

THE SKY'S THE LIMIT CONGRESS

ABSTRACTS

ALLERGY SOCIETY OF SOUTH AFRICA PRESENTATIONS, SUN CITY, 29 MAY – 2 JUNE 2008

Abstracts are listed alphabetically within each section according to the name of the presenter of the paper. Please consult the congress programme for more details.

ALLSA ORAL PRESENTATIONS

PENICILLIN ALLERGY IN CHILDREN – OFTEN MISDIAGNOSED?

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Background: Penicillin antibiotics are commonly implicated in allergic reactions in children without tests being performed to confirm or refute allergy. Many children are inappropriately labelled penicillin-allergic and are treated with alternative antibiotics that may be less effective and more expensive.

Objective: The aim of this retrospective study was to determine the prevalence of true penicillin allergy in children with self-reported allergy.

Methodology: Clinical and laboratory data of children referred to the Allergy Clinic, RCWMCH for evaluation of suspected penicillin allergy between July 2002 and June 2007 were analysed. *Clinical data* included sex, age at first reaction, co-existing atopy and nature of adverse reaction. *Tests* included CAP-RAST[®] for penicillin V, penicillin G, ampicillin, and amoxil, skin-prick tests (SPT) as well as penicillin challenge test. The time interval between adverse drug reaction and evaluation was recorded.

Results: Data of 20 subjects were analysed. Penicillin allergy was confirmed in 5/20 (25%) subjects. Four were SPT +ve and 2 CAP-RAST +ve. The median age at reaction was 2 years; all were atopic, all presented with urticaria ± angio-oedema. The median time interval from reaction to evaluation was 2 months.

Penicillin allergy was excluded in 15/20 (75%) subjects. CAP-RAST, SPT and challenge tests were negative in all patients. Median age at reaction was 2.5 years. 3/15 were atopic; 6/15 presented with a maculopular rash, 6/15 with urticaria ± angio-oedema and 3/15 with an unidentified rash. The median time interval from reaction to testing was 20 months. All non-allergic patients subsequently received penicillin without adverse events.

Conclusions: Penicillin hypersensitivity is relatively uncommon in children. SPT and challenge testing is required to confirm or refute the diagnosis. Accurate diagnosis avoids the morbidity, mortality and economic cost associated with unnecessary withholding of penicillin therapy.

EFFECT OF DESLORATADINE ON EXERCISE-INDUCED BRONCHOCOSTRUCTION

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Background: Exercise-induced bronchoconstriction (EIB) is a significant problem in asthmatic patients. The link between allergic rhinitis and asthma is now well established. Patients with allergic rhinitis may have EIB.

Objective: This study compared the effects of desloratadine and placebo on EIB in a group of patients with allergic rhinitis and EIB.

Methods: This was a double-blind placebo-controlled, randomised, crossover study. Exercise challenge tests were performed before and after 7 days of treatment with either 5 mg desloratadine or placebo. Patients then underwent a washout period for 7 days and were crossed over to receive either 5 mg desloratadine or placebo. The exercise challenge tests were repeated.

Results: Desloratadine had no effect on the reduction in percentage fall in FEV₁, the AUC (0-60 min) and the time to recovery.

Conclusions: Desloratadine had no effect in attenuating the bronchoconstriction caused by exercise in patients with allergic rhinitis and exercise-induced bronchoconstriction.

ATOPY IN HIV-INFECTED AND NON-INFECTED CHILDREN IN PRETORIA, SOUTH AFRICA

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Introduction: The relationship between the development or aggravation of a pre-existing atopic state and HIV has not been thoroughly investigated in the South African context. HIV-positive patients have been shown to have a higher prevalence of atopy in some international studies, in the early stage of their disease, but this has not been documented in children.

Methodology: A prospective convenience sample study of children aged 3 months to 12 years attending the HIV clinic were recruited into the study. Information regarding the child's personal and family history of atopy was recorded. The WHO HIV clinical staging, CD4 counts were recorded. An age and sex-matched control group of healthy children attending routine follow-up at the cardiology and the neurology clinics were included. Skin-prick tests (SPT) for common aeroallergens were conducted on all patients.

Results: A total of 100 patients were included in the study with 50 in each arm. 10% of the HIV-infected patients in comparison to 16% of controls had positive SPT for aeroallergens. Of the HIV infected patients a high number of patients had allergic rhinitis and eczema (60% and 68% respectively). There is a lack of correlation between CD4 count and any SPT positivity ($r = 0.011$), CD4 count and presence of reported asthma ($r = -0.020$), and CD4 count and reported presence of dermatitis ($r = -0.06$). CD4 count was not statistically different between children with and without family history of atopy ($p = 0.68$).

Conclusion: It appears that the stage of HIV disease does not influence the development or expression of allergy. The dermatitis and chronic rhinitis that is prevalent among the HIV-infected patients is probably due to some other factors as opposed to immune dysregulation.

ALLSA POSTER PRESENTATIONS

AN INVESTIGATION OF THE CAUSES OF ALLERGY IN ASTHMATIC CHILDREN AT THE PRETORIA ACADEMIC HOSPITAL

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Background and objective: In 2007 a pilot study of atopy in a Pretoria asthma clinic revealed interesting results in the allergy profile of children attending this clinic and suggested regional differences in allergen sensitisation in Gauteng. The objective of this study was to extend the pilot study and document the prevalence of atopy and allergy sensitivities in a group of asthmatic children attending the Pretoria Academic Hospital Asthma Clinic.

Methods: A random sample of children attending the asthma clinic at Pretoria Academic Hospital were included after obtaining parental consent and patient assent. The study period was 1 year from November 2006 until November 2007. Each patient had a skin-prick test (SPT) to common aero- and food allergens performed.

Results: There were 100 patients enrolled with a mean age of 55.5 months (1 to 239 months). The number of children with a positive SPT was 45. More than half had asthma (71%). Eczema was found in 34 and allergic rhinitis in 36. The most common inhalant allergen was Bermuda grass (22%). Dog dander caused a positive SPT in 10% of patients and 5% of patients had a positive SPT to cat epithelium. Only 8% of patients demonstrated sensitivity to house-dust mite (HDM). Peanut allergy was seen in 9% of the patients. Cockroach tested positive in 11% of children.

Conclusion: Atopy (positive SPT and known disease) was demonstrated in 45% of asthmatic children. HDM sensitivity is less common in children living in Pretoria, when compared to those living in Johannesburg. Cockroach was found to be a common allergen in Pretoria. Peanut was the most common food allergen in Pretoria.

THE REASONS FOR UNDIAGNOSED ATOPIC CONDITIONS IN PARENTS OF ASTHMATIC CHILDREN

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Introduction: Previous South African studies in adults have demonstrated that atopic conditions are frequently underdiagnosed in the parents of atopic children. Reasons for this phenomenon are poorly understood.

Aim: To determine the reasons for undiagnosed atopic conditions in parents of a group of asthmatic children.

Methods: An observational, descriptive study of parents attending the Children's Chest and Allergy Clinic at Pretoria Academic Hospital during October 2007.

Results: 82 parents were enrolled: 98% were female, 51% were between 20 and 30 years of age, 42% of these parents were unemployed. 51% of the respondents would not answer the question on monthly income, while only 13% had an income above R3 000.00 per month. 42 (51%) of the respondents complained of a chronic cough, while 53 (65%) had chronic nasal symptoms (blocked or itchy nose). 37 (45%) respondents indicated that they thought their illness trivial and thus did not seek medical help. 25 (31%) indicated that they would only seek medical care when the illness was severe enough to limit daily activities. A range of other reasons for not seeking care were noted.

Conclusion: This study of parents of asthmatic children suggests that both socio-economic reasons as well as perceptions of seriousness of disease limit diagnosis of atopy in parents of atopic children.

IMPROVING QUALITY OF LIFE OF CHILDREN WITH SEVERE ATOPIC ECZEMA – A ROLE FOR PIMECROLIMUS

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Introduction: Atopic eczema is a common skin condition. It has the potential to severely impair quality of life (QoL) in affected children. Pimecrolimus is currently registered for mild-moderate disease but in clinical practice children with more severe disease are often treated with this therapy in an attempt to find a safe addition to long-term topical corticosteroid use. The aim of this study was to test the value of pimecrolimus in improving QoL in children with severe atopic eczema.

Methodology: This was a single site, phase 4, non-randomised, open label trial of pimecrolimus (Elidel 1% cream) use in children with severe to very severe atopic eczema, aged 4 months to 12 years. The study was conducted at Pretoria Academic Hospital. Patients with unsatisfactorily controlled disease despite conventional topical therapy, adequate use of emollients, allergen avoidance and non-pharmacological skin hygiene were enrolled. A Parent Index Quality of Life Questionnaire was completed by parents before and 1 to 3 months after children used pimecrolimus.

Results: A total of 24 patients were recruited, 20 completed the study. Ninety per cent of patients had co-morbid asthma and allergic rhinitis. The Paediatric Index of Quality of Life demonstrated a mean

33% score improvement after pimecrolimus use. There was an attendant reduction in cost of therapy to these patients.

Conclusion: Pimecrolimus use should be extended to patients with more severe atopic eczema as here QoL improvement is important and demonstrable.

QUALITY OF LIFE ASSESSMENT IN WHEEZY INFANTS BEFORE AND AFTER USING MONTELUKAST (SINGULAIR)

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Introduction: Problems in asthma management have been identified in the age category of the young child. In this age group and especially in children under 2 years of age major problems occur in both asthma diagnosis and treatment. The aim of this study was to assess quality of life improvement in young wheezy children using montelukast.

Study methodology: An open-label, non-randomised trial was conducted. Wheezy children (<2 years of age) were enrolled from the Asthma Clinic at Pretoria Academic Hospital. Both asthmatics and non-atopic wheezers were included. Children on medication (inhaled corticosteroids) who were shown to have unsatisfactory control of their symptoms were enrolled.

Quality of life was assessed using the Juniper Asthma Quality of Life Questionnaire and the Asthma Control Questionnaire. Parents were asked to complete two questionnaires before children started montelukast and one month after initiation of treatment.

Results: 35 parents were approached for enrollment but 9 denied consent or did not submit completed data forms. 26 patients participated in the study. 14 patients had non-atopic wheeze while 12 were defined as having asthma in that they had a positive allergy test or positive asthma prediction index or response to a bronchodilator.

There was a marked improvement in both scores following montelukast use [43.96154 to 74.96154 and 18.65385 to 6.038462 ($p < 0.0001$) respectively].

Conclusion: Montelukast provides a level of control of quality of life impairment seen in wheezy young children that cannot be provided by conventional inhaled therapy.

THE IMPACT OF PIMECROLIMUS CREAM 1% ON QUALITY OF LIFE OF CAREGIVERS OF CHILDREN WITH ATOPIC ECZEMA IN SOUTH AFRICA

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Objectives: Pimecrolimus cream 1% (Elidel®, Novartis Pharma AG, Basel), a non-steroidal topical calcineurin inhibitor is effective in the long-term management of atopic eczema. We assessed the effect of pimecrolimus on the quality of life of caregivers of South African children with atopic eczema.

Methods: 201 paediatric patients aged 2-12 years with mild to moderate atopic eczema in sensitive skin areas received pimecrolimus 1% cream twice daily (b.i.d) while signs and symptoms of atopic eczema were present, together with emollients and also reactive use of methylprednisolone aceponate as rescue medication in the event of a severe flare. Treatment was applied as required over a 3-month period. The primary outcome measure was the mean percentage change in quality of life of caregivers of children with atopic eczema, as assessed by the validated PIQoL-AD Questionnaire.

Results: Treatment with pimecrolimus significantly improved caregivers' quality of life, as evidenced by a 9.8% increase in mean QoL score at day 14 ($p < 0.001$) with a further increase of 5.7% noted at day 90 ($p < 0.001$). Overall, treatment with pimecrolimus over a 3-month period resulted in a significant total improvement in mean QoL score for caregivers of 15.9% ($p < 0.001$). Pimecrolimus cream was well tolerated and was also associated with improvement in signs and symptoms with atopic eczema in children, evidenced by significantly improved median IGA scores as compared to baseline.

Conclusions: Pimecrolimus cream 1% b.i.d significantly improved quality of life of caregivers of South African children with atopic eczema in addition to being effective and well tolerated.

QUALITY OF LIFE AND SYMPTOMS ASSESSMENT IN SUBLINGUAL IMMUNOTHERAPY FOR PATIENTS WITH HOUSE-DUST MITE RELATED PERENNIAL RHINITIS: DEFINITION OF A RESPONDER PROFILE

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Background: The efficacy and safety of sublingual immunotherapy (SLIT) is well-established in seasonal allergic rhinitis. However fewer data are available regarding perennial allergic rhinitis. The aim of this study was to assess the relationship between the effect of SLIT on symptoms and quality of life changes in patients with perennial rhinitis.

Methods: This exploratory phase IIIb, double-blind, placebo-controlled trial was conducted during the years 2003 to 2005 in the Cape Town area (South Africa). Sixty patients with house-dust-mite-induced allergic rhinitis were enrolled. Patients were randomised to receive, during 2 years, *Dermatophagoides pteronyssinus* SLIT solution (Stallergenes, Antony, France), with a maintenance dose of 300 IR ($N = 39$), or placebo ($N = 21$). The primary efficacy endpoint was the mean T5SS (Total Symptom Score for five symptoms: sneezing, runny nose, nasal congestion, ocular redness/itching/tearing, itchy nose/throat/ears). The limit percentage of improvement was fixed at

60% for the 'responders'. Rescue medication intake, individual symptom scores and quality of life (QoL-RQLQ) were assessed as secondary endpoints.

Results: The intention-to-treat (ITT) population included 55 patients (mean age: 32.93 yrs \pm 11.31). The mean T5SS change was lower for the 300 IR (-6.57) group compared to placebo (-5.02), but the difference did not reach significance. The mean percentage of days with rescue medication, as well as each individual symptom score, was lower for the 300 IR group compared to placebo. The percentage of good responders was significantly higher in the active group ($p = 0.0405$). For the QoL, the percentage of good responders for the ocular score is higher in the active group ($p = 0.0512$), reaching significance. The association between good responders to QoL and good responders to T5SS gives an odds ratio (OR) of 15 ($p < 0.0001$) for all patients (OR = 8.75, $p = 0.0061$ in active group) showing a good correlation. The most frequent adverse events were oral pruritus and throat irritation. No related SAE occurred throughout the study.

Conclusions: This exploratory study gives promising results with a 2-year treatment using *Dermatophagoides pteronyssinus* SLIT solution at a maintenance dose of 300 IR three times a week. A population of 'responders' may be defined as patients with an improvement of 60% or more of the clinical symptoms. QoL is strongly correlated to clinical symptoms.



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