SUNDAY

506 Comparative Performance of the Euroline Allergy and Immunocap Systems in the Measurement of Specific IgEs to Common Foods and Aeroallergens Among Thai Children

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RATIONALE: Allergen specific IgE measurement is one of indispensable diagnostic tools for allergy diagnosis. Over the past decades, ImmunoCAP® (Thermo Fischer) has been a standard specific IgE measuring assay system widely used worldwide including in Thailand. Recently, a panel of multiple specific IgEs determination, the Euroline Allergy® (Euroimmune), has been introduced. However, there is paucity in reports comparing a correlation between these two assay systems.

METHODS: Four hundred fifty-one allergic children from Siriraj Allergy Clinic were recruited. Specific IgEs from their sera were analyzed to aeroallergens consisting of *D. pteronyssinus*, *D. farinae*, American cockroaches, cat dander, Bermuda and Johnson grass, and to common food allergens consisting of cow's milk, egg white and wheat by Euroline Allergy® and ImmunoCAP® concomitantly.

RESULTS: Three hundred twenty-five patients had a diagnosis of food allergy, 219 had atopic dermatitis, 204 had allergic rhinitis and 83 had asthma. The median age of participants was 3.08 years (range, 0.16-15 years). Two hundred eighty-six (63%) were male and 165 (37%) were female. For aeroallergens, Spearman correlation analyses showed strong correlations between the two assays (range of r = 0.731-0.907) with the exception for Johnson grass. Johnson grass showed lowest correlation in patients with asthma and atopic dermatitis (r = 0.684, 0.638 respectively). Among food allergen, wheat showed the best correlation (r = 0.903) followed by egg white (r = 0.892) and cow's milk (r = 0.688).

CONCLUSIONS: A good correlation between the two measurement systems for aeroallergens with exception for Johnson grass whereas for food, wheat showed the best correlation.

507 Individualized Treatment of Allergic Rhinitis According to Nasal Cytology Collected with a New Sampling Method

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RATIONALE: Nasal cytology can be an important tool in the diagnosis and treatment of nasal inflammatory diseases. Treatment of allergic rhinitis (AR) according to nasal cytology has not been fully studied. We plan to examine a reliable method for nasal cytology and explore the individualized treatment of AR according to nasal cytology.

METHODS: Nasal smear with glass stick (NSGS) as a method for nasal cytology was explored. Nasal cytology from 468 AR patients was examined for inflammatory cell quantity (grade 0 – 5) and the percentage of neutrophils and eosinophils. **Results** were subdivided into the following categories: AR(Eos), eosinophil ≥ 50% of the whole inflammatory cells; AR(Neu), eosinophil < 10%; AR(Eos/Neu), 10% ≤ eosinophil < 50%; AR(Low), grade 0/1 inflammatory cell quantity. Nasal cytology-guided treatment was implemented: all AR(Eos) patients (n=22) and half of AR(Neu) patients (AR(Neu1), n=22) were treated with mometasone furoate spray and oral loratadine. Another half of AR(Neu) patients (AR(Neu2), n=22) were treated with oral clarithromycin. Visual analogue scale (VAS), symptoms scores and nasal cytology were evaluated before and after 2 weeks treatment.

RESULTS: NSGS was the most reliable method. Of the AR patients studied, there were 224/468(47.86%) AR(Eos), 67/468(14.32%) AR(Neu), 112/468(23.93%) AR(Eos/Neu) and 65/468 (13.89%) AR(Low). VAS and nasal symptom scores were significantly lower in AR(Eos) and AR(Neu2) group compared to AR(Neu1) group after treatment (P<0.05). The inflammatory cell grade also significantly decreased in AR(Eos) and AR(Neu2).

CONCLUSIONS: NSGS is a reliable method for nasal cytology. Nasal cytology may have an important value in subtyping AR and optimizing the treatment of AR.

508 Dental and Maxillofacial Alterations in Children with Allergic Rhinitis Attended at the University Hospital of Monterrey, Mexico

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RATIONALE: Allergic rhinitis is one of the main causes of mouth breathing and different studies on children have reported an increase on the incidence of dental caries, maxillary alterations, and orofacial morphological alterations. The objective of this study was to determine the prevalence of dental and maxillofacial alterations in children with allergic rhinitis from the Northeast of Mexico.

METHODS: This was an observational, cross sectional, comparative, simple blinded, case-control study. We included 8 to 14 year old children diagnosed with allergic rhinitis (allergic rhinitis group), as well as children without allergic rhinitis in the same age range (control group). Odontological examination on children of both groups was performed by orthodontists of the University Odontology Service. As statistical proof, the Mann-Whitney U test, Chi-squared test or Fisher exact test were used. A multinomial regression analysis was used, as well as risk analysis.

RESULTS: 48 children were included: 28 in the allergic rhinitis group and 20 in the control group. There was no sex difference between the groups (p=0.28). 52% of children were 8 to 10 year old. In comparison with the control group, we observed a greater prevalence of mouth breathing (p=<0.01), maxillary compression (p=0.008), labial incompetence (p=0.002), snoring (p=<0.01), dark circles (p=0.03), facial vertical plane increase (p=0.016), and nasal fold (p=<0.01), in the allergic rhinitis group.

CONCLUSIONS: We found a greater prevalence of dental and maxillofacial alterations in children with allergic rhinitis in comparison to those without allergic rhinitis.