P2377
Omalizumab decreases IgE production in patients with severe allergic asthma
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A pharmacokinetic-pharmacodynamic model predicts that omalizumab reduces production of IgE. To test this hypothesis serum total-IgE concentrations were quantified in 64 patients with severe allergic asthma (mean±SEM, 46.2±13 yrs, 41 female, 81.6±15 kg, total IgE: 397±189 IU/ml, FEV1: 2.1±0.1 L, or 64.7±2.4% pred., eNO: 51.2±7.4 ppb) treated with omalizumab (median 450 mg/month). Total serum IgE, asthma control (ACQ), lung function (FEV1) and exhaled nitric oxide (eNO) were evaluated at baseline (w0, n=64), after 16 weeks (w16, n=64) and after 52 weeks (w52, n=24) of treatment.

50 patients responded to omalizumab treatment. Overall (n=64), after 16 weeks ACQ (w0 3.2±0.16, w16 2.3±0.12, p<0.001), FEV1 (w16 2.3±0.12; p<0.01) and eNO (w16 40.1±5.4; p<0.027) improved significantly. Total IgE increased by 536±141 IU/ml (w16 984±215 IU/ml, p<0.01). Changes in total-IgE did not differ between responders and non-responders. After 52 weeks total IgE was 643±197 IU/ml, a decrease by 99±53 IU/ml vs. week 16 IgE levels, whereas ACQ, FEV1, and eNO remained stable. In this period total IgE serum concentrations decreased in 19 of 24 patients. These results support the conclusion that long-term omalizumab treatment reduces IgE production. Further, total serum IgE should provide a means to monitor IgE production and guide individual treatment decisions.


P2378
Impact of omalizumab treatment persistence on asthma control
Marie-Hélène Lefebvre1, Jonathan Gravel1, Jie Zhang2, Boris Gorsch2, Maria Figliomeni2, Patrick Lefebvre1, 1Health Economics and Outcomes Research, Groupe d’analyse, Lité, Montréal, QC, Canada; 2US Health Economics & Outcomes Research (HE&OR), Novartis Pharmaceuticals Corporation, East Hanover, NJ, United States

Omalizumab is indicated for moderate to severe allergic asthma patients with inadequately controlled symptoms. The purpose of the current study was to evaluate the impact of omalizumab treatment persistence on asthma control. Health insurance claims from the MarketScan database (2002Q1-2011Q2) were analyzed. Asthma patients with ≥12 months of continuous insurance coverage after the first omalizumab claim (index date) following 6 months of continuous omalizumab use were included. A 12-month landmark period following the index date was used to assess treatment persistence, defined as uninterrupted treatment without a gap of ≥28 days in omalizumab use. The impact of persistence with omalizumab treatment on asthma-related emergency-department (ED) visits and hospitalizations occurring between months 13 and 24 was evaluated. Multivariate time-varying Cox regressions were also conducted to assess the adjusted impact of treatment interruption (lack of persistence) on asthma control from month 1 to month 24.

In total, 3044 patients (mean age: 48.5; female: 62.4%) formed the study population. Persistence with omalizumab treatment at 12 months (39% of patients) was associated with a 51% reduction in the mean (SD) number of ED visits per patient (persistence vs. non-persistence: 0.064 [0.3] vs. 0.129 [0.15], P<0.001) and a 28% reduction in hospitalizations (0.131 [0.4] vs. 0.182 [0.6], respectively, P=0.034). Multivariate analyses corroborated these findings (HR [95% CI] for persistence vs. non-persistence: risk of ED visit: 0.63 [0.55-0.73], P<0.001; risk of hospitalization: 0.69 [0.61-0.79], P<0.001).

This analysis showed that omalizumab treatment persistence was associated with significant reductions in ED visits and hospitalizations.

P2379
Gender medicine and different prevalence in asthma by reports on anti-IgE (omalizumab) treatments
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Background: Generally, pathogenesis and prevalence of bronchial asthma indi-
Thematic Poster Session

Halle A-21 - 12:50 - 14:40

MONDAY, SEPTEMBER 3RD 2012

P2380
Factory predicting airflow obstruction in severe asthmatics
Baier Zeng, Li Leng Tan, So Yeong Low, Hong How Ong, Keng Leong Tan, Mariko Koh.
Respiratory Critical Care Medicine, Singapore General Hospital, Singapore, Singapore

Severe asthma was defined as “treatment-resistant severe asthma” and includes asthma on highest level of recommended treatment (high-dose Inhaled Corticosteroids (ICS) or high-dose ICS plus Long-Acting Beta-Agonist combination). Airway remodeling was defined as FEV1<70% of predicted and FEV1/FVC<0.7. Factors predicting remodeling were studied which include demographic profile, duration of asthma, allergen sensitization, presence of bronchial hyper-reactiveness, asthma-related comorbidities and frequency of exacerbation. 207 fulfilled severe asthma definition. Amongst these patients, 59 had airway remodeling. Airway remodeling was associated with increasing number of al- lerген sensitization (p=0.032). Amongst those with 5-8 allergen sensitization, 37.5% (n=12) had FEV1<50%. In comparison, 15.9% (n=7) had FEV1<60% amongst those with 1-4 allergen sensitization. The presence of bronchial hyper-reactiveness of methacholine challenge test, significant bronchodilator response and responsiveness associated with FEV1<60% (p<0.001; p=0.011 respectively). Frequency of asthma exacerbations (steroid burst, admissions and unscheduled emergency department visits), duration of asthma and presence of comorbidities and factors predisposing asthma were not significantly associated.

We have found that patients with broader spectrum of allergen sensitization were more likely to have airway remodeling. Early detection of allergen sensitization may be important and aggressive treatment of allergies may be able to arrest or reverse the remodeling process. Our findings concur with previous reports of presence of bronchial hyper-reactiveness, bronchodilator response and smoking being risk factors for remodeling.

P2381
Severe asthma in old patients is characterized by signs of immunosuppression and by lymphocyte resistance to glucocorticoids
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The aim of this study was to investigate the adaptation system in asthmatic patients over 60 years of age. Twenty one patients were enrolled into the study. In 15 patients the clinical course was evaluated as severe and 6 patients demonstrated the middle asthma (mean age, 60.3±2.5 and 30.8±3.0 years, respectively). Individual susceptibility of peripheral blood lymphocytes (PBL) to glucocorticoids (GCs) was evaluated by Δh value calculation: an integrative parameter, including the level of mitogen-induced lymphocyte proliferation and inhibition degree of the cell proliferation by dexamethasone. In healthy subjects the mean Δh level was ~0.24±0.30 (negative values of Δh correspond to high cell sensitivity to GCs). Results of the study are presented in the Table 1.

The results show that severe asthma is associated with low PBL sensitivity to GCs, HD, low ACTH level and the signs of immunosuppression (high TGFβ1 level and low PBL proliferative response).

Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Severe asthma</th>
<th>Middle asthma</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of disease (years)</td>
<td>19.6±3.6</td>
<td>12.4±3.3</td>
<td>0.17</td>
</tr>
<tr>
<td>FVC</td>
<td>89.3%</td>
<td>89.4%</td>
<td>0.6</td>
</tr>
<tr>
<td>PEFR</td>
<td>67.7%</td>
<td>71.8%</td>
<td>0.43</td>
</tr>
<tr>
<td>ACTH (pg/ml)</td>
<td>12.0±1.7</td>
<td>23.1±4.8</td>
<td>0.05</td>
</tr>
<tr>
<td>TGFβ1 (ng/ml)</td>
<td>1769±6102</td>
<td>12461±1810</td>
<td>0.024</td>
</tr>
<tr>
<td>Δh</td>
<td>2.03±0.18</td>
<td>1.00±0.17</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PBL proliferation (cpm)*</td>
<td>14542±2339</td>
<td>34567±7690</td>
<td>0.036</td>
</tr>
</tbody>
</table>

* Cpm, counts per minute.

P2382
Compliance and persistence among users of subcutaneous and sublingual allergen immunotherapy
Mengo Kiel1, Esther Röder2, Wim Hop1, Maiewim Ai1, Roy Gerth van Wijk2, Maureen Rutten-van Molken1. 1Dept. of Health Economics, Institute for Medical Technology Assessment, Erasmus University, Rotterdam, Netherlands; 2Section of Allergology, ErasmusMC-University Medical Centre, Rotterdam, Netherlands; 3Department of Epidemiology & Biostatistics, ErasmusMC-University Medical Centre, Rotterdam, Netherlands

Background: Subcutaneous (SCIT) and sublingual (SLIT) allergen immunotherapy is a safe and effective treatment of allergic rhinitis, but high levels of compliance and persistence are crucial to achieving the desired clinical effects. The objective was therefore to assess levels and predictors of compliance and persistence among grass & tree pollen, and house dust mite immunotherapy users in real-life, and estimate costs of premature discontinuation.

Methods: A retrospective analysis of a community-pharmacy database from The Netherlands containing data from 6486 patients starting immunotherapy for one or more of the allergens of interest between 1994 and 2009. 2796 patients received SCIT and 3690 received SLIT. Time-to-treatment discontinuation was analyzed and included Cox proportional Hazard models with time-dependent covariates, where appropriate.

Results: 82% of patients did not reach the minimally required duration of treatment of three years (SCIT: 77%, SLIT: 93%). Median durations for SCIT and SLIT users were 1.7 and 0.6 years, respectively. Of the persistent patients, 58% were never late in picking up their medication from the pharmacy. Other independent predictors of premature discontinuation were prescriber, with general prac- titioner patients demonstrating longer persistence than those of allergologists and other medical specialists, multiple-allergen therapy, higher socioeconomic status, and younger age. Direct medication costs per non-persistent patient were €3,800.

Conclusion: Persistence is better in SCIT users than in SLIT users. Further studies are needed to determine whether persistence can be improved by administering the therapy close to the patient’s home.

P2383
Changes in the prevalence of asthma, rhinitis and eczema in different age groups in Chinese schoolchildren
Sung Seng, Mohammed Shamssain, Jin Zhang, Shuting Hao, Jiou Guan, Shunting Wu, Chunliu Fu, Xiaoyun Chen. Department of Respiratory Medicine, Mater Dei Hospital, University of Macau, Macau

Introduction: Little is known about the prevalence of allergic diseases in children of different ages. This study aimed to investigate the prevalence of allergic diseases in children over a wide age range in Chinese schoolchildren in Shijiazhuang city in Hebei Province in China. In a cross-sectional study, we studied 10824 Chinese schoolchildren, aged 6-18 years, using ISAAC questionnaire. We classified children into three age groups; 6-8 years, 9-12 years, and 13-18 years. Asthma symptoms had significantly decreased with age from 6-8 year age group to 13-18 year age group (ever wheeze from 7.1% to 3.9%, P<0.001, current wheeze from 2.2% to 1.4%, cough from 11.6% to 10.6%, and ever asthma from 1.3% to 0.5%, P<0.001, respectively). Rhinitis symptoms had significantly increased with age from 6-8 year age group to 13-18 year age group (ever rhinitis from 11.2% to 16.4%, P=0.001, current rhinitis from 8.2% to 11.6%, rhinoconjunctivitis from 1.9% to 3.5%, P<0.005, and hay fever from 3.3% to 4.8%, P<0.05, respectively). Rash and eczema symptoms had significantly decreased from age from 6-8 year age group to 13-18 year age group (rash ever from 2.7% to 2.0%, current rash from 1.8% to 1.0%, P<0.001 and eczema from 15.4% to 7.2%, P<0.001, respectively). The study shows that symptoms of asthma and eczema had significantly decreased with age in these children while rhinitis symptoms had significantly increased indicating that rhinitis symptoms are major public health problem in Chinese children. The study will help to implement intervention strategies to control symptoms of rhinitis in this population.

P2384
Phenotypic predictors for hospital admission in adults with asthma: A case-controlled study
Jose Micallef, Eleanor Gerada, Richard Pullicino, Marianna Gauci, Steven Montefort. Department of Respiratory Medicine, Mater Dei Hospital, Msida, Malta

Background: RTIs are a known risk factor for admission with asthma exacerbation. Few studies give further insight to other possible risk factors.

Aim: To correlate asthma phenotypes with hospitalisation, in acute exacerbations of asthma.

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Abstract printing supported by Chiesi Visit Chiesi at Stand B2.10
Methods: We included 100 asthmatics admitted with an acute exacerbation over 14 months; matched for age and sex with a 100 well-controlled asthmatics from asthma clinic. Information on sociodemographic variables, clinical and laboratory data was collected. Acute and convalescent (at 6 weeks) titres of serum immunoglobulin E (Se Ig E) and serum eosinophil count were taken. SPSS was used for statistical analysis. Results: We detected a positive correlation between age of asthma onset and a history of atopy (p<0.001) and a family history of atopy (p<0.023); but no correlation with Se IgE levels was found (p>0.05). There was no significant difference in the number of hospitalisations over the previous year between smokers and non-smokers (p>0.308). The difference between convalescent Se IgE levels in males (mean 324) and females (mean 159) was statistically significant (p<0.029). Acute Se Ig E levels and eosinophils were found to be positively correlated (p<0.027), however, no correlation was established between acute and convalescent Se IgE and duration of asthma, personal or family history of atopy (p>0.05). There is no significant difference between Se IgE levels in different BMI classes or in different age groups (p>0.05).

Conclusions: Asthma exacerbation is more likely in those who are atopic and have a longer duration of asthma. This was not evident for smoking asthmatics and BMI. Convalescent IgE levels are higher in males post exacerbation.

P2385 Control of allergic rhinitis and asthma test, asthma control test and FeNO in asthma

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1Pulmonaruby, Rio Nova de Gaia, Portugal; 2Pneumology, Hospital de Braga, Braga, Portugal

Introduction: The assessment of asthma control is essential in the follow-up of this disease.

Objectives: Assessment of asthma and/or rhinitis control through the application of two questionnaires and the measurement of Fractional Nitric Oxide concentration in exhaled breath (FeNO). Methods: Cross-sectional observational study of patients with asthma and/or rhinitis that, in a two months period, visited a respiratory function laboratory to perform lung functional tests with measurement of FeNO and to whom were applied 2 questionnaires: Control of Allergic Rhinitis and Asthma Test (CARAT) and Asthma Control Test (ACT).

Results: 193 patients, 65,7% women, mean age 32,6±7,9 years. Of these, 63,3% had asthma and rhinitis, 24,8% had asthma and 11,9% had rhinitis. The mean FeNO was 36±28,4ppb (min/max= 4/115). 58,7% patients were atopic and a statistically significant association was established between atopy and FeNO (p<0.05). In patients with rhinitis positive bronchodilatation test, FeNO values were higher (p<0.05). This study demonstrated a statistically significant correlation between the total CARAT (CARATr) and ACT test (r=0.7, p<0.05), as well as between asthma CARAT sub-score (CARATa) and ACT test (r=0.6, p<0.05). It was demonstrated a statistically significant association between subjective control of the disease and CARATr, CARATa and ACT (p<0.05).

Conclusions: There was a statistically significant association between: atopy/positive bronchodilatation test and higher FeNO, and between CARAT/ CARATa and ACT test scores. This study highlights the importance of using low cost and easily applicable questionnaires that are validated in international surveys, corresponding to the assessed in the validation of asthma asthma control.

P2386 Pulmonary function tests change after cessation of inhaled corticosteroid therapy in asthma patients

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Background: Although guidelines recommend daily therapy for patients with mild persistent asthma, most patients use inhaled corticosteroid (ICS) intermittently or according to their symptoms.

Aim: To clarify the findings of pulmonary function test after cessation of ICS in patients with mild persistent asthma and whether we can prospect which patients will be deteriorate in pulmonary functions after interruption of ICS.

Methods: A total of 193 patients with mild persistent asthma who stopped ICS and were able to re-evaluate the pulmonary function tests when they revisited our clinic, were recruited from 4644 asthma patients who visited our clinic from June 2001 to December 2011. We compared the findings of pulmonary functions between before and after cessation of ICS. We also compared the pulmonary functions on initial visit between the patients who were worsened and unchanged in ICS after stopping ICS.

Results: Seventy two patients (37.3%) were declined in 10% of FEVI after cessation of ICS (group A), while 121 patients were unchanged (group B). The percent predicted FEVI in group A before cessation of ICS were 100±4±12.6% and those of after were 84±7±13.3% (p<0.001). The percent predicted FEVI in group B before cessation of ICS were 101±6±12.4% and those of after were 101±9±12.4% (N.S.). The percent predict FEVI on initial visit were 91±2±13.1% in group A and 95±4±13.9% in group B (p<0.05).

Conclusion: It may be possible that patients with a FEVI above 95% predicted normal on initial visit can be treated by as-needed ICS but the patients with lower percent predicted FEVI on initial visit should be treated with daily ICS.

P2387 Association between paternal smoking and symptoms of asthma, rhinitis and eczema in Chinese schoolchildren.

Ning Song, Mohammed Shamssain, Jin Zhang, Shuting Hao, Jiao Guan, Junlian Wu, Chunling Fu, Xixin Yan. Respiratory Medicine, The Second Hospital of Hebei Medical University, Shijiazhuang, Hebei, China School of Health Sciences, University of Sunderland, United Kingdom Respiratory Medicine, The Second Hospital of Shijiazhuang, Shijiazhuang, Hebei, China

Introduction: Parental passive smoking has been associated with adverse respiratory outcomes in children. Evidence remains inconclusive as to whether smoking is a risk factor for allergic disorders in children. The aim of the study was to evaluate the association between paternal smoking and symptoms of asthma and allergies in Chinese schoolchildren.

Body: We studied 10824 Chinese schoolchildren from Shijiazhuang city in Hebei province in China. We used an ISAAC questionnaire and we added questions related to paternal smoking. The prevalence of paternal and maternal smoking in China is 56.52% and 1.34%, respectively. The prevalence rates of all symptoms of asthma, rhinitis and eczema were significantly higher in children exposed to paternal passive smoking compared with children not exposed to paternal smoking (wheeze ever 6.5% vs 4.6%, P<0.001; current wheeze 2.3% vs 1.5%; exercise-induced wheezing 3.9% vs 2.4%, P<0.001; cough 13.2% vs 8.7%, P<0.001; ever rhinitis 15.3% vs 11.6%, P<0.001; current rhinitis, 10.8% vs 8.1%; hay fever 4.7% vs 3.7%, P<0.05; other chronic rash 2.9% vs 1.8%, P<0.01; current rash 1.8% vs 0.9%; and eczema 12.9% vs 9.7%, P<0.001, respectively). The study which is part of a major longitudinal study on Chinese children shows a strong association between parental smoking and symptoms of asthma, rhinitis and eczema and that Paternal passive smoking is an important risk for asthma and allergy in Chinese children.

P2388 Contribution of lung function tests in asthma screening: About a representative population

Ipsa Naadi, Joula Cherifi, Souma Toujani, Hafedh Zakarna, Yacine Ouahchi, Ben Salah Noura, Bechir Louati, Jalloul Daghous, Neda Mehri, Majed Beji. Pulmonology, La Rabta Hospital, Tunis, Tunisia

Introduction: The major difficulty in epidemiological studies of asthma is due to the methods used to formulate the diagnosis. Studies conducted through questionnaires related frequencies often higher than those of objective tests including measurement of flow rates or airway hyperresponsiveness. we show through this study the contribution of spirometry in the diagnosis of asthma.

Methods: A cross-sectional survey, single pass, representative of the general population was carried out in the capital of Tunisia in subjects aged from 2 to 50 years. Informed consent was obtained. Prevalence was determined through questionnaires, validated and used in international surveys, corresponding to the asthma screening and lung function tests. Spirometry was performed only in subjects reporting respiratory or atopy symptoms. Statistical analysis was performed using SPSS 18.0.

Results: The study included 4470 subjects. There was 40.2% male and 59.8% female. Current asthma prevalence was 6.8% in adults and 5.9% in children. Lung function tests were normal in 92% of cases (839 subjects) and had a mild obstruction disorder in 11 individuals, 7 of which were reversible. Fifty subjects gain more than 12% in forced expiratory volume (FEV1). Of these, 20 did not report symptoms of asthma but had symptoms of atopy. We deduce that 19.6% of asthmatics had a reversibility and 6.8% were asymptomatics.

Conclusions: In the absence of gold standard, it is difficult to define asthma in epidemiological studies. If the measure of bronchial hyperresponsiveness has a specificity similar to questionnaires on asthma symptoms, it is also less sensitive.

P2389 Does allergens influence resistin levels in children with allergic rhinitis?

Maria Palma Carbone, Anna Maria Zacarì, Bonci Enea, Francesca Occasi, Tatta Ernesto, Giovanna De Castro, Paolo Del Greco, Mariia Duse, Pediatric, Sapienza University-Policlinico Umberto I, Rome, Italy

Background: Resistin, a serum protein produced by adipocytes and circulating in high concentrations in adipose tissue, seems to be associated with inflammatory states. Many authors have reported high levels of this serum adipokine in respiratory diseases such as allergic rhinitis (AR).

Aim: The purpose of this study was to confirm the relationship between resistin levels and atopy and to assess whether these levels were influenced by Skin Prick Test (SPT) patterns in children with nasal obstruction.

Methods: 35 children (15 males; mean age 9 yr) were selected for nasal obstruction: 12 monosensitized to house dust mites (HDM), 10 to grass pollens (GP) and 13 with negative SPT to airborne allergens.

Results: The study included 4470 subjects. There was 40.2% male and 59.8% female. Current asthma prevalence was 6.8% in adults and 5.9% in children. Lung function tests were normal in 92% of cases (839 subjects) and had a mild obstruction disorder in 11 individuals, 7 of which were reversible. Fifty subjects gain more than 12% in forced expiratory volume (FEV1). Of these, 20 did not report symptoms of asthma but had symptoms of atopy. We deduce that 19.6% of asthmatics had a reversibility and 6.8% were asymptomatics.

Conclusions: In the absence of gold standard, it is difficult to define asthma in epidemiological studies. If the measure of bronchial hyperresponsiveness has a specificity similar to questionnaires on asthma symptoms, it is also less sensitive.

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were 5.5 ng/ml in children sensitized to HDM and 3.6 ng/ml in those sensitized to Pru. This difference was statistically significant (<0.001).<br><br>Conclusions: Our results confirm that serum resistin levels are associated with the degree of basophil de-granulation upon in vitro allergen challenge has been identified as CD123+HLA-DR-CD63+ cells. At least 3 of 9 common antigens were tested, including positive and negative controls, for a total of 146 determinations. We found that BAT results were significantly correlated with SPT (r=0.834, p<0.0001). Challenge with non conventional allergens allowed the identification by means of BAT of a case of bronchial asthma and atopic dermatitis who presented with respiratory insufficiency and bronchial asthma. Monitoring of atopic patients undergoing immunotherapy is actually in progress. As alternative to SPT, BAT in its present form is useful for distinguishing atopic from non-atopic patients. Further successful applications may include treatment monitoring and screening/diagnosis of type I hypersensitivity to uncommon allergens.<br><br>P2391<br><br>Monocyte inflammatory responsiveness and potential therapeutic target for pigeon fancies' hypersensitivity pneumonitis (HP)<br><br>Charnley1, G. Short1, K. Prentice1, K. Ruddock2, E. Rawlinson2, Ruth Adamson2, Kenneth Anderson2.<br><br>Objective: HP is an intestinal lung disease caused by an immune-hypersensitivity to inhaled antigens. Lung 'foamy' macrophages are characteristic of HP and monocyes may already be primed towards this phenotype, therefore we studied the phenotype and function of blood monocytes in HP among pigeon fanciers. <br><br>Methods: Pigeon fanciers: 22 with and 23 without HP symptoms. Measurements: Spiking sensitivity to IgE to pigeon antigens, and cytokines (ELISA). Monocyte function assessed by in vitro cytokine response to relevant doses of LPS or antigen. Results: LPS stimulation produced high (pg/ml, median [IQR]) IL-1β [76 [39, 140]] LPS-1 [510 [2000-20000]] and TNFα [512 [201, 1833]] compared with low concentrations in antigen cultures. LPS or antigen induced equal concentrations of IL-4, IL-8, IL-12 and CCL5. In contrast to LPS, antigen stimulated high concentrations (ng/ml) of CCL2 [12.5 [7.7, 16.3]] and IL-1RA [4.4 [1.3, 5.4]]. The IL-1RA concentration correlated with the serum IgG antibody titer (r=0.716, p<0.001) and with lung function (FEV1<0.048, p=0.01). The in vitro production of most cytokines by either stimulus was dose-dependent inhibited by dexamethasone (10e-9 and 10e-6M) except for CCL3 and CCL4; and there was a trend for monocytes from subjects with HP to be less steroid responsive. Conclusion: Development of HP was not limited by the potential of subjects' monocytes to produce pro-inflammatory cytokines. There appeared to be different LPS and antigen-driven cytokine endotypes. The relative steroid-insensitivity of some cytokines suggests that additional anti-inflammatory strategies might be useful in treating HP.
P2395
Epidemiological study of bronchial asthma among preparatory school pupils in Assiut district
Alameldin Abdallah, Khalid Samusy, Wafaa Shaaban, Dalia Mahran, Aliae Hussin. Pediatrics, Faculty of Medicine, Assiut, Egypt Pediatrics, Faculty of Medicine, Assiut, Egypt Community Medicine, Faculty of Medicine, Assiut, Egypt Chest Diseases, Faculty of Medicine, Assiut, Egypt

Background: The prevalence of asthma and allergies is increasing in both western and developing countries. Few studies evaluated asthma prevalence in Egypt.

Aims: Determination of the prevalence and risk factors of asthma among preparatory school children in Assiut district, in upper Egypt.

Subjects and methods: A cross sectional study was conducted among preparatory school students in Assiut city and two rural areas in Assiut governorate in upper Egypt. Twelve schools were selected randomly from different regions in Assiut city and two rural areas. The total coverage of the students included was 1048 (482 boys and 566 girls).

Data were collected by self administered questionnaire (in Arabic Language) which was fulfilled by the participants.

Results: Of the 1048 positively responding subjects, 65 fitted the diagnosis of asthma with over all prevalence of 6.2%. No significant difference was found between urban and rural areas (P: 0.075).

A positive family history of allergy and the presence of other allergic disease were significantly associated risk factors for asthma. Exposure to dust, cigarette smoke, playing and physical activity, and common cold attacks were the most common triggering factors for asthma exacerbations followed by other factors such as special foods or drinks.

Conclusion: Bronchial asthma is a significant health problem among children and adolescents in Assiut governorate and needs special care services. Wider scale multi-center studies in upper Egypt and other localities of Egypt are needed to outline the profile of bronchial asthma among children and adolescents in the whole country.

Results: For both IL-4 and IL-10, we observed a biphasic effect of vitamin D supplementation. For those with low (<30nmol/L) and high (>80nmol/L) serum 25(OH)D, added vitamin D suppressed IL-4 and IL-10 (Figure 1,2). Between these two levels, vitamin D increased expression.

Conclusions: Serum 25(OH)D levels may be an important determinant of the usefulness of vitamin D in beneficially modifying the immune response in COPD.

P2396
The in vitro effect of vitamin D on peripheral blood mononuclear cell cytokine expression in COPD
Niall Stewart, Richard Wood-Baker. Centre for Clinical Research Excellence (Respiratory), University of Tasmania, Hobart, TAS, Australia

Background: Vitamin D is recognised as a powerful modulator of immune responses. It promotes T helper 2 (Th2) immunity and the anti-inflammatory cytokine Interleukin-10 (IL-10). However, little is known about the effects of vitamin D on the immune response in COPD, a Th1 mediated disease.

Aims and objectives: We hypothesised that in COPD vitamin D would push a Th2 response, with increased levels of the Th2 cytokine Interleukin-4 (IL-4) and the suppressive cytokine IL-10. Such a shift could be beneficial in COPD.

Methods: We recruited 10 COPD subjects from whom we isolated peripheral blood mononuclear cells (PBMC) and measured serum 25(OH)D. PBMC were stimulated with antibodies to the T cell receptor either with or without added vitamin D.

Results: For both IL-4 and IL-10, we observed a biphasic effect of vitamin D supplementation. For those with low (<30nmol/L) and high (>80nmol/L) serum 25(OH)D, added vitamin D suppressed IL-4 and IL-10 (Figure 1,2). Between these two levels, vitamin D increased expression.

Conclusions: Serum 25(OH)D levels may be an important determinant of the usefulness of vitamin D in beneficially modifying the immune response in COPD.