution and therapy response are the best predictors for differential diagnosis in infant eczema.

**339 Sensitization to Contactants in Patients with Atopic Dermatitis**

Fausto Matsumoto,1 Cleide Alessandra Terada,2 Marcia Mallozi, PhD,3 and Direceu Soé, PhD.4 1Allergy and Clinical Immunology: UNIFESP/Federal University of São Paulo, São Paulo, Brazil; 2UNIFESP/São Paulo, Brazil; 3Pediatrics, UNIFESP, São Paulo, Brazil; 4Pediatrics, UNIFESP, São Paulo, Brazil.

**Background:** Atopic dermatitis (AD) is a chronic inflammatory pruritic skin disease with extensive interindividual variation and multiple internal and external factors. In this study, we evaluated whether the atopic dermatitis severity (SCORAD index), gender, age, age onset or the presence of Allergic rhinitis (AR), Allergic conjunctivitis (AC) or Asthma has an influence on contact sensitization to common contactant allergens.

**Methods:** 30 AD patients were evaluated in the Division of Allergy of Federal University of São Paulo. AD was diagnosed according to the Hanifin and Rajka’s criteria and all patients were currently under regular treatment. Questionnaire (age, gender, age at onset, presence of AR, Asthma or AC), clinical examination and skin patch tests were carried out on all patients at the beginning of the study. Patients in regular use of oral CE; topical CE and/or calcineurin inhibitor use or having active AD lesions in the back were excluded from the study. Patch test was applied onto the upper back with 8 mm chambers attached with hypoallergenic tape and removed after 48 hours. The interpretation of the test reactions was performed at 48th and 96th hour.

**Results:** Positive Patch-test reaction occurred in 14/30 (46.6%). Among those with positive patch-test, Nickel was responsible for 42.8% and Thimerosal for 28.5%. All patients finished the study and no adverse reactions occurred. Positive and negative Patch-test groups found no statistically significant difference ($P > 0.05$) when comparing: SCORAD index, sex, age, age of onset and presence of AC, AR or asthma.

**Conclusions:** According to our results, sensitization to common contact allergens in AD patients was more frequent than in normal subjects. Although we did not found an explanation to these findings, indiscriminate exposure to topic products should be avoided so that new sensitization or risk of deteriorating AD occurs. The benefits of avoidance to the contactants considered positive should be evaluated in the follow-up of these patients.

**340 Sensitization to Aeroallergens and Risk of Respiratory Allergy in Atopic Dermatitis Children**

Natalya Migacheva, MD, PhD, and Tatiana Kaganova, MD, PhD. Paediatrics, Samara State Medical University, Samara, Russia.

**Background:** Infants and young children with atopic dermatitis (AD) are at greater risk of developing respiratory allergy later in life with rhinitis, eye symptoms, and sometimes asthma. The aim of our study was to describe the sensitization patterns to inhalants in our young patients with AD and to assess the relation between early sensitization to aeroallergens and the development of respiratory allergy.

**Methods:** 80 children diagnosed of AD, aged from 11 to 34 months, were included (51 male and 29 female). Seventy two of these 80 were followed up to 7 years of age. Except a clinical examination, total IgE level was investigated by ELISA, and analysis of specific IgE antibodies to aeroallergens was performed with MAST CLA Allergen specific IgE Assay. Nonparametric tests were used in comparative analysis.

**Results:** 79% of our AD infants had increased level of total IgE (mean: 387 kU/L). Sensitization to inhalant allergens was determined in 52 atopic dermatitis children (65%). The most relevant results were: 39 patients (48.8%) were sensitized to pets, 36 patients (45.0%) were sensitized to house-dust mites, 25 patients (31.3%) were sensitized to pollen, 17 patients (21.5%) were sensitized to molds. During the follow up, 48% of patients developed asthma and 52% allergic rhinitis. The mean age of respiratory allergy onset was 29.8 ± 3.9 months. At the end of our study the cumulative prevalence of respiratory allergy symptoms was significantly higher in children with inhalant sensitization compared to children without sensitization to aeroallergens (71% vs 18%, $P < 0.001$). The risk of asthma in that group also was significantly higher (68% vs 14%, $P < 0.001$).

**Conclusions:** Early sensitization to aeroallergens in AD children is associated with increased risk of development of respiratory allergic symptoms later in life.

**341 Quality of Life in Pediatric Patients with Atopic Dermatitis**

Xiomara Lopez Campos, MD. Hogar Materno Leonor Pérez, Havana, Cuba.

**Background:** Atopic dermatitis (AD) is a common skin condition. The aim of this study was to evaluate the impact of AD on the quality of life of
children and their families establishing correlations with scores of disease severity.

Methods: It was carried out an observational study of the correlations between clinical indicators of severity and a questionnaire on quality of life: IDQOL. The study also included scoring of eczema severity – ISAAC. One hundred seventeen children with AD, fulfilling established diagnostic criteria, and 396 children with no dermatologic diseases were investigated for the effect of eczema on quality of life. Pearson’s correlation was used for the correlation analysis and the comparison between the groups was carried out using the Mann-Whitney test.

Results: Data analysis demonstrated significant differences between the scores for the 2 groups. The mean score in the eczema group was 9.2 (range 1–19) for IDQOL. The highest scoring questions for IDQOL referred to itching and scratching, mood changes and problems caused by treatment. For the ISAAC, the highest impact domains were treatment-related expenditure and sleep disturbance affecting family members.

Conclusions: AD has a negative impact on the quality of life of pediatric patients and their families. The individuals dealing with AD and their families need more than just the physical treatment of symptoms. Educational and psychological support for patients and their families in addition to medical treatment of AD may improve their long-term physical outcomes.

342 Epidemiology of Atopic Dermatitis in the Allergy Service of a Third Level Medical Center
Luis Rafael Sanchez-Gallardo, MD. Immunonallergology, Iseymy Ecatepec Medical Center, Ecatepec De Morelos, Mexico.

Background: The creation of an Allergy service was required because of the high frequency of allergic diseases among paediatric population in the general consultation of a third level medical centre.

Objective: The purpose of this study is to report the cases of Atopic Dermatiss (AD) in the Allergy service from a Third level medical centre since its creation in July 2005.

Methods: This is a descriptive, retrospective, transversal study from July 2005 to February 2011. Selected medical records of patients, some records supplied by the Dermatology service, applied for diagnostic criteria for an allergy disease. The EAAAP/AAAI/PRACTALL/ 2006 guide was used to make diagnosis of AD. Patients were classified by age and sex and find out how many skin prick test were made in such patients, and how many patients began immunotherapy.

Results: Thirteen thousand seven hundred thirty seven consultations were attended in the Allergy service between the time period mentioned above. Two thousand three hundred thirty seven medical records of patients were selected, 1608 patients applied for a specific diagnosis for an allergy diseases as follows:

- Asthma 411; atopic conjunctivitis 58; atopic dermatitis 180; allergic rhinitis 869; and urticaria 90.869 patients completed criteria for allergic rhinitis.
- From 180 patients with diagnosis of AD, 111 (61.6%) patients were female, 69 (38.4%) patients were male. Ninety six (53.3%) patients were found to be in the range of 0 to 9 years. The majority of atopic dermatitis patients were females in the range of 0 to 14 years, with 82 (45.5%) patients.
- There was an increase of atopic dermatitis cases in females in the range of 30 years compared with males (F 10/ M 3). In 111 patients with DA skin prick test were made, only in 76 (42%) patients were positive and began treatment with immunotherapy.

Conclusions: In this study, AD represents the third cause of allergy disease in frequency among children. AD requires interdisciplinary management because of dermatological and allergological aspects for treatment, including immunotherapy. Education of parents and patients is also an important task in the treatment of AD. The results of this study are helpful to improve specialized medical attention in paediatric patients and adults with AD.

343 Gene-environment Interactions on the Development of Atopic Dermatitis in Preschool Children: Mold is the Main Environmental Factor
Hyung Young Kim, MD, and Soo-Jong Hong, MD, PhD. Department of Pediatrics, Childhood Asthma Atoy Center, Asan Medical Center, College of Medicine, Ulsan University, Seoul, South Korea.

Background: Genetic factor and environmental exposure are recognized risk factors for atopic dermatitis (AD) in children. It is known that fungus is the representative environmental factor of AD. However, the relative and the overall contributions of fungal exposure remain unexplored.

Methods: During July to August 2010 population-based cross-sectional survey, we investigate 986 preschool children from 16 kindergartens of Seoul and Gyeonggi-do province in Korea using a modified International Study of Asthma and Allergies in Childhood (ISAAC) questionnaire. We investigated 5 mold exposure items (dampness stain, dampness damage, visible mold, mold odor, house repair) in this survey. Multivariate regression analysis was applied to determine impact of mold exposure as risk factor for AD.

Results: The prevalence of AD was as follows: lifetime symptoms, 28.0%; symptoms in the past 12 months, 28.7%; lifetime diagnosis by questionnaire, 35.1%; treatment in the past 12 months, 16.6%; current AD (which was defined as lifetime diagnosis by questionnaire together with symptoms in the past 12 months), 21.5%; and diagnosis by doctor’s examination on the spot, 14.6%. A parental history of AD and mold exposure and environmental factors were independent risk factors for AD in preschool children. The coexistence of a parental history of AD and mold exposure together was synergistically related to AD prevalence. When children with a parental history of AD were exposed to mold (ex. mold odor), the risk for AD prevalence increased up to 7 times. (OR 6.956, 95% CI, 2.599-18.615)

Conclusions: This investigation provides a high prevalence of AD and a close relationship with mold. High prevalence of AD was detected by the combined effect parental history of AD and mold exposure at infancy. These findings suggest that early avoidance from mold exposure is important to prevent the development of AD especially in the susceptible children.

344 FcRγ-mediated Immune Responses Modulate the Exacerbation of Clinical Symptoms in Atopic Dermatitis of NC/TND Mice
Kumiko Oida, DVM, Keisuke Oku, DVM, Keitaro Ohmori, DVM, PhD, Akira Matsuda, DVM, PhD, Akane Tanaka, DVM, PhD, and Hiroshi Matsuda, DVM, PhD. Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan.

Background: Although elevated specific IgG and IgE are observed in sera of patients with atopic dermatitis (AD), their involvement in the pathogenesis of AD remains to be determined. In this study, we investigated the contribution of the immunoglobulin in AD by using Fc receptor common y-chain (FcRγ)-deficient NC/Tnd mice.

Methods: NC/Tnd mice spontaneously develop the AD skin lesion when they are raised in air-unregulated conventional circumstances, but not when maintained under air-regulated specific pathogen-free conditions. We established FcRγ - NC/Tnd mice; those mice lacked FcRγ-mediated immune responses initiated by specific IgG and IgE. The clinical skin severity score and scratching behavior were evaluated in FcRγ-deficient mice and wild-type (WT) littermates. To examine histological features and distribution of mast cells, tissue sections of the lesional skin were stained with hematoyxlin-eosin and toluidine blue, respectively. With regard to inflammatory cytokine production, the mRNA expression was detected in the dorsal skin and the axillary lymph node by real-time RT-PCR.