309 Appropriateness of reducing the number of pollen allergens to three
Karuna Kear1, Karen Byth1, and Connie Katelaris1. 1Westmead Hospital, Immunology Department, Westmead, Australia; 2Westmead Hospital, Westmead Millenium Institute, Westmead, Australia.

Background: Skin prick testing (SPT) is an essential tool in the diagnosis of allergic disorders. The optimal number and type of allergens used in different settings remains undefined. We aim to describe SPT in our clinical practice and propose the appropriateness of reducing the number of pollen allergens to three. The aim is to improve cost-effectiveness and reducing time spent on allergen testing, particularly in the community setting.

Methods: Consecutive patients who attended the private rooms of 2 immunologists and the allergy/immunology clinic in a tertiary referral hospital who required skin prick testing were evaluated from June 2006 to November 2006. Statistical analysis was undertaken with the use of Pearson’s Chi-square and Fisher’s Exact test to assess for significance. Multivariate analysis was also performed.

Results: There were a total of 273 skin prick test sets performed. There was no significant difference between the rates of SPT positivity with common pollen allergens between the two clinics. A positive SPT to Perennial Ryegrass (Lolium perenne), Timothy (Phleum pratense) or Bermuda grass (Cynodon dactylon) had a sensitivity of 100% to Bent or Orchard grass (Dactylis glomerate), with sensitivities of 97%, 96.3% and 94.8% to English Plantain (Plantago lanceolata), Bahia grass (Paspalum notatum) and Dock/Sorrel (Rumex sp) respectively. Use of Perennial Ryegrass, Timothy or Bermuda grass also detected tree pollen sensitivity with sensitivities in Birch mix (Betula sp) of 92.6%, Acacia (96.4%), Casuarina (89.1%), Platanus sp (92.3%) and Privet (Ligustrum sp) (88.6%).

Conclusion: The use of 3 common grass pollen allergens in SPTs (Lolium perenne, Phleum pratense and Cynodon dactylon) detected 90% of atopic individuals with sensitivity to many pollen types. This information may be useful in defining the most appropriate allergens to determine pollen hypersensitivity in community settings.

310 Clinical evaluation of a new allergy lateral flow assay for professional and home use
Michael Mahler1, Lorenz Christine2, Ralf Luxassen1, Margrit Fooke3, and Jörg Kleine-Tebbe3. 1Dr. Fooke Laboratorien, Development, Neuss, Germany; 2Allergy and Asthma Center Westend, Allergy unit, Berlin, Germany; 3Dr. Fooke Laboratorien, General manager, Neuss, Germany.

Background: Specific immunoglobulin E (sIgE) is a hallmark in the diagnosis of type I allergic reactions and atopic diseases. A new allergy screening test (Allergy Lateral Flow Assay; ALFA™) for qualitative detection of sIgE in human whole blood, serum or plasma is based on a test device, allowing linkage to a variety of allergens. Objective of our study was the evaluation of ALFA™ for professional and home use.

Methods: Untrained volunteers (n = 96) performed ALFA™ Seasonal Screen (S) (Birch (g3), Bermuda Grass (g2), Rye Grass (g5), Timothy Grass (g6), June Grass (g8), Cultivated Rye (g12), Mugwort (w6) and Alternaria alternata (m6)) and ALFA™ Perennial Screen (P) (D pteronyssinus (d1), D farinae (d2), cat (e1), dog (e2), Aspergillus fumigatus (m3) and Aspergillus niger (m33)) with capillary blood. Each serum was tested for specific IgE to all single allergens contained in both ALFA™ tests by ALLERG-O-LIQ. Furthermore, skin prick tests (SPT, Allergopharma) were performed. Volunteers were defined allergic if patient’s history was concordant with SPT and sIgE in-vitro results. ALFA™ results and patient’s diagnoses were analyzed by kappa agreement, Chi-square test, positive (PPV) and negative predictive value (NPV) and diagnostic efficiency (DE).

Results: ALFA™ results were obtained from 91 (S) and 83 volunteers (P). 33/91 (36.3%) volunteers, were defined as allergic for seasonal and 16/83 (19.3%) for perennial allergens. Of those, 25/33 and 6/16 showed positive test results in ALFA™ S and P. Agreement between the ALFA™ results and doctor’s diagnosis was 94.5% (kappa = 0.75, p<0.0001, χ² = 49.3) for S and 91.6% (kappa = 0.46, p<0.0001, χ² = 17.3) for P. Overall agreement was 93.1% (kappa = 0.67; p<0.0001, χ² = 79.1). Sensitivity, specificity, PPV, NPV and DE were 75.8%, 96.6%, 92.6%, 87.5% and 89.0% (S), 37.5%, 98.5%, 85.74%, 86.8% and 86.7% (P) and 63.3%, 97.6%, 91.2%, 87.1% and 87.9% (combined).

Conclusion: Results, particularly for seasonal allergens, are in good agreement with doctor’s diagnosis. Therefore, ALFA™ offers the opportunity for primary care physicians and patients to perform a screening test for early type-1 allergy diagnosis.

311 Sensitization to five common aero-allergens in children suffering from atopic eczema as examined by atopy patch tests, skin prick-tests and specific IgE
Martin Liska, Petr Panzner, Vladimir Hrasko, and Vaclava Gutova. Faculty Hospital Pilsen, Institute of Immunology and Allergology, Pilsen, Czech Republic.

Background: Although the role of allergy in atopic eczema (AE) is still controversial, some patients with atopic eczema suffer from exacerbation of skin lesions after contact with or inhalation of aeroallergens. From the histological examinations of the skin after contact with aeroallergenes is known that the delayed-type hypersensitivity reactions mediated by allergen-specific T cells can take a part in pathogenesis of atopic eczema. Atopy patch tests (APT) represent a useful tool for detection of such hypersensitivity.

Methods: We examined hypersensitivity to common aero-allergens (birch pollen, grass pollen, cat dander, house-dust mites) using APT, skin prick-tests (SPT) and specific IgE in 27 children suffering from atopic eczema. Results of all methods were then compared.

Results: Delayed-type hypersensitivity was found out (using APT) in 16 patients (59%), immediate type of hypersensitivity was found out (using SPT) in 13 patients (48%), using specific IgE in 15 patients (55%). Only immediate type of hypersensitivity was proved in 5 patients (18%), only delayed-type hypersensitivity in 6 patients (22%). Both types of hypersensitivity occurred concomitantly in 11 patients (41%). In 32 cases the type of hypersensitivity differed in the same allergen. A significant (p<0.0005) positive correlation was found between SPT and specific IgE. Correlation of clinical symptoms of AE and positivity of tests was in 7 patients (26%) in IgE mediated hypersensitivity and in 10 patients (37%) in delayed-type hypersensitivity.

Conclusion: Various aero-allergens can influence substantially the course of atopic eczema not only via specific IgE, but as well by specific T cell-mediated...
reactions. Therefore testing for hypersensitivity to aero-allergens both using SPT and/or specific IgE, and atopy patch tests could be useful.

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Complex diagnosis of IgE mediated allergy by in vivo and in vitro methods
Bogdan Petrunov1, Georgi Nikolov1, Antoaneta Michova1, Tzveti Ivanova1, Julia Radenkova-Saeva1, and Hristo Taskov1. 1National Center of Infectious and Parasitic Diseases, Allergology and Immunology, Sofia, Bulgaria; 2Emergency Hospital “Pirogov”, Toxicology Department, Sofia, Bulgaria.

Background: The aim of the study is to assess the diagnostic potential of two in vitro methods for IgE diagnosis and to compare them with the skin-prick test (SPT) as a gold standard.

Methods: 131 patients with positive case history and SPT to grass pollen, house dust mite, moulds, bee and wasp venom suffering of bronchial asthma or allergic rhinitis /hay fever and 10 clinically healthy controls were studied. The in vitro quantity of serum allergen-specific IgE (UniCap, Pharmacia) and the percentage of allergen-specific basophil’s degranulation (FastImmune, BD) were evaluated. The correlation and the percent of coincidence of the results from the three methods were analysed (Statistica 5.5).

Results: Significant statistical correlation between the results from the three methods in patients sensitized to grass pollen and house dust mite were found. Strong positive correlation (Spearman, p<0.05) between the SPT and the quantity of specific IgE- R=0.67 and R=0.61, between the in vivo test and FastImmune - R=0.66 and R=0.62 and between the both in vitro methods - R=0.67 and R=0.53 were determined. Data from patients, allergic to insect’s venom, showed a high percent of coincidence between the three methods - from 70% to 90%. Respectively a coincidence of 60% between the SPT and the quantity of specific IgE in the group sensitized to moulds was established.

Conclusion: The results from the invitro methods represent positive correlation and coincidence with SPT, especially for the allergens of grass pollen, house dust mite, bee and wasp venom. Their application ensures more precise diagnose of patients and contributes to the complex assessment of IgE mediated allergy.

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Development and optimization of quartz crystal microbalance immunosensor for the detection of total IgE
Rawil Fakhrullin1, Rustem Fassakhov2, Victor Vinter1, Elena Sukmanovskaya2, and Olga Konovalova1. 1Kazan State University, Department of Biochemistry, Kazan, Russian Federation; 2Kazan Research Institute of Epidemiology and Microbiology, Department of Allergology and Immunology, Kazan, Russian Federation.

Background: Allergic disease have a significant impact on clinical practice due to their high prevalence. The total IgE quantification is one of the important steps in the classic atopic disease diagnostics. The most widely used methods for IgE detection are time-consuming and complex. Biosensors are interesting tools offering certain operational advantages over standard photometric methods, notably with respect to rapidity, ease-of-use, cost, simplicity, portability, and ease of mass manufacture.

Methods: QCM work as sensors based on the relationship between frequency change and mass loading on the surface of the crystal according to Sauerebrey equation (Sauerbrey, J Phys, 1959). When antigens react with coated antibodies on the surface, a frequency shift occurs and this change is proportional to the mass loading.

Results: The monoclonal anti-IgE were successful immobilize in Nafion polymeric matrix on silver electrodes of piezoelectric quartz resonator. The optimal conditions for anti-IgE immobilization procedure and for piezoelectric immunoassay have been determined. Only 10 microlitres of serum and 45 minutes reaction time is required to measure total IgE. It was found that biosensor is capable to differentiate blood serums of patients with low, intermediate and high level of IgE.

Conclusion: The quartz crystal microbalance immunosensor offers a number of significant advantages over the currently available in vitro techniques for the detection of total IgE. It is supposed that such biosensor can be used in laboratory practice for IgE determination.

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Systemic reactions to percutaneous and intradermal skin tests
A Bagg, T Chacko, M Glauum, D Ledger, R Fox, and RF Lockey. University of South Florida College of Medicine, Dept. of Medicine, Division of Allergy/Immunology, Tampa, United States.

Background: The purpose of this study is to determine over 12 months, 2/1/06-1/31/07, the rate of SRs to both P and ID ST, the symptoms reported, and the response to immediate treatment with epinephrine IM.

Methods: A retrospective review over a one year period was conducted to evaluate SRs to P and ID ST to 20 to 50 allergens (trees, grasses, weeds, animals, molds, foods, medications, and Hymenoptera) in 1,456 subjects. A standard form was used to record symptoms, signs, and treatment. No vasovagal reactions were included. Nurses as instructed by the attending physicians administered epinephrine 1:1000 i/v, 0.2ml IM as soon as any signs or symptoms of anaphylaxis occurred.

Results: 52 patients (3.5%) had SRs, 43 (83%) female and 9 (17%) male. The average age of the patients with SRs was 40.6 years (range 13–70, median 35.5 years). 17/52 (33%) had asthma. Symptoms reported: pruritic eyes, nose, and/or pharynx (40%), worsening cough (27%), sensation of difficulty swallowing (17%), worsening nasal congestion (15%), rhinorrhea (13%), chest tightness and/or shortness of breath (13%), generalized pruritus (12%), sneezing (12%), urticaria (4%), and wheeze (4%). No severe asthma, shock, hypotension, or late phase responses occurred. Treatment: 52 (100%) patients received epinephrine (average dose, 0.2 cc, 1:1000 IM), 48 (92%) oral prednisone, 9 (17%) oral prednisone to take 6 to 8 hours after reaction, 50 (96%) oral antihistamine (H1), and 6 (12%) nebulized beta agonist.

Conclusion: SRs occurred in 3.5% of patients skin tested and readily responded to early intervention with epinephrine. This early administration of epinephrine by nurses appears to prevent more serious and late phase reactions.
After the exposure, bronchoalveolar lavage fluid (BALF) was collected. BALF concentration of total protein, CC16, IgE, MMP-9, hyaluronic acid (HA), IL-6, TNF-α, MIP-2 and activity of lactate dehydrogenase (LDH) were determined. CC16 as the marker of bronchiolar epithelium was assessed by latex immunoassay. In the lung, histological examinations were done and the activity of glutathione S-transferases (GST) was determined. Additionally total and differential cell number (lymphocytes, neutrophils and macrophages) were measured.

Results: Benzalkonium exposure after challenge induced statistically significant increases of BALF cytokines, LDH and IgE in BALF and serum. CC16 level in BALF was significantly reduced. Significant negative correlation of CC16 concentration in BALF with mediators (IL-6) of inflammatory processes was seen. Huge increase of LDH correlated with the level of total protein, MIP-2 and IgE in serum. Negative relationship was shown to occur between CC16 and LDH. IgE in serum and BALF correlated with MMP-9. In histopathology examination, focal agglomerations of alveolar macrophages were noted as well as proliferation of peribronchial lymphatic tissue.

Conclusion: CC16 play a protective role in allergic inflammation and take part in remodelling effects of low molecular weight sensitizers. CC16 can be used as a diagnostic marker for early detection of impaired respiratory function.

316 Pulmonary irritation after inhalation exposure to benzalkonium chloride in rats
Radoslaw Swiercz1, Tadeusz Halatek1, Wojciech Wasowicz1, Barbara Kur2, Zofia Grzelinska1, and Wanda Majcherek1. 1Nofer Institute of Occupational Medicine, Department of Toxicology and Carcinogenesis, Lodz, Poland; 2Nofer Institute of Occupational Medicine, Department of Immunotoxicology, Lodz, Poland.

Background: Benzalkonium chloride (BAC) is a quaternary ammonium compound in which the alkyl groups have a chain length from C8 to C18. BAC exerts toxic effects on microorganisms. This property has been utilized in the cosmetic industry and medicine, where it is used as an effective germicide and preservative agent. Various BAC-containing preparations used by people may produce a number of adverse effects on the human body. Bearing in mind that BAC is widely used in different branches of the national economy, its toxic effect may constitute a major health problem.

Materials and Methods: Female Wistar rats; IMP: WIST of body weight 165–185 g were exposed to BAC aerosol at the target concentration of 30 mg/m3 in the dynamic inhalation chamber for 6 h and 3 days (6 h/ day). After the exposure and 18 h after termination of exposure to BAC aerosol, bronchoalveolar lavage fluid (BALF) was collected from each animal and BALF concentrations of total protein, Clara cell protein, matrix metalloproteinase-9 (MMP-9) hyaluronic acid (HA), immunoglobulin E (IgE) and cytokines (TNF-α, IL-6 and MIP-20) and the activity of lactate dehydrogenase (LDH) and GSH-S-transferase (GST) were determined.

Results: All the rats survived inhalation exposure to 30 mg/m3 BAC. A significant reduction of body weight was noted in the animals exposed repeatedly by inhalation to BAC. Lung weight, total protein, HA level and LDH activity in BALF were higher in rats after single and repeated exposure to BAC, compared to control. Decreased concentrations of CC16 in BALF of rats were observed after the single and repeated inhalation exposure. A significantly higher level of IL-6 and IgE were noted in the BALF from the animals exposed to the single and repeated dose. Concentrations of MMP-9, TNF-α, and MIP-2 in BALF of rats exposed to BAC were similar to those found in the control animals.

Conclusion: BAC showed a strong inflammatory and irritating activity in the lungs of the rats already after 6 hours of inhalation exposure. BAC stimulates the dynamic patterns of IL-6 and IgE production and infiltration of protein from blood circulation system to BALF. Continued exposure resulted in changes involving cellular destruction, statistically increase of LDH activity and a continuous reduction of CC16 concentration in BALF.

317 Allergic bronchopulmonary aspergillosis in an asthma clinic using essential minimal criteria
Soo-Keol Lee1, Doo-Kyung Yang1, Choon-Hee Son1, Ki-Nam Kim2, and Ki-Nam Lee2. 1Dong-A University, Internal Medicine, Busan, Republic of Korea; 2Dong-A University, Diagnostic Radiology, Busan, Republic of Korea.

Objective: Allergic bronchopulmonary aspergillosis (ABPA) occurs in cases of atopic asthma and may result in important lung disease. Early diagnosis is essential as this disease is responsive to corticosteroids. However, there is still no consensus about the diagnostic criteria, because patients in different stages of ABPA may not fulfill the criteria. In this study, we evaluate the prevalence of ABPA or ABPA-like disease in an asthma clinic using essential minimal diagnostic criteria.

Methods: A prospective evaluation of patients with bronchial asthma for ABPA from July 2006 onward. ABPA was diagnosed using essential minimal criteria: asthma, skin prick testing (SPT) positivity to Aspergillus fumigatus (Af), elevated serum total IgE (CAP), elevated serum Af-specific IgE (CAP), and central bronchiectasis on CT scans.

Results: Ninety consecutive patients with bronchial asthma were enrolled. Forty-four of 90 patients were atopic (49.0%), 7 of 44 (18.0%) were positive to SPT to Af. Five of 44 patients (11.0%) showed only elevated serum Af-specific IgE without positive response to Af on SPT. A secure diagnosis of ABPA, satisfying all essential minimal criteria, was evident in 4 of 12 patients (33.3%).

Conclusion: There is high prevalence of ABPA in asthmatic patients presenting our hospital. Further evaluations are required to differentiate ABPA from asthma patients sensitizing to Af without ABPA. The role of serum Af-specific IgE as a screening tool in diagnosis of ABPA should be redefined.

318 Clinical presentation in 12 patients with allergic bronchopulmonary aspergillosis
Abdelmonem Sharara, Manaf Hijazi, Rhymeh El-Khushman, Ijefer Momany, and Mohammed Enjada. King Hussein Medical Center, Department of Chest Disease, Amman, Jordan.

Purpose: Allergic bronchopulmonary aspergillosis (ABPA) is an immunologically mediated lung disease characterised by a Complex hypersensitivity reaction in patients with asthma which occurs when bronchi become colonized...
by Aspergillus. Repeated episodes of bronchial obstruction, inflammation, and mucoid impaction can lead to bronchiectasis, fibrosis, and chronic lung disease. Our aim of the study is to increase awareness of this disease.

Methods: We described a study of 12 cases with Allergic bronchopulmonary aspergillosis. Twelve patients (6 men and 6 women) were diagnosed in chest department at King Hussien Hospital between 1993–2003. The main criteria for the diagnosis were a history of asthma, immediate skin test reactivity to Aspergillus antigens. Serum total IgE concentration greater than 1000 ng/mL, peripheral blood eosinophilia more than 500/mm³, Lung infiltrates and proximal bronchiectasis.

Results: Demographic data for 12 patients with Allergic bronchopulmonary aspergillosis.

Conclusion: ABPA is a rare disease, diagnosis is depending upon certain criteria.

Clinical Implication: We have to think about the diagnosis of ABPA in any patient with a history of asthma, lung infiltrates and peripheral blood eosinophilia.

319 The significance of the diagnostic profile of the ophthalmic allergies in excluding mimicking clinical conditions (MC)* which may pose therapeutic difficulties

M. Ishaq, I Khan Sameera, and Munir Imran Khan. Al-Junaied Hopsital, Allergy/Pulmonology, Nowshera, Pakistan.

Introduction: Patients with (AC) with/without concomitant allergies in some cases is a therapeutic dilemma.

Methods: In the series of patients, ages 10–35 years usually with intermittently red eyes (shot redness), intractable itching of eyes, tearing (stringy discharge) with/without seasonal association.

On laboratory investigations, is found raised tears & blood eosinophils counts, total eosinophils counts. Total serum IgE measurement in most of the cases had been higher than 200 to 300 kU/L supported by, the rise in titers of allergen-specific IgE, by the radioallergosorbent test (RAST) method, Skin prick test with a mixture of allergenic extracts had a conclusive evidence of an allergy cause for the red eye.

On ophthalmoscope examination, found pinkish papillae, with a central vessel & characteristics, serous, watery conjunctival secretion.

Conjunctival scrapings, and tear cytology performed after topical ocular allergen challenge to sensitized subjects have shown significant increases in neutrophils and eosinophils, and their presence evidenced a positive diagnostic criterion.

Results: Confirmation of a suspected allergic sensitization by skin prick test for the diagnosis of immediate hyper sensitivity is the most sensitive, fastest and cheapest method to confirm an allergic sensitization. However, it carries a small but a significant risk of systemic anaphylaxis.

Conclusion: Challenge tests are the only way to relate the specific allergen to the triggering of ocular symptoms but with a variable degree of systemic anaphylaxis.

320 Electrodiagnostic study of phrenic nerve function in patients with systemic lupus erythematosus

Nancy Mahmoud Abdehaly1, Mahmoud El Prince1, S.Maher Labib2, and Mohammed Hefny3. 1Faculty of medicine, Suez Canal University, Chest Department, Ismailia, Egypt; 2Faculty of medicine, Suez Canal University, Medicine Department, Ismailia, Egypt; 3Faculty of medicine, Suez Canal University, Physical Medicine Department, Ismailia, Egypt.

Objective: 21 patients with SLE were screened for the presence of Phrenic nerve neuropathy and to determine whether neurophysiologic findings correlate to clinical respiratory signs, spirometric abnormalities or serological examination in patients with Systemic lupus erythematosus.

Methods: A total of 21 patients(18 female & 3 male)with systemic lupus erythematosus (SLE) (age range, 16–36 yr) were included and studied by physical pulmonary examination, chest radiography, respiratory function tests, as well as serological examination and bilateral transcutaneous phrenic nerve conduction studies.

Results: 14(66.6%) patient complained of dyspnea, only one patient showed paradoxical abdominal movement. Pulmonary function tests showed proportion- reduction of the forced vital capacity (FVC) and forced expiratory volume in 1 second (FEV1), suggesting a restrictive process which was severe in 23% of patients. All patients were on corticosteroids, only 10 (47.6%) patients were on immunosuppressive medication to include methotrexate or cyclophosphamide. Phrenic nerve evaluation using transcutaneous stimulation studies showed delayed latencies of RT, LT & both phrenic nerve in 17 (81%), 19(90%) and 17 (81%) patients respectively confirming a demyelinating neuropathy. Also Phrenic nerve stimulation evoked a low-amplitude response from the right, left and both in 17 (81%), 15 (71%) and 14 (66.6%) of patients respectively confirming axonal neuropathy. There was no significant correlation between electrical phrenic nerve stimulation and serum immune markers, except there was decreased action potential amplitude in SLE group with positive results for Anti DNA as 14 (66.6%) of patients had Anti DNA +ve, all showed reduced amplitude of rt phrenic nerve & 13(93%) of them showed reduced amplitude of lt phrenic nerve. Fourteen (66.6%) patients presented with dyspnea and all of them showed abnormal phrenic nerve conduction studies. While 11 patients showed abnormal CXR with small but clear lung fields, no evidence of major parenchymal lung or pleural disease was found. There was no significant correlation between electrical phrenic nerve stimulation and CXR abnormalities.

Conclusion: Diaphragmatic weakness in patients with SLE is both common and is very likely to be caused by a phrenic neuropathy with evidence of bilateral involvement.
was evident from within the first three results pages of the conducted Google search. Since Google does not necessarily include diagnoses within the search results page itself, observers were permitted to select the diagnosis that best fitted the case record from information after opening each direct results link only. The independent investigator then compared the diagnoses obtained by each observer with the definitive diagnoses as published in the Journals. The main outcome measure of this study was the percentage of correctly obtained diagnoses achieved by each observer.

Results: Observer A identified the definitive diagnosis in 30/45 cases (66%, 95%CI 52–79), Observer B in 39/45 (86%, 95%CI 76–95) and Observer C in 29/45 (64%, 95%CI 50–77). Most diagnostic inaccuracies for both observers were those related to primary immunodeficiency or pediatric cases.

Conclusion: This Google-based search was useful to achieve an appropriate diagnosis in CIA cases. Computer and Internet-based search skills could influence the results.

PHARMACOTHERAPY

322 The anti-allergic properties of potassium humate
Johanna Meeding, Gandy Justin, Constance Medlen, and Jacques Snyman. University of Pretoria, Pharmacology, Pretoria, South Africa.

Background: Although the anti-inflammatory properties of humate derived from peat, sapropoles and mumie have been described, no clinical studies has been done on the anti-inflammatory effects of humate derived from coal. Leonardite humate compared favourably with prednisolone in suppressing contact hypersensitivity in a rat model. According to a report by the European Agency for the Evaluation of Medicinal Products on toxicity studies (Feb 1999), humic acids extracted from brown coal has no toxic effects on rats in a chronic study at oral dosages as high as 1g/kg BW, whereas the LD50 in rats, after oral administration of humic acids, has been reported to be greater than 11g/kg BW. This report has recently been confirmed by a separate study.

The objective of this study was to establish the safety and therapeutic efficacy of oral potassium humate in reducing the signs and symptoms of hay fever in atopic patients during the grass pollen season.

Methods: In this parallel double-blind placebo controlled phase II study potassium humate was randomly assigned, at a dosage of 1.8g in divided doses/day, to atopic patients (n = 40) presenting with acute symptoms of hay fever. The blood and nasal samples were used to determine the safety and the effects of potassium humate on basophil activation, cytokine levels and eosinophil migration. A skin prick test was used to determine its anti-allergic effects. An in vitro neutrophil adhesion test was used to determine the effects of the product on the adhesion of human neutrophils to ICAM-1 expressing baby hamster kidney cells.

Results: A significant decrease in the skin prick test results (presented elsewhere) and eosinophil counts was observed. No significant differences were observed with regard to neutrophil adhesion nor were there any differences observed with regard to the stimulation of basophils. However decreases were observed in the expression of IL-4, IL-5, IL-8 and IL-1α after treatment, although not reaching statistical significance. The product had no effect on neutrophil adhesion to ICAM-1.

Conclusion: This study confirmed, without doubt, that this product possesses anti-allergic properties as well as anti-inflammatory properties possibly due to a decreased recruitment of eosinopils to the site of inflammation.

324 Comparative efficacy of levocetirizine, desloratadine, clemastine, kvifendine and sekvifenadine on histamine prick test induced weal reaction, blood perfusion evaluated by laser Doppler flowmetry. Randomized, double-blind, placebo-controlled, crossover design study

Maria Bukovskis1, Madara Tirzite2, Normunds Jurka3, Gunta Strazda4, and Peteris Tretjakovs1. 1Pauls Stradins Clinical University Hospital, Department of Pulmonology and Allergology, Riga, Latvia; 2University of Latvia, Faculty of Medicine, Riga, Latvia; 3University of Latvia, Institute of Experimental and Clinical Medicine, Riga, Latvia; 4University of Latvia, Department of Pathology, Riga, Latvia.

Background: Evaluation of weal reaction and laser Doppler flowmetry are valuable methods for evaluation of efficacy of different pharmacological agents. The aim of our study was to compare the influence of different H1-antihistamines on histamine induced weal reaction, increase of skin blood perfusion and sedation.

Methods: Histamine prick test induced weal area in mm2, percentage of blood perfusion change and area under curve during peak perfusion period (AUCmax) was measured with PeriFlux System 4000 (Perimed AB, Sweden) 2 hours after intake of 5 mg levocetirizine, 5 mg desloratadine, 1 mg clemastine, 50 mg kvifendine, 50 mg sekvifenadine and placebo. Sedative effect was measured in mm by visual analogue scale (VAS).

Results: Results were expressed as mean ± 95%CI. Mean weal reaction area was 6.9 (+3.9;+10.7); 17.5 (+12.6;+23.1); 20.2 (+14.9;+26.2); 18.1 (+13.1;+23.9); 17.8 (+12.8;+23.5) and 29.0 (+22.6;+36.1) mm2 respectively. Statistically significant difference was observed between active treatment and placebo (p<0.05), and levocetirizine and other H1-antihistamines (p<0.001). Increase of blood perfusion was 393.1% (+221.3;+613.8); 626.2% (+403.0;+898.3); 756.5% (+508.8;+1053.2); 741.0% (+496.2;+1339.1); 1001.5% (+712.8;+1339.1) and 1033.2% (+739.6;+1375.8) respectively. Significant decrease of augmentation of blood perfusion was observed after pre-treatment with levocetirizine and desloratadine vs. placebo (p<0.05) and levocetirizine vs. kvifendine, sekvifenadine and clemastine (p<0.05). AUCmax was 1298.7 (+781.2;+1947.0); 2197.3 (+1504.5;+3020.9); 2454.3 (+1718.3;+3321.0); 2633.2 (+1868.6;+3528.6); 2551.7 (+1800.6;+3434.2) and 3166.2 (+2321.4;+4141.7) mm2. AUCmax was significantly lower after pre-treatment with levocetirizine vs. placebo and other antihistamines (p<0.05). Sedative effect was 24.5 (+17.9;+32.1); 21.1
Cetirizine is an antihistaminic drug of the second generation. Besides its anti-histaminic activity various actions have been reported in this anti-histaminic. In epidermal keratinocytes, cetirizine inhibits the expression of co-stimulatory molecule ICAM-1 and the MHC class II molecule HLA-DR. Moreover, it exerts anti-inflammation actions by suppressing the production of cytokines and chemokines in various immunocompetent cells. Levocetirizine (L-cetirizine) is the optical isomer of cetirizine and widely used for the treatment of allergic disorders in European countries. In this study, we investigated whether there are differences between cetirizine and levocetirizine in the cytokine and chemokine production by normal human epidermal keratinocytes (NHEK). While NHEK were stimulated with interferon-γ (IFN-γ) and tumor necrosis factor-α (TNF-α) cetirizine or levocetirizine was added to the experimental cultures. Three day-culture supernatants were measured for the concentrations of IL-1α, IL-8, RANTES, Mig, I-TAC and MDC. The IFN-γ/TNF-α-augmented levels of IL-1α, IL-8 and I-TACK were significantly suppressed by the addition of either cetirizine or levocetirizine to the culture in dose-dependent manners (10⁻³ – 10⁻⁷ M). RANTES, Mig or MDC was not suppressed by cetirizine. To examine the effects of these two reagents on the expression of CDS4 (ICAM-1) molecules, NHEK were incubated with IFN-γ with or without cetirizine or levocetirizine for 48 hrs. Cetirizine and levocetirizine at 10⁻³ M downmodulated the expression of CDS4 molecules at similar levels to each other. This study demonstrates that cetirizine and levocetirizine have comparable effects on the immunological function of keratinocytes. It is noted that levocetirizine has slightly but significantly stronger effects than cetirizine in the production of RANTES and Mig.
Nasal congestion
Ocular pruritus
Rhinorrhea

Conclusion: Oxatomide (OXM), which is a significant candidate for one of the therapeutic modalities against children with food allergy-induced atopic dermatitis, and based on the clinical study, was also found to be effective prophylaxis for development of childhood asthma.

328 Oxatomide-treated children with atopic dermatitis complicated by food allergy and prevention of asthma development
Norifumi Ogawa, Toshiaki Saeki, Kawano Yutaka, and Takeshi Noma.
Kiasato University School of Medicine, Pediatric Department, Sagamihara, Kanagawa, Japan.

Background: Recent epidemiology suggests the increasing prevalence of allergic diseases in the industrialized countries including Japan, which necessitates the analysis of the mechanisms of allergic disease and development of the effective treatment. Oxatomide (OXM), an antihistaminic drug, has been shown to be clinically effective for the treatment of hypersensitivity and childhood asthma. Its mode of action has been elucidated to increase IFN-γ activity as well as anti-histaminic reaction.

Objective and Methods: Peripheral blood mononuclear cells were obtained from 41 patients with atopic dermatitis allergic to hen-egg ranging from 2 months to 2 years 10 months in age. The patients had recurrent eczema, pruritus and positive skin reactions to egg white and/or cow’s milk. Patients also had positive responses to the oral provocation test to raw hen egg and/or cow’s milk. Diagnostic criteria for atopic dermatitis was based on the criteria of Hanifin and Rajk. To clarify the mode of action whereby OXM ameliorates inflammation, lichenification, cracking) was improved from 10 to 2.7 (mean) during the course of 8-16 weeks’ treatment with 2mg/kg of OXM in addition to elimination diets, treatment of skin care (shower, Isodine[R], non-steroid ointment), administration of hydroxyzone and/or oral sodium cromoglicate. In our study we tried compare the effectiveness of Fluticasone spray with intramuscular Dexamethasone.

Materials and Methods: In this clinical trial, 107 children with atopic dermatitis allergic to hen-egg were assigned into two groups. The study group was treated by Fluticasone Propionate and Dexamethasone, and the control group was treated by Fluticasone Propionate. Croup scoring was performed at the 6th and 12th hours from initial administration according to Westley croup score.

Results: Improvement was observed in 83% of the study group and 66% of the control group, 6 hours after initiation of treatment. In both groups 10% of the patients didn’t respond to treatment (p = 0.03). 12 hours after treatment the study group response was 85% and the control group response was 90% (p = 0.4).

Conclusion: We found that Fluticasone Propionate and Dexamethasone have similar efficacy in treatment of respiratory distress, considering the simple method of using Fluticasone spray, it can be suggested as a good treatment for croup.

Key words: Croup, Fluticasone Propionate, Dexamethasone, Westley Croup Score.
The pharmacokinetic and safety profiles of desloratadine in healthy Korean volunteers

In-Jin Jang, Min-Gul Kim, Tae-Eun Kim, and Young-ju Chung.

Methods: This randomized, open-label, single dose crossover trial studied the pharmacokinetics of DL 5mg administered as a 5mg tablet or 10 ml of 0.5 mg/ml syrup in 24 healthy adult male Chinese subjects. After providing written informed consent and undergoing screening, subjects were admitted to a clinic for baseline assessments. Subjects were randomized to receive one of the two DL formulations in a fasting state. Blood tests for pharmacokinetics were taken over 5 days (subjects remained in the clinic for the first 24 hours), and after a 14 day washout period the subjects were crossed over to the other DL formulation and underwent identical pharmacokinetic analyses. The main pharmacokinetic variables for the two formulations were the log-transformed AUC(I) and the Cmax for DL and 3-OH-DL. Biochemical and hematological tests, ECG data and vital signs were also assessed during the study and adverse event (AE) reports were collected.

Results: DL was safe and well tolerated when administered in the tablet or syrup formulations; no AEs were reported. The Tmax, T1/2, Cmax, and AUC(I) values for DL and 3-OH-DL were similar for both formulations. There were no statistically significant differences between the tablet and syrup DL formulations on the basis of log-transformed Cmax and AUC(I) values for DL and 3-OH-DL (P=0.05). The 90% CIs of AUC and Cmax were 91.61–103.97% and 86.04–99.92% respectively for DL, and 94.22–101.71% and 88.01–101.35% respectively for 3-OH-DL. The relative bioavailability of the DL syrup was 99.4% for DL and 98.79% for 3-OH-DL, which met the criteria for bioequivalence of the two formulations.

Conclusion: Both syrup and tablet formulations of DL 5mg were safe and well tolerated. When administered as a syrup formulation DL was bioequivalent to the tablet form of DL in healthy Chinese subjects.

332 The pharmacokinetic and safety profiles of desloratadine in healthy korean volunteers

In-Jin Jang, Kyung-Sang Yu, Jung-Ryul Kim, Kyoung Soo Lim, Jaewoo Kim, Bo-Hyung Kim, Min-Gul Kim, Tae-Eun Kim, and Young-ju Chung. Seoul National University College of Medicine, Seoul National University Hospital, Department of Pharmacology, Seoul, Republic of Korea.

Background: Desloratadine (DL) is a non-sedating, selective and potent H1-receptor antagonist that is effective and well tolerated in the treatment of subjects with allergic rhinitis and chronic idiopathic urticaria. The pharmacokinetics (PK) of DL have not been studied in a Korean population, to date.

Methods: This was a double-blind, dose escalation study of the PK and safety of DL 5mg administered as a 5mg tablet or 10 ml of 0.5 mg/ml syrup in 24 healthy adult male Chinese subjects. After providing written informed consent and undergoing screening, subjects were admitted to a clinic for baseline assessments. Subjects were randomized to receive one of the two DL formulations in a fasting state. Blood tests for pharmacokinetics were taken over 5 days (subjects remained in the clinic for the first 24 hours), and after a 14 day washout period the subjects were crossed over to the other DL formulation and underwent identical pharmacokinetic analyses. The main pharmacokinetic variables for the two formulations were the log-transformed AUC(I) and the Cmax for DL and 3-OH-DL. Biochemical and hematological tests, ECG data and vital signs were also assessed during the study and adverse event (AE) reports were collected.

Results: DL was safe and well tolerated when administered in the tablet or syrup formulations; no AEs were reported. The Tmax, T1/2, Cmax, and AUC(I) values for DL and 3-OH-DL were similar for both formulations. There were no statistically significant differences between the tablet and syrup DL formulations on the basis of log-transformed Cmax and AUC(I) values for DL and 3-OH-DL (P=0.05). The 90% CIs of AUC and Cmax were 91.61–103.97% and 86.04–99.92% respectively for DL, and 94.22–101.71% and 88.01–101.35% respectively for 3-OH-DL. The relative bioavailability of the DL syrup was 99.4% for DL and 98.79% for 3-OH-DL, which met the criteria for bioequivalence of the two formulations.

Conclusion: Both syrup and tablet formulations of DL 5mg were safe and well tolerated. When administered as a syrup formulation DL was bioequivalent to the tablet form of DL in healthy Chinese subjects.

333 Cardiac safety evaluation of loratadine in the treatment of allergic rhinitis in elderly patients

Lei Cheng1, and Ying Liu2. 1Nanjing Medical University, The First Affiliated Hospital, E.N.T. Department, Nanjing, China; 2Jiangsu Provincial Geriatrics Hospital and Research Institute, E.N.T. Department, Nanjing, China.

Background: In elderly patients with allergic rhinitis, the second-generation H1-antihistamines have not been adequately studies, although they are widely used and assumed to be safe.

Objective: To evaluate cardiac safety of loratadine in the treatment of allergic rhinitis in elderly patients.

Methods: A total of 40 patients with perennial allergic rhinitis were enrolled in the study. There were 25 males and 15 females, aged 50 to 88 years (mean, 64.4-years-old). 17 cases (42.5%) had a history of cardiovascular diseases and/or presented abnormal ECG parameters, but had no prolonged QT-interval. The subjects received loratadine 10mg once-daily for 30 days. A series of baseline ECG recordings was obtained before treatment. ECG effects of the treatments were then compared with the baseline ECGs.

Results: There were no changes in sinus rhythm in all patients after 30 days treatment by loratadine. No statistically significant difference was found between the heart rates, PR durations, and QRS intervals at baseline and endpoint ECGs (P >0.05), with no significant prolongation of the QT as well as QTc corrected for heart rate using Bazett formula (P>0.05).

Conclusion: The results suggest no cardiotoxicity of loratadine, at the usual recommended dose, in long-term treatment of allergic rhinitis in the elderly.

334 Propranolol cytotoxicity on human leukemic MOLT-4 cell line

Fatemeh Hajighasemi1, and Zahra Pourpak2. 1Faculty of Medicine, Shahed University, Department of Immunology, Tehran, Islamic Republic of Iran; 2Tehran University of Medical Sciences, Immunology Asthma and Allergy Research Institute, Tehran, Islamic Republic of Iran.

Background: Propranolol, a beta-adrenergic blocker has been used for treatment of a large number of cardiovascular diseases. This drug is also an inhibitor of phosphatidic acid (PA) phospholipidase and phosphatidic acid biosynthesis. Phosphatidic acid is a growth factor for tumor cells. In addition, the inhibitory effect of Propranolol on the development of a tobacco-induced pulmonary adenocarcinoma and also its cytotoxicity on rat and human lung macrophages and human lung tumor cell line has been reported. The widespread and long-term use of propranolol in lots of heart diseases as well as its cytotoxicity against some tumor cells, prompted us to investigate its cytotoxic effect on a human T leukemic cell line (MOLT-4).

Methods: The MOLT-4 cells were cultured in complete RPMI medium and then incubated with different concentrations of Propranolol (0.0004 – 0.4 mM) for 10 and 20 hours. The cytotoxicity was then assessed by 3-[4,5-dimethyl thiazol-2,5-diphenyltetrazoliumbromide (MTT) reduction and also trypan blue dye exclusion methods.

Results: Propranolol induced a significant dose dependent cytotoxic effect on human MOLT-4 cell line in less than 10 hours compared to untreated control cells.
Conclusion: The results showed that human T lymphocytic cell line was dose dependently sensitive to Propranolol. Further studies investigating the in vivo effect of Propranolol on leukemic patients and also other leukemic cells are warranted.

INFECTION & IMMUNITY

335 Human coronavirus infections in Hong Kong children: epidemiology, disease spectrum and relationship with childhood wheezing illnesses

ManYin To1, Ting Fan Leung1, Paul K. S. Chan2, Margaret Ip2, Edmund Cheuk2, Wai Yip Lam2, Chung Yi Li1, Julian W. T. Tang2, and Pak Cheung Ng1. 1The Chinese University of Hong Kong, Department of Paediatrics, Hong Kong, Hong Kong; 2The Chinese University of Hong Kong, Department of Microbiology, Hong Kong, Hong Kong.

Background: Human coronaviruses (HCoVs) are enveloped viruses with a large plus-strand RNA genome. Five serologically distinct groups of HCoVs have been described - HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU1 and SARS-CoV. The clinical disease spectrum by HCoVs in our population is not clearly defined. Preliminary studies suggested that HCoVs might be related to childhood wheezing. This prospective study investigated the epidemiology and clinical features of HCoV infections in Hong Kong children.

Methods: Nasopharyngeal aspirate (NPA) samples were taken from children who were hospitalised in our university teaching hospital between April 2005 and March 2006. The clinical features, diagnoses and laboratory investigations in these subjects were prospectively collected, and laboratory staff blinded to these details performed low-stringent reverse transcription-polymerase chain reaction (RT-PCR) assays using 12 pairs of primers that detect constant regions of HCoVs (i.e. pan-coronavirus).

Results: 1139 subjects (57% males) were recruited, with mean (SD) age being 5.1 (3.6) years. The main discharge diagnoses were pneumonia (n=239), upper respiratory infection (URI; n=227), asthma (n=191), seizure (n=107), and S106 (5.6% illness as defined by temperature (F<sup>°</sup>2.4%; P=0.341). HCoV cases were more likely to suffer from seizure (9% vs. 2.1%, P=0.040). Complete blood count and C-reactive protein (CRP) levels were higher in HCoV positive cases (P=0.15).

Conclusion: HCoVs are uncommon yet important pathogens causing seizure disorders in local hospitalised children. On the other hand, HCoV infections are not associated with wheezing illnesses in Hong Kong children.

336 Are there predominant strains of Staphylococcus aureus in atopic dermatitis patients? : Genotypic characterization of staphylococcus aureus isolated in adolescent and adult patients with atopic dermatitis

Kyung Duck Park1, Jae Young Park1, Byung-Soo Kim1, Woen Ju Lee1, Seok-Jong Lee2, Jung Min Kim2, Do Won Kim1, and Hong Dae Jung1. 1Kyungpook National University School of Medicine, Department of Dermatology, Daegu, Republic of Korea; 2Kyungpook National University School of Medicine, Department of Microbiology, Daegu, Republic of Korea.

Background: The colonization of Staphylococcus aureus is one of the most important aggravating factors of atopic dermatitis. Until now, the importance of S. aureus in atopic dermatitis and a positive correlation between colonization with S. aureus and clinical severity / skin barrier function has been demonstrated. Qualitative analysis, especially a genotypic characterization of S. aureus isolated from atopic patients, however, has rarely been reported.

Methods: This study aimed to find the genotypic characterization of S. aureus from atopic dermatitis patients. We performed newly-developed typing methods - spa typing, multi-locus sequence typing (MLST) and toxin gene assay, by a multiplex polymerase chain reaction, with 165 isolates of Staphylococcus aureus.

Results and Conclusion: The results showed that there was no predominant clone of S. aureus with a high heterogeneity of spa typing and MLST. A toxin gene assay showed very interesting results that all S. aureus strains had at least two kinds of toxin genes; sea and tst-1 being the most prevalent.
Methods: Seventy-three patients (aged from 8 months to 6 yrs) admitted with acute respiratory infection with wheezing were enrolled. All children had experienced more than 3 episodes of wheezing before admission. Zinc levels were measured in serum samples collected on admission using inductively coupled plasma-optical emission spectrometry (ICP-OES) and the value of < 64 mg/dl was defined as zinc deficiency. Clinical and laboratory findings in the children with zinc deficiency were examined and compared with in the children who had normal values. Zinc levels in sixteen age-matched controls were also studied.

Results: Median value of zinc levels in the patients was significantly lower than in controls (P<0.001). 36 patients were found to have zinc deficiency (49.3%), which was significantly higher than in controls (12.5%). Zinc deficiency was observed in 56% of the patients = 2 yrs of age and 40.6% of <2 yrs of age. There was no significant difference in total WBC count, lymphocyte count and atopic status in relation to zinc status in the patients. CD4/CD8 ratio was significantly lower in the patients with zinc deficiency (P<0.05), however, other immune profiles were within normal limit.

Conclusion: This study showed that median value of zinc level was significantly lower and zinc deficiency was more frequently found in the patients with recurrent early wheeze compared with in age-matched controls. Our results suggest that zinc deficiency may be associated with frequent respiratory viral infections, a likely trigger for recurrent early wheeze in the young children.

Aim: Mycobacterium avium intracellulare (MAV) is the atypical Mycobacterium most commonly associated with human disease. The pulmonary disease is the most frequently clinical presentation and appears with higher prevalence in immunosuppressed patients.

Materials and Methods: We present the case of a 46 years old woman, nurse as profession, with cough and dysnea for a period of nine years. No wheezing, fever nor constitutional syndrome were referred. Skin prick tests with common aero-allergens and latex, spirometry and bronchodilatation test were performed. Total IgE, complement study, proteins electrophoresis, immunoglobulins determination, cellular immunity study, HIV, X-ray study and thoracic CT-scan, mantoux, zielh and sputum culture were done.

Results: Positive skin prick test for pollens and dog and cat epithelia were obtained. The patient had normal spirometry values and a negative bronchodilatation test. All the laboratory tests were in normal levels. Determination of total IgE was 483 KU/l. The chest X-ray showed cavities in both lungs with interstitial infiltrates. The CT-scan confirmed these findings. Mantoux, Ziehl with 50 BAAR/field and MAV culture were positive. Mycobacterium tuberculosis was excluded by CRP. Cellular immunity, complement, proteins electrophoresis and immunoglobulins determination were in normal range. HIV test was negative.

Conclusion: We present the case of a patient with rhinoconjuntivitis due to pollens hypersensitivity and persistent cough with pulmonary infection for Mycobacterium Avium associated. The Mycobacterium Avium was not described as human pathogen until 1950, when many series described pulmonary infections for MAV. This mycobacterium mainly attacks immunosuppressed patients. This infection is less frequent in patients with normal immunity. Our patient did not have immunosuppression nor risk factors. At the present time she is being treated with antibiotics (ethambutol and claritromycin) and she is in good general condition with no need of hospitalisations.