

35. Clinical problems: miscellaneous II

E443

Evaluation of clinical usefulness of impedance cardiography in critical ill patients

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Background: Impedance cardiography (ICG) is a safe and totally non-invasive method of hemodynamic monitoring. The aim of the study was to evaluate the clinical usefulness of impedance cardiography in critical ill patients.

Methods: Prospective study. Preliminary examination. The study was performed at the Medical University Teaching Hospital in 20 critical ill patients who fulfilled the criteria of sepsis according to the definition accepted on the conference ACCP/SCCM. ICG recording was performed in the investigated patients at a few time intervals. N-terminal brain natriuretic peptide (NT-proBNP) concentrations and the scores in the Sepsis-related Organ Failure Assessment (SOFA) score were determined at the same time.

Results and Conclusions: The obtained results enable to state that impedance cardiography is a non-invasive, easy in use and repeatable method of monitoring a wide spectrum of hemodynamic indices, useful in septic states. The diagnostic and prognostic value of particular indices is differentiated. In their estimation the dynamics of changes in time and the effect of the applied pressor drugs should be considered. The analysis of at least a few indices authorizes to drawing binding conclusions. In septic states, according to the authors, the decrease of SVRI, MAP and LVET values and the increase of HR and STR values are particularly prognostically adverse. These indices correlate with NT-proBNP concentration and the number of SOFA score confirming their relation to the heart failure and clinical state deterioration. Hemodynamic volume indices: SV, SI and CO seem to be of lesser prognostic importance in critical ill patients with sepsis.

E444

Isolated sternal fracture and myocardial contusion – diagnosis and follow-up

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Background: In cases of blunt thoracic trauma an effort should be made toward early diagnosis of myocardial injury.

Methods: Clinical evaluation (physical examination, heart rate and BP), biochemical tests (CK, CK-MB, troponin), chest x-ray and ECG recording have been routinely done immediately after 24 h, 72 h, of the onset of thoracic trauma resulting in sternal fracture.

Results: 43 patients with isolated sternal fractures were treated from 1996.- 2002. (34 males, 9 females, age range 16-74, average 47 years). Most common symptoms were chest pain in 33 (77%) and dyspnea in 11 (26%). Average BP values were 131±15.37 (90-180 mmHg) systolic; 82.09±7.73 (60-100mmHg)diastolic. Average heart rate was 82.55±21.23 (40-140/min). ECG abnormalities included ST-T segment changes (40%), sinus bradycardia (23%), IBBR (18%), sinus tachycardia (12%), microvoltage QRS (5%), SVES and VES (5%), VES (2%). ECG abnormalities were most common during first 24 hours after injury (35 pts, 81%). 48 and 72 hours after the trauma, ECG changes were noted in 30% and 9% of patients respectively. Positive correlation has been found between ECG changes and chest pain, elevated levels of CK, CK-MB and diastolic BP (p<0.05). Logistic-regression analysis showed that only bradycardia has had statistical significance as a risk factor for onset of arrhythmias. (without EKG changes n=23, with EKG changes n=20, p<0.05, OR 5.65, 95%CI 1.01-31.48).

Conclusion: Prognosis of myocardial contusion is good. Most reliable methods for early detection are clinical and ECG monitoring, noted during first 24 hours after injury, and the most important ECG findings is bradycardia. Longer hospital treatment may be necessary in cases of late complications.

E445

Clinical and radiological grading of superior vena cava obstruction

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Introduction: Superior vena cava obstruction (SVCO) is commonly caused by neoplastic venous compression and presents with typical symptoms and signs. Its clinical severity presumably depends upon the degree of obstruction and the adequacy of venous collateral formation. We postulate that a reproducible relationship exists between the degree of SVC obstruction, the presence of collateral circulation

and the extent of clinical symptoms that can be developed into novel clinical and radiological scoring systems for SVCO.

Methods: We prospectively evaluated consecutive cases of SVCO with a newly developed clinical scoring system, which is based on easily detectable clinical symptoms and signs of SVCO. In parallel, we recorded and scored the degree of SVC obstruction and extent of collaterals visible on contrast enhanced computed tomography (CT).

Results: Thirty-four cases of SVCO were evaluated, of which 24% were clinically mild, 47% moderate and 29% severe. Lung cancer was the underlying histological diagnosis in 94% of cases. Radiologically, 53% had complete obstruction of the SVC. A well-established collateral system was found in 41%. A scoring system subtracting a "collateral score" from an "obstruction score" showed a significant correlation with the clinical score (r = 0.75, p < 0.01).

Conclusions: Clinical severity of SVCO depends upon the degree of obstruction of the SVC, and is mitigated by collateral formation. The novel clinical scoring system can predict the underlying CT features in a case of SVCO, and can be proposed for bedside assessment of SVCO severity.

E446

Life quality analysis based on a self – administered questionnaire in patient with nasal obstruction

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The purpose of treatment of patients with nasal obstruction is achieving normal airflow through the nasal cavity, restoring the physiological function and improvement of patients' quality of life. Monitoring of life quality should be based on patient's subjective feelings.

Aim: Evaluation of most important problems and complaints related to a impaired nasal patency in patient's point of view.

Material and method: The study included 171 patients with impaired nasal patency which was confirmed in otolaryngological examination. The study utilized RQLQ questionnaire (Rhinocconjunctivitis Quality of Life Questionnaire) translated into Polish.

Results: Impaired nasal patency was observed to affect patients' quality of life significantly. These limitations concerned both physical activity and everyday functioning. Most uncomfortable symptoms included: nasal obstruction, need for repeated nose wiping, sleep disorders and feeling of tiredness. The disease produced numerous emotional problems, i.e. irritation, embarrassment and frustration of patients.

Conclusions: RQLQ questionnaire is an effective method for assessment of subjective ailments in patients with impaired nasal patency.

E447

Patient satisfaction with telephone consultations in a respiratory outpatient clinic

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Telephone consultations have been shown to be an effective tool in primary care.¹ We have studied patient satisfaction with telephone consultations in patients with respiratory illnesses in secondary care. 500 sequential patients attending a follow-up appointment in 3 different respiratory clinics in a central London teaching hospital were evaluated for suitability for a telephone consultation as an alternative to a face-to-face appointment. 104(33%) patients were suitable for a telephone consultation, and of these 45 provided completed satisfaction data for both a telephone consultation and a subsequent face-to-face consultation. Satisfaction with the two types of consultation was assessed using an adapted MISS-21 questionnaire². Mean MISS-21 scores were 114.3±13.9 for the telephone consultation and 116.8±14.9 for the face-to-face consultation. Patient satisfaction with the telephone consultation showed no significant differences between the two consultations (MISS-21 p=0.064, Wilcoxon statistical test). This suggests that patient satisfaction with telephone consultations in a selected population of respiratory patients is good. We acknowledge with thanks the assistance of Drs M Sridhar and R Coker in this study.

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E448

Quality of life in patients with venous thromboembolism

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Introduction: Venous thromboembolism(VTE) is a disease with high morbidity and affects the quality of life in management and follow up period.

Aim: To investigate the quality of life and related factors in VTE patients.

Methods: A total of 63 patients with VTE (20 in acute period and 43 in follow up period with secondary prophylaxis) were included in the study. After recording the demographic characteristics, additional diseases, drug usages and follow up periods, Hospital Anxiety and Depression Scale (HAD) and Short Form Health Survey (SF-36) measurement were applied. While HAD was applied only to patients in acute period, HAD and SF-36 were applied to patients in subacute and follow up period. There was no difference between two groups with regard to age, sex and additional disease.

Results: Nine of 63 patients had anxiety and 20 patients had depression. The number of the patients with anxiety were meaningfully higher in group with PE+DVT, when the groups were divided as isolated pulmonary embolism(PE), deep vein thrombosis(DVT) and PE+DVT ($p=0.03$). When the patients were divided as acute and subacute- follow up, no difference was detected between two groups for HAD ($p>0.05$). In female patients of subacute-follow up group (SF-36 was applied) General Health Scores and in patients with additional disease Role Physical and Bodily Pain Scores were low($p<0.05$). In the group of PE Role Physical, Role Emotional and Bodily Pain scores and in the group of DVT Physical Functioning scores were low($p<0.05$).

Conclusion: In our study, meaningful increase of anxiety and decrease of quality of life in patients with PE+DVT were detected. Although DVT only affects the physical functional score, PE affects many parameters of the life quality.

E449

A case of acquired cutis laxa and bronchiectasis

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Cutis laxa is a rare disorder characterized by lax, pendulous skin with loss of elastic tissue. It can be congenital or acquired. Acquired form develops following episodes of urticaria, angio-oedema, inflammatory skin disease, hypersensitivity reactions, etc. It presents as large folds of lax skin with emphysema as the most frequent extracutaneous manifestation, affecting 5% of all patients.

We describe a 29 year old man diagnosed with bronchiectasis and compensatory emphysema as a result of post-measles pneumonia aged 9 months. Aged 23, the diagnosis of chronic idiopathic urticaria was made following recurrent episodes of wheals, which eventually settled. His respiratory condition remained stable throughout. Aged 26, he developed excess eyelid skin, generalised skin laxity with lengthened ear lobes and bloodhound features. A skin biopsy showed absence of elastic fibres. Since then, his lung function progressively deteriorated. He died aged 29 while waiting for lung transplantation assessment. Post-mortem examination showed the cause of death to be bronchopneumonia secondary cutis laxa. Histopathological examination of the lung tissue showed a near-absence of elastic fibres.

We believe our patient had post infective bronchiectasis since infancy, with acquired cutis laxa secondary to urticaria involving his respiratory tract, causing a fast progression of bronchiectasis and, ultimately, death. The autosomal recessive form of cutis laxa is more severe, most patients not surviving infancy. The main cause of death is emphysema and the cutaneous manifestations are present since birth. The autosomal dominant form does not tend to affect the internal organs, and the skin manifestations can appear at any age.

E450

Survival and predictive factors of mortality in patients with bronchiectasis

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Bronchiectasis is a common disabling but rarely fatal disease. However the long-term prognosis and risk factors for death are not well known.

Aim: To determine the survival and predictive factors of mortality in patients with bronchiectasis, during the follow-up period using a four year prospective study.

Methods: 98 out-patients with bronchiectasis were included from 2000 to 2005.

Results: The mean age was 61 ± 10 and 16 patients died; mean survival time was 44 ± 1 months. The survival rates were 97%, 89%, 76%, 58% at 1, 2, 3 and 4 years, respectively. Cox proportional hazard model revealed that long-term mortality was significantly associated with the factors listed in table1.

Although our results may have failed to prove a long-term efficiency on the course of LTOT and antibiotic therapy, a beneficial effect is observed with reduction of hospitalization.

Table 1: Cox proportional hazards analysis in bronchiectasis.

Parameters	RR (95% CI)	p
Age	1.14 (1-1.2)	<0.001
BMI	0.71 (0.6-0.8)	<0.001
FEV1 (%)	0.98 (0.9-1)	0.05
FVC (%)	0.96 (0.9-1)	0.04
PaO2 (mmHg)	0.94 (0.9-0.9)	0.01
PaCO2 (mmHg)	1.11 (1-1.2)	0.007
Radiographic localization	5.29(1.1-23.5)	0.02
MRC	5.73(2.5-12.8)	<0.001
Scheduled visits (/yr)	0.41(0.2-0.6)	<0.001
Vaccination	10.1(3.4-29.8)	<0.001

These results suggest that high BMI, regular vaccination and scheduled visits may have beneficial effects on the survival of bronchiectasis. Besides, presence of hypoxemia, hypercapnia, airflow obstruction, dyspnea level and radiographic localization are more closely correlated with mortality.

E451

Prevalence of bronchiectasis in patients with chronic obstructive pulmonary disease

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Study objectives: To determine the prevalence of bronchiectasis using high resolution computed tomography (HRCT) in stable chronic obstructive pulmonary disease (COPD) and the correlation between bronchiectasis scores and clinical findings in patients with COPD.

Methods: HRCT scanning of the chest was performed on 43 stable mild-severe COPD patients. The HRCT images were reviewed independently by two radiologist. The severity and extent of the bronchiectasis was scored with Bhalla method (Bhalla, M. *et al.* Radiology 1991; 179:783-788). Relationship were sought between the bronchiectasis scores and clinical history, pulmonary function tests and arterial blood gases. Interobserver variability in the diagnosis of bronchiectasis was examined.

Results: HRCT scanning showed that 11/43 (25.5%) patients had bronchiectasis. Total scores ranged as follows: Extent of bronchiectasis; 1: 10/11 (90.9%), 3: 1/11 (9%), severity of bronchiectasis 1: 7/11 (63.6%), 2: 4/11 (36.3%). Agreement between two readers on the bronchiectasis scores was moderate (extent of bronchiectasis kappa = 0.50, severity of bronchiectasis kappa = 0.51) No relationship was seen between bronchiectasis scores and COPD hospitalizations, daily sputum production, pack years of smoking, pulmonary function tests and arterial blood gases. There was a positive correlation between COPD hospitalizations and sputum volume and a negative correlation with FEV₁ and PaO₂.

Conclusions: In this study a high prevalence of bronchiectasis was found in patients with COPD. However, no relationship was seen between bronchiectasis scores and clinical history and laboratory investigations.

E452

Clinical relevance of peri-operative IL-6 plasma levels in heart valve surgery

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Systemic inflammation is likely involved in skeletal muscle weakness in COPD. We recently reported that systemic IL-6 induced skeletal muscle atrophy in rats, via a decreased myocardial contractility, peripheral vasodilation and reduced muscle blood flow. These circulatory changes also exist in systemic inflammatory response syndrome, a highly inflammatory process occurring after cardiopulmonary bypass (CPB) and contributing to a deleterious outcome. To examine whether the hemodynamic observations in rats are clinically relevant, 22 patients undergoing heart valve surgery using CPB were recruited. Plasma levels of cytokines known to be elevated during myocardial failure were measured preoperatively, immediately after surgery, and 12 and 24h later via ELISA. Subsequently, correlations were made between these cytokines, and hemodynamic variables and need for inotropics, vasopressors and vasodilators at the earlier mentioned time points. Only TNF- α , IL-6 and IL-10 were highly related to the different outcome variables. Concerning IL-6, preoperative values were correlated with the need for inotropics ($R=0.52$, $p=0.01$). IL-6 levels immediately after surgery were related to the need for vasopressors ($R=0.55$, $p<0.01$) and 12h after surgery to cardiac output ($R=0.45$, $p<0.05$), heart rate ($R=0.57$, $p<0.01$) and systemic vascular resistance ($R=0.54$, $p=0.01$). This hemodynamic profile corresponds to that seen in rats treated with IL-6, where the same serum levels were reached. Therefore, not a coincidental, but rather a causal relation between IL-6 and the described hemodynamic profile in patients is likely and might justify an interventional study to block its effect. Supported by FWO-Vlaanderen, grant#G.0386.05.

E453

Kikuchi-Fujimoto disease: analysis of 244 cases

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Kikuchi-Fujimoto Disease (KFD) was first described in Japan in 1972. KFD is a relatively rare disease and frequently mimics tuberculous lymphadenitis and sometimes inappropriately treated as tuberculosis. We aimed to gather information useful in avoiding misdiagnosis and facilitating differential diagnosis. To our knowledge, there is no previous study comparing the clinical and laboratory characteristics of patients from different geographical parts of the world.

We searched literature records beginning from 1991 and analyzed epidemiological, clinical and laboratory data of 244 patients (including patients diagnosed in our institution) reported in 181 publications.

Of the 244 cases, 33% were male and 77% female. Mean age was 25 (1-64) and 70% was younger than 30. Most of the cases were reported from Taiwan (36%), USA (6.6%), and Spain (6.3%). Fever (35%), fatigue (7%) and joint pain (7%) were the most frequent symptoms, while lymphadenomegaly (100%), erythematous rashes (10%), arthritis (5%), hepatosplenomegaly (3%), leucopenia (43%), high erythrocyte sedimentation rate (40%) and anemia (23%) being the most common findings. KFD was associated with SLE (32 cases), non-infectious inflammatory diseases (24 cases), and viral infections (17 cases). SLE was more frequent in cases from Asia than Europe (28%, 9%, respectively). The disease was self-limiting in 156 (64%) and corticosteroid treatment was necessary in 16 (6%) of the cases. The mortality rate was 2.1%.

Early diagnosis is crucial since the clinical and laboratory presentation generally imitates situations needing lengthy and costly diagnostic and therapeutic interventions. Additionally, association with SLE needs further investigation.

E454

Bronchodilators in treatment of pneumonias caused by M.pneumoniae

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Infection with M.pneumoniae are not so common in population. Pneumonias caused by M.pneumoniae are accompanied, not in all cases, with lung function disturbances. Actually, obstructive findings are possible. The aim of work to established of improving bronchodilators in treatment m.pneumoniae pneumonia. The method of work/ the analysis were prospective during the previously three years while 33 (18 F-15 M, mean age of 36,3 years, smokers-12 pts 18 / 24h) patients with previously proven M.pneumoniae pneumonia, were treated with antibiotics and also with bronchodilators. Patients were divided in two groups- in group A patients were treated only with antibiotics, in group B – antibiotics and bronchodilators inhalation was the therapy. All of patients had clinical symptoms of infection, radiographic findings pneumonia (right hilar adenopathy in 2 pts, lower lobe homogenous shadow in 9 pts, reticular shadows predominantly in right lung in 19 pts, difusse nodular shadow in 3 pts) and serologically high level IgM. The therapy were ambulatory ~ macrolides (during 14,8 days) in group A; macrolides with bronchodilators inhalation in group B. Obstructive findings (as clinical symptoms and spirometry findings) were in all patients and mean level FEV1 were: 1,78+ 28 L (51,2+45%) during the 10,5 days. Statistical analysis were obtained. The obtained results - treatment in group B were shortest (p < 0,05) are clinical, radiographical and spirometry recovering were achieved. Conclusion- combination of antibiotics and bronchodilator inhalation is much effective in pneumonias caused by M.pneumoniae accompanied with obstructive findings.

E455

Histological, histochemical and immunohistochemical study on pulmonary hamartoma. Case report

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Introduction and aim: Pulmonary hamartomas are benign neoplasms composed of varying proportions of mesenchymal tissues, such as cartilage, fat, connective tissues and smooth muscle, typically combined with entrapped respiratory epithelium. Having in the mind that the population incidence is 0,25% and that its peripheral location mimicks the solitary metastasis on routine chest x-ray, we report it.

Case report: Male, 43 years of age was operated and the tumour was sent to pathology for ex-tempore pathological analysis.

Macroscop: Tumour is multilobulated, 2 cm. in diameter, whitish, firm mass that was shelled out from the surrounding parenchyma.

Methods: For histopathological analysis the following were used classical (HE), histochemicals (AB-PAS and VAN GIESON) and immunohistochemical (LSAB 2), using antibodies to desmin, vimentin and pancytokeratin.

Histopathology: It is composed predominantly of lobulated masses of mature cartilage surrounded by fat, smooth muscle, bone and fibrovascular tissue. Clefts of respiratory type epithelium extend as slit-like spaces between the lobules of mesenchymal components. Immunohistochemistry study contributes to diagnosis.

Conclusion: – Conservative surgery by enucleation, is appropriate.

– Cytological diagnosis of chondroid hamartoma is based on recognition of the mesenchymal components, representing gold standard of diagnosis;

– Immunohistochemical results affirm histological diagnosis.

E456

Pulmonary function test trend in adult bronchiolitis obliterans

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Introduction: Some histopathologic patterns of bronchiolar disease may be relatively unique to a specific clinical context, such as respiratory bronchiolitis caused by cigarette smoking and toxic fume like sulfur mustard (SM).

Aim of this study is determining trend of pulmonary function indexes in SM exposed patients as a toxic fume induced bronchiolitis obliterans cases along time.

Methods: In this retrospective cohort study, 407 cases were included. According to PFT taking interval we considered 4 groups: 1-3, 4-6, 7-10 and more than 10 years. We compared amount of FVC, FEV1, PEF and MMEF changes among studied groups by analysis of variance test. Also, we used linear regression analysis to create a linear model of changes for each PFT index.

Results: Following equations imply correlation between decrease in PFT indexes and time between two tests plus index value of baseline performed PFT. 1: $\Delta(\text{FVC \%}) = -2.23 - (0.76 \Delta\text{T}) - (0.23 \text{FVC1\%})$, 2: $\Delta(\text{FEV1\%}) = -1.43 - (0.95 \Delta\text{T}) - (0.10 \text{FEV11\%})$, 3: $\Delta(\text{PEF \%}) = -0.91 - (1.07 \Delta\text{T}) - (0.14 \text{PEF1\%})$.

Discussion: BO Syndrome is the main cause of late morbidity and mortality in SM exposed patients and also in lung transplantation. Better understanding of nature of this syndrome extremely will promote therapeutic aspect of disease. Our study suggests a pattern of decline in pulmonary function indexes directly proportional to the percent of each index in the baseline PFT was apparent over a 10-yr observation period.

E457

Procalcitonin and C-reactive protein levels correlate worse with organ failure then NT-proBNP levels in septic patients

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Introduction: The aim of the study was to evaluate the relations between N-terminal brain natriuretic propeptide (NT-proBNP), procalcitonin (PCT) and C-reactive protein (CRP) concentrations and the severity of organ dysfunction assessed by the Sepsis-related Organ Failure Assessment (SOFA) score in septic patients.

Material and methods: It was a prospective study. Twenty patients with sepsis and severe sepsis were included in the study. NT-proBNP, PCT, CRP, SOFA score, and survival were evaluated in 20 septic patients.

Results: Mean NT-proBNP, PCT, and CRP concentrations and the number of SOFA scores were respectively: 140.80 pg/ml \pm 84.65 pg/ml, 22.32 ng/ml \pm 97.41 ng/ml, 128.51 mg/l \pm 79.05 mg/l and 6.31 \pm 3.75 pts. Correlation of the NT-proBNP level and the SOFA score was 0.5164; whereas, with procalcitonin and C-reactive protein levels 0.3998 and 0.1779, respectively.

Conclusions: Procalcitonin and C-reactive protein levels worse correlate with organ failure then NT-proBNP levels in septic patients.

E458

Pseudomonas aeruginosa colonisation in bronchiectatic patients and clinical reflections

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Pseudomonas aeruginosa colonisation increase morbidity, mortality and cost in bronchiectatic patients. We aimed to find out relationships between colonisation and comorbidities, clinical&radiological status and hospitalization frequency.

66 bronchiectatic patients analysed retrospectively. 32(48,5) patients were male. Median age was 58,5 years. %50 of patients were non-smoker. Patients hospitalized meanly 0,48 times in a year. 2(%3) patients had clubbing and 12(%18) hemoptysis. 2 patients were operated because of bronchiectasis. 26(%39) patients had COPD, 10(%15) asma, 2 IgA deficiency, 1 hydatid cyst, 1 Kartagener's syndrome, 1 Down syndrome and 1 cystic fibrosis. Blood gas analysis performed in 22 patients; %36,4 were normal, %18,2 had type I and %45,5 had type II respiratory insufficiency. In HRCT, bronchiectasis localised %19,7 in right, %16,7 in left and %63,6 in bilateral lungs. In %75,8 of patients hyper aeration, %65,2 fibrotic changes, %30,3 peribronchial thickening and %6,1 atelectasis were attending.

%36,4 of patients had tuberculosis in backgrounds. In these patients, bronchiectasis were localized %62,5 in upper lobes and %58,3 of bronchiectasis were bilateral.

%25,8 of patients had normal spirometric examinations, obstructive pathology seen %39,4, restrictive %15,2 and mix %18,2 of patients. Sputum culture performed 44(%66,7) patients which had purulent sputum. *Ps. aeruginosa* colonisation determined in 15(%34,1) patients. In patients with colonisation; clubbing and hemoptysis were significantly frequent, hospitalization rate was higher and mostly female(p<0.05). Blood gas analysis and spirometric parametres were worse in patients with colonization(statistically not-significant).

E459

Therapeutic and diagnostic use of highly concentrated sodium chloride solution inhalations in pulmonology

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Aim: to evaluate the use of highly concentrated sodium chloride solution (HCS NaCl) for the improvement of diagnostics and therapy of the most common and severe respiratory diseases with bronchial obstruction.

Materials and methods: Group 1 was used to evaluate therapeutic HCS NaCl effect on physical properties of mucus and pulmonary clearance, and on bronchial patency and clinical picture. In this group 30 patients with chronic non-obstructive bronchitis (CNB), 50 – with COPD with different degree of lung ventilation disorder, 14 – with mucoviscidosis, 10 – with bronchoectatic disease and 7 – with primary ciliary dyskinesia received inhalations of hypertonic NaCl solution using ultrasonic inhalator. In 9 patients effects of dry and moist aerosol were compared, 32 patients underwent a course of 8-10 HCS NaCl inhalations. Control group consisted of 13 patients, who received 0.9% NaCl solution inhalations. In group 2, 230 studies of lung capacity ventilation were performed in 9 patients with the established bronchial asthma (BA) and in 8 patients with the putative asthma, in whom usual broncholytic test did not allow to diagnose the disease, in 11 patients with COPD and in 10 patients with CNB and in 22 healthy subjects (HS). In this group original diagnostic method with the use of HCS NaCl.

Results: In group 1 HCS NaCl inhalations led to significant improvement of mucociliary and cough clearance ($p < 0.01$) and adhesive properties ($p < 0.05$) of bronchial contents. Positive dynamics of clinical picture and OFV_1 was noted. In group 2 use HCS NaCl significantly increased the importance of broncholytic test in patients with BA ($p < 0.01$), thus improving diagnostic possibilities.

E460

Treatment of chronic cough associated with atopy

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Aims and background: The aim of our study was to compare the clinical efficacy of combined therapy with a fluticasone propionate (FP) aqueous nasal spray plus oral loratadine (L) given once daily and oral loratadine (L) once daily administered in mono- therapy in relieving chronic cough associated with atopy. Atopic cough has been defined as an isolated chronic cough, no variable airflow obstruction or airway hyperresponsiveness, and one or more objective indications of atopy (positive skin prick tests, elevated total or specific IgE, or blood or sputum eosinophilia).

Methods: Two hundred out- patients (12- 48 years of age) with positive skin prick test to perennial and seasonal allergens, nasal symptoms and cough more than 8 weeks duration randomized to receive either a oral L (10 mg) once daily (n=120), or FP aqueous nasal spray 200 mcg plus oral L (10 mg) once daily (n=80) in a single- blind, parallel- group study. Cough severity score and scores of daytime and nighttime nasal symptoms were evaluated daily, for 3 weeks.

Results: The group treated with FP aqueous nasal spray plus oral LTD showed significant improvement in overall daytime symptom scores and nighttime symptom scores (cough + total nasal) compared with group treated with oral LTD at endpoint ($P = 0.002$). Adverse events were mild and transient.

Conclusions: FP aqueous nasal spray plus oral LTD is effective and well tolerated in the treatment of chronic atopic cough associated with allergic rhinitis.