81. Asthma: assessment and treatment

P500
Airway resistance at maximum inhalation as a marker of asthma and airway hyperresponsiveness in children
Dmytro Dmytriiev, Oleksander Katilov, Oleksander Mazulov, Kateryna Dmytriieva. Anesthesiology and Intensive Care, Vinnitsa National Medical University, Vinnitsa, Ukraine

Background: The goal of this study was to test the hypothesis that the minimal airway resistance achievable during a maximal inspiration (R(min)) is abnormally elevated in subjects with airway hyperresponsiveness.

Methods: The R(min) was measured in 15 nonasthmatic and 20 asthmatic children using forced oscillations at 8 Hz. R(min) and spirometric indices were measured before and after bronchodilation (albuterol) and bronchoconstriction (methacholine). A preliminary study of 40 healthy children first established height dependence of baseline R(min) values.

Results: Asthmatics had a higher baseline R(min) % predicted than nonasthmatic subjects (104 ± 22 vs. 82 ± 10% predicted, p = 0.0003). Sensitivity-specificity analysis using receiver operating characteristic curves indicated that baseline R(min) was able to identify subjects with airway hyperresponsiveness (PC20 < 16 mg/mL) better than most spirometric indices (Area under curve = 0.85, 0.78, and 0.87 for R(min) % predicted, FEV1% predicted, and FEF25-75% predicted, respectively). Also, 76% of the subjects with baseline R(min) < 100% predicted did not have airway hyperresponsiveness while 100% of subjects with R(min) > 145% predicted had hyperresponsive airways, regardless of clinical classification as asthmatic or nonasthmatic.

Conclusions: The relationship of baseline R(min) to asthma and airway hyperresponsiveness likely reflects a causal relation between conditions that stiffen airway walls and hyperresponsiveness in children. In conjunction with symptom history, R(min) could provide a clinically useful tool for assessing asthma and monitoring response to treatment.

P501
Nutritional aspects and asthma. Influence of malnutrition factors on severity of asthma
Zoran Stojanovic, Carlos Martinez Rivera, Carmen Centeno, Elena Molins, Estefania Sanchez, Caroline Becker, Marisa Rivera, Joan Ruiz Manzano, Josep Morera. Respiratory, Hospital Germans Trias i Pujol, Badalona, Barcelona, Spain

While obesity is a risk factor for asthma that is increasingly studied, malnutrition in asthma is less known.

Objective: To determine if nutritional aspects have an influence on severity of asthma.

Materials and methods: We included 91 asthmatic patients and studied 4 aspects related with asthma: severe persistent asthma or not, obstructive or not, poorly controlled and >1 exacerbation/year or not. Nutritional status was measured by BMI, waist/hip ratio, albumin, prealbumin and bioimpedance. Systemic inflammation by Hb, hematocrit, CRP and Ddimer. Significant was p < 0.05.

Results: Average age was 48 years, 21.2% men, 22.2% poorly controlled asthma, 45% had obstruction, 58% severe persistent asthma, 42.6% had >1 exacerbation/year. Older patients had more obstruction, severity, exacerbations and worse ACT. Higher Charlson index was associated with severity, obstruction and exacerbations. Increased CRP was related with obstruction (7.2±10 vs 2.8±3 p=0.061). Neither Ddimer, Hb, nor Hct were different in the aspects of severity. Nutritional values: obstruction was related with the rate of fat-free mass FFMI (17.3±2.4 vs 18.5±2.6 p=0.016). Patients with >1 exacerbation/year had lower percent of muscle mass (37.9±7.9 vs 42.9±8.3 p=0.015). Using a multiple linear regression age and FFMI remained as independent variables related with more obstruction, explaining 18% of the variation/drop produced in the variable FEV1/FVC. For every decreased point of FFMI, FEV1/FVC decreases by 1 point.

Conclusions: Lower percentage of muscle mass is associated with more exacerbations and low FFMI with obstruction in asthma. With more systemic inflammation, malnutrition has greater role, as in asthma with airflow obstruction.
P502
Asthma control test administered by web-based text messaging (short message service-SMS): Is it comparable with paper form?
Mehmet U. Manşur1, Didem Mungan2, Arzu Yorgancıoğlu3, Fusun Yıldız2, Dilsad Mungan1, Ayse Akkuş1, Irem Yılmaz1, Metin Akcan1, Bilhan Gemiçioğlu4, Gulçihan Orkun5, İnsu Yılmaz5.

Introduction: The use of web-based ACT via text messaging (Short Message Service-SMS) might be beneficial in the evaluation of control level of asthmatic patients without outpatient clinic visits. We aimed to compare the paper form of Turkish version of ACT and web-based ACT via text messaging and to evaluate their correlations with The Global Initiative for Asthma (GINA) based-physician’s assessment of asthma control.

Methods: In this multicenter prospective observational study, 431 asthma patients were randomized into two groups either to the paper form or text messaging (Short Message Service-SMS). Both ACTs (paper and text message) were completed by the patients at first admission, after 10±2 days and 5±0.7 days. Asthma control was assessed by the physician according to GINA criteria at the outpatient clinics. The reliability of the Turkish version of ACT was found 0.84 and 0.82 (Cronbach’s alpha) and test-retest reliability was 0.85 and 0.80 in the paper and the text messaging forms, respectively. In both groups, ACTs well correlated with the physician’s assessment at admission (r=0.70, p<0.001 for ACT, r=0.65, p<0.001 for text messaging groups, respectively. In both groups, ACTs well correlated with physician’s assessment at admission (r=0.70, p<0.001 for ACT, r=0.65, p<0.001 for text messaging groups, respectively. In both groups, ACTs well correlated with physician’s assessment at admission (r=0.70, p<0.001 for ACT, r=0.65, p<0.001 for text messaging groups, respectively. In both groups, ACTs well correlated with physician’s assessment at admission (r=0.70, p<0.001 for ACT, r=0.65, p<0.001 for text messaging groups, respectively.)

Results: On average, subjects completed the questionnaire in 55±16 seconds. The mean grade reading level was 5.7 grade level. Nearly half of the US population reads at or below the 8th grade high school education). Recognition of low literacy has resulted in greater attention to developing written materials at lower reading levels. However, less attention has been paid to the development of low literacy questionnaires. A standardized guide for recording difficult words and unfamiliar words. Only 1 item elicited no comments.

Conclusions: The use of a standardized debriefing guide allowed for the identification of problematic words, unclear meanings and confusion over scaling despite a deliberate attempt to develop a low literacy tool. These data suggest that a lower reading level is not sufficient to remove the potential for misreporting.

P503
Creating and testing a low literacy asthma questionnaire
Ruth Pinall1, Judy A. Shea2, Maureen George3.

1University of Pennsylvania, College of Nursing, Philadelphia, United States; 2University of Pennsylvania, School of Medicine, Philadelphia, United States; 3University of Pennsylvania, School of Nursing, Philadelphia, United States

Abstract printing supported by . Visit Chiesi at Stand B2.10

Background: Nearly half of the US population reads at or below the 8th grade level. Recognition of low literacy has resulted in greater attention to developing written materials at lower reading levels. However, less attention has been paid to the development of low literacy questionnaires for research beyond assessing grade reading level.

Objective: To systematically develop a research questionnaire that accurately captures subjects’ responses when self-administered.

Methods: Following traditional instrument development steps (comprehensive review of the literature and selection of items using content experts), researchers created a low literacy questionnaire. A standardized guide for recording difficult words and unfamiliar words. Only 1 item elicited no comments.

Results: The 39-item Conventional and Alternative Management for Asthma questionnaire was written at a 5.7 grade level and completed by 210 adults (88% female; mean age 48.76% Black; 20% White. 62% with ≤ high school education). On average, subjects completed the questionnaire in ≤ 5 minutes. Three subjects requested that the questionnaire be read to them; one was legally blind. Eight (4%) had difficulty with the Likert scale. As many as 31 (15%) asked for clarification on the wording of 15 distinct items. Four (2%) requested help in reading one or two unfamiliar words. Only 1 item elicited no comments.

Conclusions: The use of a standardized debriefing guide allowed for the identification of problematic words, unclear meanings and confusion over scaling despite a deliberate attempt to develop a low literacy tool. These data suggest that a lower reading level is not sufficient to remove the potential for misreporting.

P504
Asthma control test/Questionnaire for assessing asthma control: Systematic review and meta-analysis
Qin E. Zhu1, Hong-Fang Zhang1, L.V. Yan1, Rui Liang1, Yun-Qiu Jiang1, Heather Powell2, Juan-Juan Fu3, Lei Wang1, Peter Gerard Gibson2, Gana Wana3.

1Pneumology Group, Department of Integrated Traditional Chinese and Western Medicine, West China Hospital, Sichuan University, Chengdu, China; 2Center for Asthma and Respiratory Diseases, Department of Respiratory and Sleep Medicine, John Hunter Hospital, Hunter Medical Research Institute, University of Newcastle, Australia

Background: Currently the cornerstone of asthma management is to achieve and maintain asthma optimal control, but the diagnostic performance of Asthma control test (ACT) and Asthma Control Questionnaire (ACQ) has not systematically been evaluated.

Objective: We explored the diagnostic performance and its comparison between ACT and ACQ.

Methods: Studies concerned with the accuracy of ACT and/or ACQ for assessing asthma control were searched from PubMed, CENTRAL, Web of Science, Ovid and Embase. The summary estimates of sensitivity, specificity, and diagnostic odds ratios (DORs) at different levels of asthma control were performed by using bivariate random effects model and hierarchical summary receiver operating characteristic (HSROC) model.

Results: Twenty-two studies with 12090 subjects in ACT and 4447 in ACQ were identified. The summary estimates in ACT for assessing controlled, not-well controlled, and uncontrolled asthma were sensitivity (0.81, 0.77 and 0.79), specificity (0.97, 0.98 and 0.73), and DORs (15.56, 12.42 and 10.46), respectively, and those in ACQ were sensitivity (0.93, 0.72 and 0.87), specificity (0.65, 0.83 and 0.66), and DOR (24.92, 11.98 and 12.72), respectively. There were no statistical differences in the summary estimates of the diagnostic performance between ACT and ACQ by using HSROC models under the curve (all P>0.05). Subgroup and meta-regression implied that age, settings, asthma severity, and the race could influence the diagnostic accuracy.

Conclusion: The diagnostic performance between ACT and ACQ is not different, but clinicians need to consider the impact of the potential factors when establishing asthma control levels to promote therapies in a real-world setting.

P505
Air-trapping and decreased diffusion capacity in patients with severe asthma
Sunee Khursheed1, Irina Lapteva1, Elena Lapteva1, Artem Tomashovsky1, Elena Koroleva3.

1Pulmonology Department, Republic Center of Pulmonology and Phthisiology, Minsk, Belarus; 2Department of Phthisiology, Minsk, Belarus; 3Department of Functional Diagnostics, Republic Center of Pulmonology and Phthisiology, Minsk, Belarus

Introduction: Patients with severe asthma tend to have impaired lung function despite the high-intensity treatment.

Aims: The aim of the study was to assess the lung function parameters in patients with severe asthma compared with nonsevere disease.

Methods: In the recent research we have studied data of pulmonary function tests (spirometry, bodyplethysmography, diffusion capacity) in 31 patients with severe and in 23 patients with nonsevere asthma. To compare two groups of patients we used the Mann-Whitney U-test and Chi-squared test. Data are presented as median (interquartile range).

Results: Patients with severe asthma compared with those with nonsevere disease had lower VC, pre- and postbronchodilator FVC, pre- and postbronchodilator FEV1 and FEV1/FVC. TLC was similar in patients with severe and nonsevere asthma, but RV and RV/TLC were significantly higher in severe asthma group (RV: 192.6 (160,2-249.5) vs 163.8 (143.9-174.7) % pred, p=0.018; RV/TLC: 145.0 (132.1-161.6) vs 119.1 (112.5-135.4) % pred, p<0.001). These findings indicate the presence of more prominent air trapping in patients with severe asthma. The study revealed the decreased DLCO in severe asthma group (73.1 (57.0-81.1) vs 85.1 (78.4-94.4) % pred, p=0.008).

Conclusion: The presence of persistent airflow limitation, air trapping and decreased diffusion capacity are important features of lung function impairment in patients with severe asthma, suggesting that these patients have more considerable airway remodelling and structural changes of lung parenchyma.

P506
Influence of anxiety on the quality of life of people with bronchial asthma (BA)
Matylda J. Peregiel, Victor P. Kolosov. Laboratory of Prophylaxis of Nonspecific Lung Diseases, Far Eastern Scientific Center of Pulmonology and Pathology of Respiration SB RAMS, Blagoveschensk, Russian Federation

Background: The prevalence of anxiety in BA patients is considerably higher than in healthy people. It is little known how negative emotions can influence the quality of life (QL) of BA patients with cold airway hyperresponsiveness (CAHR) in winter.

Aims: To study the influence of anxiety on the QL of BA patients in the cold season of the year.
Methods: 111 BA patients were studied in winter. They were divided into two groups: with anxiety (68) and without it (43). To estimate QL a questionnaires SF-36 and AQLQ were used. “Hospital Anxiety and Depression Scale” was applied to find out anxiety. CAHR was estimated by the results of 3-minute isocapnic hyperventilation with cold air. Results: In the group of patients with anxiety in comparison with the patients with no anxiety there was a decrease of QL in domains PP (52.7±3.1 and 65.0±4.4, p<0.05), VT (45.3±2.3 and 59.2±2.8, p<0.001), SF (48.3±3.0 and 64.6±3.5, p<0.001) and MH (56.6±2.3 and 71.2±2.7, p<0.001) by SF-36, and in domains “Environment” (3.4±0.2 and 4.5±0.2, p<0.001) and “General QOL” (3.3±0.1 and 3.9±0.1, p<0.01) by AQLQ. The direct correlation was found between FEV1 and “Environment” in the group without anxiety (r=0.41, p<0.0000). In the group of patients with anxiety the correlation between FEV1 and “Environment” was r=0.26, p<0.001. Conclusion: Anxiety in BA patients has a negative influence on QL mainly on the psychosocial status. CAHR in winter also affects physical aspects of QL.

PS07 Prediction of deterioration of bronchial asthma (BA) control after six months of basic anti-inflammatory therapy
Nelly M. Smirnova, Anna G. Pribodko, July M. Perelman. Laboratory of Functional Research of Respiratory System, Far Eastern Scientific Center of Physiology and Pathology of Respiration SB RAMS, Blagoveschensk, Russian Federation
Background: Now it is accepted that the assessment of asthma control should include not only clinical manifestations, but also control of the expected future risk to the patients. Aim: To develop the way of prediction of uncontrolled BA after 6 months of basic anti-inflammatory therapy. Methods: 84 patients with uncontrolled BA were examined. At the first examination the test of isocapnic hyperventilation with cold air (BICA) was conducted; the second clinical examination was made after the BICA with the identification of hydrogen peroxide (H2O2) was done. In 24 weeks of basic therapy there was the second clinical examination where the control level over BA symptoms was determined. Depending on the obtained data the patients retrospectively were divided into two groups: the 1st group included 48 patients with the partial or total BA control, the 2nd group consisted of 36 patients with uncontrolled BA. Results: It was established that high airway hyperresponsiveness and the degree of oxidative stress intensity are independent predictors of BA control. On this basis and with the help of discriminant analysis we made a discriminant equation that allows to predict an uncontrolled course of the disease: D=-0.502×FEV1 (after BICA)+0.062×H2O2 (after BICA). The boundary value of the discriminant function is 23.07. If D>23.07, an uncontrolled course of the disease after 6 months of basic therapy can be predicted with 91% probability. Conclusion: The application of the developed method gives a possibility of a differentiated approach to the choice of BA basic therapy taking into account the risk of uncontrolled course of the disease.

PS06 Determination of levels of cysteinyl leukotrienes in exhaled breath condensate in asthmatics
Evgeny Nemeryov. Therapy, Siberian State Medical University, Tomsk, Russian Federation
One of the causes of ineffective treatment of bronchial asthma (BA) is comorbid pathology, which is a combination of BA with rhinitis. Aim: To study the characteristics and order of nasal pathology development in persons with BA associated with psychological stresses. 173 patients with BA allocated to 2 groups were studied. The first group included 56 patients in whom the first episode of the disease were associated with stressful life events. The second group included 117 patients in whom the disease was not linked to psychological factors. Results: Nasal pathology was diagnosed only in 25 of 56 (44.6%) patients in the first group and in 106 of 117 (90.6%) in the second one, p = 0.0000. Allergic rhinitis was observed in only 6 (10.7%) patients in the first group and in the majority of cases (93.7%) in the second group, p = 0.0000, while rhinosinusitis was most frequent in the first group (9 of 56 (33.9%) vs the second one (12 of 117 (10.3%), p = 0.0000. The order nasal pathology formation differed markedly between the two groups. So, nasal symptoms preceded the onset of asthma symptoms in the first group considerably rarely (7 of 25 (28%) than in the second group (28 of 106 (25.8%), p = 0.0000. On the contrary, nasal pathology development against the background of the current asthma was more frequent in the first group (11 of 25 (44%) than in the second one (8 of 106 (7.5%), p = 0.0000. Conclusion: Bronchial asthma, the development of which is closely associated with psychological triggers, is not related to nasal pathology in more than half the cases with frequent secondary involvement of the upper airways and predominance of rhinosinusitis over allergic rhinitis.

PS05 Mycobacteria of the patients with persistent bronchial asthma who constantly applying the inhaled corticosteroids
Inna Reshembieva1,2, Eastem Fassakhov1,2, Nadedga Glushko1, Elena Khaldeeva1, Svetlava Liosovskyaya1,2.1Allergology and Immunology, Kazan Scientific Research Institute of Epidemiology and Microbiology, Kazan, Tatarstan, Russian Federation; 2Department of Respiratory Diseases, Kazan Medical Academy, Kazan, Tatarstan, Russian Federation
Aim: To investigate fungal colonization the pharyngeal mucosa in patients with persistent asthma, who constantly applying the inhaled corticosteroids (gICS).
Methods: There were examined 30 patients with bronchial asthma (13 men and 17 women, mean age 51.8 years) using gICS at high and moderate doses of at least year. Mycological study of mucous pharynx (posterior wall of the pharynx, tongue root) for finding of Candida was performed on the Sabourau agar medium. Fungi growing was carried out at 28-30°C for 48 hours. To study the asthma there was used the model of a nitrocellulose film with immobilized hemoglobin.
Results: Fungi of the Candida genus were isolated from the mucosa in 23 patients (76.6%): C.albicans - 22 cases (of which in one case, there was marked the combination of Candida and Geotrichum candidum), C.tropicalis – 1case. In 73.9% of the cases intensity of the pharynx colonization by yeastlike fungi was high and was 104, 105 CFU/ml. It has been stated that 16 out of 22 isolated Candida albicans cultures (72.7%) have less vivid ability to form tube germination and pseudomycelium in comparison with clinical cultures, isolated from the pharynx of patient with the diagnose pharyngomikozikoe, the adhesive activity of these cultures shaved at the middle level and made 15-32%. 8 out of 22 patients (37.3%) have cultures with a high ability for germination tubs formation and adhesive activity at the level of 35-45%, which corresponded to the level of clinical cultures with high virulence. The causes of differences in the activity of the fungus Candida in asthmatic patients receiving gICS, require further study.

PS10 Omalizumab in severe adult atopic dermatitis associated to mild asthma treated with omalizumab
Anna Appigei Stangriella1,2, Maria D’Amato, Carolina Vitale, Maurizia Lanza, Antonio Molino, Maria Iuisa Boccioni, Matteo Sofia. Department of Respiratory Disease, University “Federico III” - A.O dei Colli, Napoli, Italy
Omalizumab is an established add-on therapy efficacious in allergic severe asthma. Its role in treatment of asthma and atopic dermatitis with high IgE levels is not well known. However Isolated case report show the efficacy of anti-IgE in recalcitrant asthma. Omalizumab may contribute to a skin disorder characterized by elevated levels of IgE and significant morbidity.
Aim: We report 5 adult patients 2 male and 3 women, mean age 34.6 (range 19-48yrs), with chronic severe atopic dermatitis and mild to moderate bronchial asthma. For atopic dermatitis they were treated with oral steroids (prednisone mean 17.5 mg die range 10 to 25 mg) and immunosuppressive therapy as Cyclosporine (5mg/kg) or Methotrexate (7.5 mg/wk). The patients started treatment with Omalizumab 375 mg every two weeks. Pretreatment IgE levels ranged from 282-5390 IU/ml (mean 2501 IU/ml).
Results: After 16 weeks, the serum IgE level decreased mean 1146 IU/ml (range 1900 to 3088) and a significant clinical improvement was registered in all patients with reduction of skin lesions and pruritic score (from 9 indicating severe itching to 3). The patients discontinued immunosuppressive treatment after two months and oral steroids after 6 months. After 1 year follow-up of Omalizumab therapy, the IgE levels were 620 IU/ml (range 140 to 1000) and no adverse events were documented. Moreover, the patients did not refer any asthma exacerbations at 1 year follow-up.
Conclusions: Anti-IgE Omalizumab is effective in improving atopic dermatitis unresponsive to conventional therapy in patients with concomitant asthma few weeks of treatment and is able to decrease steroid and immunosuppressive therapy without any interference on asthma control.

PS11 The effect of smoking on the levels of cysteinyi leukotriene in exhaled breath condensate in asthmatics
Deniz Celik1, Sibel Demir1, Handan Inonu Koseglu1, Semsettin Sahin2, Ibrahim Serhat Celikel1, Unal Erkorkmaz3.1Allergology and Immunology, Kazan Scientific Research Institute of Epidemiology and Microbiology, Kazan, Tatarstan, Russia; 2Department of Respiratory Diseases, Kazan Medical Academy, Kazan, Tatarstan, Russia; 3Chest Diseases, Gaziosmanpasa University, Tokat, Turkey
Aim: Cysteinyl leukotrienes are the most important mediators in pathogenesis of asthma. The aim of this study was to assess the impact of smoking on the levels of cysteinyl leukotriene LTD4 and LTE4 in exhaled breath condensate (EBC). Methods: Thirty smoker (Group I) and 29 nonsmoker (Group II) asthmatics and 29 healthy control (Group III) were included in the study. EBC (EcoScreen, Jager) was collected from all of the participants and pulmonary function tests (PFT) were performed too. All of the asthma cases were stable according to asthma control questionnaire. Levels of LTD4 and LTE4 were measured in EBC with ELISA.
Results: The levels of LTD4 and LTE4 were shown in Table 1. When we compared the groups according to PFT’s we determined statistically significant difference between Group 1 and III in FEV1/FVC, MMEF and MMEP%. There was a
significant negative correlation between LTE4 levels and FEV1/FVC in Group I.

Leukotriene levels of the study groups

<table>
<thead>
<tr>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>LTE4 (pp/mL)</td>
<td>79.20±13.16</td>
<td>76.95±14.82</td>
<td>68.21±20.95</td>
</tr>
<tr>
<td>LTE4 (pp/mL)</td>
<td>65.52±10.90</td>
<td>46.74±34.75</td>
<td>45.02±26.99</td>
</tr>
</tbody>
</table>

*There was a significant difference between the Group I and Group III, Group II and Group III (p<0.05); however, there was no significant difference between other pairwise comparisons (p>0.05).

Conclusion: LTE4 levels were significantly higher in smoking asthma group than the other groups. This result suggests that LTD4 receptor specific blocker agents might be useful in smoking asthma patients and clinical studies are required in this issue.

P512 Role of viral pathogens in infectious exacerbations of bronchial asthma in adults

Vitali Datchuk1, Oleksandr Dzublyk1, Irina Dzublyk2, Georgii Kapitan1, Oksana Obertinska2, Rostislav Sukhin1, Nina Nedlinska1, Oleksandr Mukhin1, Vyacheslav Kliagin1. Department of Treatment of Non-Specific Lung Disease, State Institution “National Institute of Tuberculosis and Pulmonology n. a. F. G. Yanovsky, AMS of Ukraine”.

Purpose - to investigate the spectrum and frequency of viral pathogens in patients with infectious exacerbation of bronchial asthma (BA) which treated in a pulmonology department.

The study included patients only if they voluntarily consent to the research, objectives and scope of planned inspections. This work was funded from the state budget.

Virology were performed in all patients feces biomaterial: a smear or swab from the nasal cavity.

Laboratory diagnosis of viral infection was performed by real-time PCR (PCR-FRT) and a rapid immunochromatographic immunoassay analysis. PCR was performed in adeno viruses (HAdV), bokavirus (hBoV), rhinovirus (HRV), coronavirus (hCoV), RS-virus (hRcV), metapneumovirus (hMpV). The method of immunochromatographic test detected antigens of influenza viruses A and B, respiratory adenovirus (hAdV) and RS-virus (hRcV).

For the purpose of the study was carried out screening all patients which were sent to hospital State Institution “National Institute of tuberculosis and pulmonology behalf F.G. Yanovsky, AMS of Ukraine” with the diagnosis of exacerbation of bronchial asthma from Dec 2010 to Sep 2011 a total of 52 patients observed, which revealed 21 viral pathogens by PCR, 6 viral pathogens by the rapid immunochromatographic test and 2 (hRcV) by both methods.

Viral pathogens detected in the (48,1±6,9% of patients with exacerbation of asthma. The greatest etiological importance by the results of virological studies were: rhinoviruses – 68,0%, influenza virus A and B – 12,0%, RS-virus – 8,0%, metapneumovirus – 8,0%, adenovirus – 4,0%, respiratory corona virus – 4,0% of cases.

P513 What is missing in the asthma control test? The relationship between compliance, inhaler technique and level of control

Sawasen Baddar1, Omar Al Rawas2. Medicine, Sultan Qaboos University, Al Khoud, Oman

Introduction: Asthma control test as many other validated questionnaires are used to assess level of control. However, they do not identify factors that may lead to poor control such as medication compliance and inhaler technique. In this study level of asthma control was assessed by using asthma control test (ACT) and simultaneously the accuracy of compliance with prevent medications and inhaler technique were evaluated. The main objective of the study is to find out the relationship between compliance and inhaler technique with the level of asthma control.

Methodology: Prospective 3 months study (1st February – 31st May 2011) was conducted in a university hospital in Oman. Asthmatic adult patients on preventer inhaled medications were included. ACT was used to assess level of asthma control. Inhaler technique was evaluated using a standardized checklist. Compliance was assessed using a pre designed scoring system.

Results: 218 patients were assessed. Poor control was found in126 (58%) patients, of whom 74 (59%) had poor compliance and 34 (27%) had poor inhaler technique. There was no significant difference in the level of control between patients with good and partial compliance (60% vs 59%). Only 33 (16%) patients had good level of control and good compliance and good inhaler technique.

Conclusion: Since compliance and inhaler technique have a direct effect on the level of control, they should be part of all asthma assessment tools.

P514 Clinical characteristics of severe asthma subphenotypes

Irra Lamszus, Natalia Porashniko. Department of Pulmonology, Republican Scientific Practical Center of Pulmonology and Pneumology, Minsk, Belarus

The natural history and clinical subphenotypes of severe asthma are poorly understood particularly among patients that have difficult to control asthma and no other co-morbidities.

To describe the differences in the clinical characteristics of severe asthma subphenotypes on the basis of age at onset of disease.

Cross-sectional clinical study was carried out in 40 patients (age 18 years) with severe asthma. In the retrospective collected data were included the demographics information and assessments of lung function (ie, spirometry and body box plethysmography). For lung function were determined airflow resistance (Raw), thoracic gas volume, vital capacity, total lung capacity (TLC), and residual volume (RV). The flow-volume relationships were evaluated with FEV1; FVC and FEV1/FVC ratio.

16 patients with late-onset asthma (40%) had clinical significant compromised lung function whether they had asthma of short duration or long duration, suggesting that significant compromise in lung function occurred at or very soon after the initial diagnosis of asthma had been made. They had more resistance to airflow (Raw, % predicted 307.5 ± 20 vs 285.3 ± 23.0 respectively p<0.024); larger lung volumes (total lung capacity: TLC, % predicted 107.1 ± 2.6 vs 103.8 ± 2.3 respectively p<0.062; and residual volume: RV, % predicted 202.3 ±10.3 vs 190.1 ±8.7 respectively p<0.037) compared to early-onset asthma. Late-onset asthma also was characterized by a reduced FEV1/FVC and a history of more frequent sinopulmonary infections.

Late-onset severe asthma may be associated with a greater degree of airways inflammation and/or more exuberant repair processes, resulting in rapid remodeling of distal part airway, compared to early-onset asthma.

P515 Illness perceptions and medication beliefs: Key determinants of adherence to maintenance medication in chronic asthma

Ad Kaptein. Medical Psychology, Leiden University Medical Centre, Leiden, Netherlands

Outcome in asthma is determined not only by pulmonary function or other biomedical characteristics. Illness perceptions and medication beliefs are crucial in predicting outcomes of asthma management. Illness perceptions pertain to patients’ subjective beliefs and emotional responses to their asthma. Medication beliefs tap idiosyncratic views on (asthma) medication. Both influence coping and thereby outcome.

I’ll review recent studies on this topic, with a range of respondents and care-providers, with patients with varying degree of asthma severity and in different settings of medical care. Examples of how to assess illness perceptions and medication beliefs will be presented.

All studies report substantial effects of illness perceptions and medication beliefs on various categories of outcomes. These findings emphasize the clinical relevance of addressing patients’ beliefs about their illness and its medical management, and suggest that this may improve outcome of asthma care. Examples of recent high-quality intervention studies on this topic will be presented, with a view to how to improve quality of care, and thereby quality of life of patients with asthma. In the era of shared decision making and patient empowerment it appears that addressing and incorporating illness perceptions and medication beliefs into regular clinical care is a must.

Prof. Ad Kaptein, a.kaptein@lumc.nl
P517
Anamnesis and clinical peculiarities of severe bronchial asthma in children
Olga Tsvetina, Svetlana Sininova, Natalija Ilienkova. Siberian Branch under the
Russian Academy of Medical Sciences, Scientific Research Institute for Medical
Problems of the North, Krasnoyarsk, Russian Federation Medicine, Krasnoyarsk
State Medical University, Krasnoyarsk, Russian Federation

Aim: To study anamnesis and clinical data on severe/moderate severe atopic bronchial asthma with different level of control, determine the main risk factors of the formation of BA non-controlled course in infants.

Materials and methods: We have examined 100 infants, severe/moderate severe atopic BA patients, inhabitants of Krasnoyarsk territory in average ages of 10.9±1.1. We have studied allergy anamnesis, carried out physical and specific allergy examination, estimated the results of instrumental research. In order to determine the level of controlling the disease we had estimated the results of “Test on controlling asthma”. We have formed 2 groups: with controlled BA (n=50) and non-controlled BA (n=50).

Results: Living under unfavorable living conditions (wooden homes with damp, mould, stove heating, overcrowding) had been marked in 34% cases in group with non-controlled BA course and in 28% in group with controlled BA (p=0.0012). One or two smoking parents had been marked in 36% cases in controlled BA course and in 48% in non-controlled BA (p=0.007). Analysis of family structure revealed that 48% children of group of good control and 74% of group of absence of control live in sole-parent families (p<0.001).

Conclusions: We have determined anamnesis predictors of non-controlled BA course in children: living in home with stove heating with damp in living area, smoking inside and presence of domestic animals. When estimating social status of the families in BA children with non-controlled course we have stated frequent occurrence of sole-parent families with low income.

P518
Complementary and alternative therapy in bronchial asthma – A study from India
Kunugapalli Venugop, P.R. Sreelatha, R.S. Nisha, Healthservices, Govt General
Hospital, Alappuzha, Kerala, India medical Education, Medical College,
Alappuzha, Kerala, India medical Education, Medical College, Alappuzha,
Kerala, India

Introduction: Various complementary and alternative therapies (CAT) are being studied in Asthma management, with reports of varying effects. CAT includes a variety of breathing and relaxation exercises including Yoga, diaphragmatic breathing, progressive relaxation etc. If these can facilitate easy disease control, they can be utilized in bringing down the cost of Asthma treatment, a major issue in resource limited countries like ours.

Aim: 1. Compare the effect of 2 CATs i.e, Buteyko Breathing Technique (BBT) and Diaphragmatic Breathing Exercises (DHE) in asthma treatment
2. Compare the effect of each to conventional treatment alone.

Materials & methods: Prospective, case-control study conducted in an allergy clinic at Alappuzha. Patients with persistent asthma aged 25-65 years were randomly grouped into 3.

A – Receiving conventional therapy alone
B – Above+BBT
C – Above+DHE

Disease control assessed by spirometry, Mini Asthma Quality of Life Questionnaire, Asthma Control Test and β-agonist use during first week of study and end of third month. Statistical analysis by 2 way ANOVA technique

Result: Total of 30 patients, 10 in each group studied. No significant difference in FEV1 among 3 groups; statistically significant improvement in quality of life (QOL) among groups B & C, with reduction in β-agonist use.

Conclusion: CAT can be useful in improving QOL among asthmatics.

P519
Depressive symptoms in asthma patients
Evreni Mekov1, Penka Nikolova1, Petra Marinova2. 1First Therapeutic Clinic, “St. Sofia”, Sofia, Bulgaria; 2Second Psychiatric Clinic, UMHATNP “St. Sofia”, Sofia, Bulgaria

Background: Asthma is a chronic disease with worldwide prevalence of 1-18%. Co-morbid depression (prevalence of around 10%) in patients with asthma affects quality of life and treatment outcomes.

Objectives: To examine the prevalence of depression and its association with asthma control in patients with asthma versus healthy controls.

Methods: Two groups of subjects were recruited: 1) patients with asthma and no other chronic condition (n = 114) - all of them performed spirometry and answered two questionnaires: ACQ and CES-D; 2) healthy controls (matched for age, sex, BMI, education and smoking history) (n = 208) without asthma or other chronic disease - they answered only the CES-D questionnaire.

Results: The difference between the mean Total CES-D group scores is not significant (p=0.073). 51.9% of the control group had <10p, while 30.7% of the asthmatics had the same result. In the asthma group, 10.5% had major depression, but 58.8% had mild-moderate depression. Total CES-D score correlates well with smoking status (r=−0.57, p<0.001). Total CES-D score did not correlate with mean ACQ score, FEV1, education and sex. The mean ACQ score correlates well with CES-D question11 (r=−0.43, p<0.001). There is statistically significant difference between mean ACQ score in asthmatics with major depression and the rest of the asthmatics.

Conclusions: In this study healthy people tend to have major depression or no depression at all, while asthmatic patients have predominantly mild-moderate depression. Asthmatics with major depression have worse asthma control. This study confirms earlier results concerning prevalence of depression in asthma patients, but questions the higher prevalence in asthmatic patients compared to healthy controls.