395. New insights in management of interstitial and vascular lung diseases

P3600

Pulmonary features of autosomal dominant hyper-IgE syndrome [AD HIES]

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AD HIES is characterized by recurrent severe pulmonary infections, pneumatoceles, eczema, staphylococcal abscesses, mucocutaneous candidiasis, abnormalities of bone and connective tissue and elevated serum IgE. Mutations in signal transducer and activator of transcription 3 (STAT3) have recently been found to account for most cases.

Aim: The aim of the study is to present clinical phenotype of AD HIES.

Materials and methods: A group of 22 HIES pts were genetically analyzed. The mutations in STAT3 were confirmed in 7 AD HIES pts, presented here. Recurrent and severe pulmonary infections were found in all pts except one (pt 7) at various frequency. The typical complications of pneumonias were the formation of pulmonary cyst and abscesses. Long term complications included pneumatocele and bronchopleural fistulae. In several cases lobectomy was performed. The structural abnormalities were then sites of fungal and Gram (-) infection.

Results:

Table 1. Patient characteristics

Pt. ID	Sex	Age [yr] / *	STAT3 mutation	P	LA	L	PC
1. JJ	M	25 / *6	c.1110-2A>G splicesite	6	+	–	+
2. DD	M	22 / *3	1909 G>A V637M	4	+	–	–
3. LT	M	20 / *11	1909 G>A V637M	13	+	+	+ actinomycosis
4. KZ	F	15 / *2	1144 C>T R382W	10	+	+	+
5. WJ	F	14 / *5	1145 G>A R382Q	17	–	+	+ aspergilloma
6. MK	M	11 / *3	2141 C>G T714A	5	–	–	–
7. MB	M	3 / *1	1145 G>A R382Q	–	–	–	–

*Age at diagnosis (yr). P: pneumonia; LA: lung abscess; L: lobectomy; PC: pneumatocele.

Conclusions: 1. Early recognition of the HIES enables to introduce the right kind of therapy. 2. Pneumonias should be treated aggressively to try to prevent parenchymal damage. 3. If pneumatocele and bronchiectasis are present, antimicrobial prophylaxis covering Gram (-) bacteria and fungi is needed.

P3601

Is quantitative HRCT related with diagnostic yield of fiberoptic bronchoscopy in sarcoidosis?

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This study aimed to evaluate the diagnostic yield of fiberoptic bronchoscopic (FOB) modalities and its relation with quantitative findings with high resolution computerized tomography (HRCT). 64 patients that consists of 19 males and 45 females with the mean age of 43 diagnosed with sarcoidosis with complete records of HRCT were retrospectively recruited for a time period of Feb 2000 to Jan 2010. HRCT scans were retrospectively assessed in random order by an experienced observer without knowledge of the bronchoscopy result or lung function tests. The diagnostic yield of transbronchial biopsy (TBB) was% 43.6. Although it did not reach statistical significance, the lobar HRCT score in the sampled lobe was associated with a positive TBB result. Bronchial mucosa appearance was significantly related with positive mucosal biopsy (MB). The diagnostic yield of MB was% 24.5 in general patient population however in patients with abnormal mucosa this rate was increased up to% 84.6 (p=0.000). The diagnostic yield of transbronchial needle aspiration (TBNA) was 25.7%. Right hilar and subcarinal lymph nodes were the most diagnostic sites. The diagnostic yield was significantly higher in patients who had larger size of lymph nodes (p=0.007). Quantitavie HRCT score did not correlate with the findings of MB and TBNA.

Quantitave HRCT did not cause remarkable impact on the results of diagnostical work up of FOB.

P3602

Importance of fatigue measurement in sarcoidosis patients

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Fatigue is recognized as one of the most prominent symptom in sarcoidosis patients. In the cross-sectional study in 189 biopsy proven sarcoidosis patients (138 female) with average disease duration of 14±8 years, we evaluated the relationship between the fatigue severity and their health status and pulmonary function tests. Fatigue was measured by standardized Fatigue Scale, which contains 14 items, with four response options (the higher the score, the more severe fatigue). Scale distinguishes mental fatigue, physical fatigue, and it is also possible to calculate a total fatigue score. Two health status questionnaires were administered: respiratory specific – the St Georges Respiratory Questionnaire (SGRQ) and generic – the 15D. Total SGRQ and 15D scores, as well as the scores for individual domains of SGRQ, were calculated for each patient. The pulmonary function was determined by means of spirometry and body-plethysmography.
Pearson's coefficient of linear correlation revealed a statistically highly significant correlation ($p<0.001$) between all of the fatigue scores and all of the health status scores evaluated. The highest degree of correlation with total fatigue score was found for the 15D (r=–0.689) and total SGRQ (r=0.600) scores. However, the degree of correlations between fatigue scores and pulmonary function parameters were low, with highest correlations noticed for FVC(L) and FEV_1(L).
We can conclude that fatigue should be measured in sarcoidosis, since it isn't possible to assess its severity according to the objective disease outcomes, like pulmonary function tests. The health status and fatigue are two similar, but different aspects of sarcoidosis. All applied instruments demonstrated good measurement properties.

P3603

Sarcoidosis patients with cardiac involvement in the National Tuberculosis & Lung Diseases Research Institute in Warsaw, Poland – 3 years experience

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Introduction: Sarcoidosis is a systemic granulomatous disease with predominant manifestation in the lungs, however other organs can be involved, including heart, what is potentially life-threatening. The aim of this study was to evaluate the incidence of cardiac involvement in sarcoidosis patients diagnosed or followed up in 1st and 3rd Lung Diseases Departments of National TB & Lung Diseases Research Institute in Warsaw.
Method: Retrospective analysis of database discharged patients with the final diagnosis of sarcoidosis (D86). The analysis covered the period from January 2008 to October 2010. Diagnosis of cardiac sarcoidosis was verified according to Modified Guidelines for Diagnosis of Cardiac Sarcoidosis based on the Study Report on Diffuse Pulmonary Diseases: From the Japan Ministry of Health and Welfare, 1993 (9) and modifications 2006.
Results: 933 sarcoidosis patients were seen in two departments in the almost 3 years period. Multiorgan sarcoidosis (D86.8) was detected in 102 cases (10.9%). The cardiac involvement was found only in 30 patients of this group, which was 3.2% of the entire group. There were 19 males (63%) and 11 females (37%), 5 cases in stage I, 25 in stage II. The mean age was 45.5±12.6 years (range: 28 - 74). The time from the first diagnosis of sarcoidosis to detection of heart involvement was 10 months (median, CI 90% range 0 to 6.4 years).
Conclusion: Cardiac sarcoidosis in our own material was diagnosed in the similar percentage as in previously published data. According to post mortem diagnosis data from literature diagnosis of this form of the disease still remains a significant clinical problem.

P3604

Primary thoracic amyloidosis: Rare disease and hard diagnosis

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Amyloidosis is a disease caused by extracellular deposition of complex protein-polysaccharide in a β-pleated configuration within soft tissues. Primary thoracic deposition of amyloid is scares. To explore the different thoracic manifestations of primary thoracic amyloidosis (PTA) and its diagnosis difficulty, we retrospectively analyzed cases of PTA hospitalized in our department between 2007 to 2009. PTA (AL type) diagnosis was confirmed by pathological study in all cases. All patients were investigated by chest x ray, fibrerbroncoscopy and chest and abdominal CT scan.
Our study concerned 5, 63 years mean aged (34-77ans) men. PTA discovery was secondary to respiratory symptoms in 4 cases and fortuitous in 1 case. Amyloïdosis was systemic in 1 case and localized to the thorax in 4 cases: 1 involved pleura, 2 involved mediastinal lymph nodes, 2 the bronchial tree and 2 the lung parenchyma. An association of 2 different thoracic localization was noted in 2 patients. The average time of diagnosis was 4 months, based on open lung biopsy in 2 cases, mediastinal lymph node biopsy in 2 cases and transthoracic lung biopsy in 1 case. Respiratory lung function was normal in 3 patients. Amyloidosis was complicated by chronic respiratory failure in 1 patient and severe obstructive disease in 1 patient. Treatment consisted in colchicin with a stable trend (1 case), systemic corticosteroids with clinical deterioration (2 cases), lung resection (2 cases). One patient disappeared during follow up.
PTA diagnosis is often delayed. This is due in part to the localized feautures of amyloidosis, non specific symptoms and frequent misdiagnosis.

P3605

Tracheobronchopathia osteochondroplastica: End stage of tracheo bronchial amyloidosis

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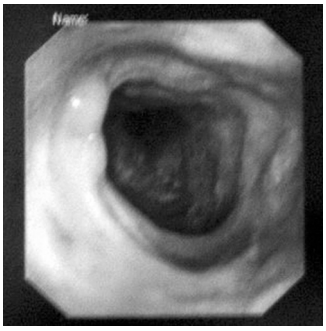
Introduction: Tracheobronchopathia osteochondroplastica (TO) is an uncommon benign disease affecting the cartilaginous wall of large airways. Etiology of TO is unknown, however review of literature reveals an intimate interrelationship between TO and amyloidosis and many authors suggest that TO is an advanced stage of primary tracheobronchial amyloidosis. We describe a case illustrated TO as an end stage of amyloidosis.
Case report: A 47 year old nosmoker woman was admitted in1997 for dyspnea reported since 2 years. Pulmonary function test showed an obstructive pattern. Asthma was suspected but we haven't amelioration of symptoms with appropriate treatment. Fiberoptic bronchoscopic examination revealed infiltration and nodular lesions protruding into the lumen of the lower third portion of trachea and the main bronchi. AA amyloidosis was confirmed by endobronchial biopsy. Extensive investigations leaded to rule out systemic amyloidosis. Recurrent lower respiratory tract infections marked the outcome of our patient treated by antibiotics.Thirteen years after; the patient was admitted for cough, dyspnea, wheezing. Previous treatment with prednisone and inhaled bronchodilatator had no notable response.



Fiberoptic Bronchoscopic examination demonstrated nodular lesions distributed along the cartilaginous rings of lower portion of trachea and the main bronchi. Endobronchial biopsy confirmed the TO.

P3606

Acute cardiomyopathy in rheumatoid associated lung disease

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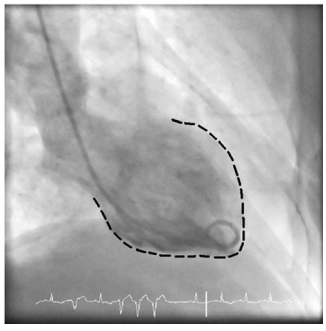
A 67 year old lady with rheumatoid arthritis on prednisolone, methotrexate and hydroxychloroquine was admitted with chest pains, breathlessness and blood stained sputum. She had a history of obliterative bronchiolitis and bronchiectasis secondary to rheumatoid, previously treated with cyclophosphamide and Rituximab immunosuppression.
An ECG at presentation showed T wave inversion in the anteroseptal leads. Subsequent Troponin I was positive. CT pulmonary angiography revealed no evidence of PE. Antiplatelet agents were commenced. Serial ECGs showed dynamic changes



and the patient underwent urgent coronary angiography, which revealed entirely normal coronary arteries but an abnormal left ventriculography.
There was marked LV apical hypokinesis and ballooning. Cardiac MRI supported the suspicion of Takutsubo's cardiomyopathy.
Discussion: Takutsubo's cardiomyopathy is a cause of cardiac chest pain and troponin release, accounting for up to 2% of ST-elevation myocardial infarction (MI). To our knowledge Takutsubo's is undescribed in patients with rheumatoid bronchiolitis obliterans and bronchiectasis. The similarity in presentation to MI and pulmonary embolism creates diagnostic confusion.Whether the lung inflammation associated with rheumatoid confers an additional risk for Takutsubo's remains unknown. This diagnosis therefore warrants consideration as unnecessary anticoagulation and antiplatelet therapies may have dangerous sequelae.

P3607
Multiple pulmonary nodules in a patient with polyarteritis nodosa
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We are reporting the case of a 58-year-old woman, investigated for a 6 weeks history of abdominal pain, nausea, shortness of breath and weight loss of 25 pounds. Her medical history was otherwise insignificant.
Upon presentation, the woman was febrile at 38,5 C, had tachycardia, low blood pressure despite aggressive volume repletion, leukocytosis and acute renal failure. A CT scan of the thorax and abdomen showed multiple nodules within the thyroid gland, the lungs, liver and kidney parenchyma. The patient was put on broad-spectrum antibiotics and anti-fungal medication. BAL (bronchoscopy) and all cultures remained negative. A screen for vasculitis and virus were negative. A liver biopsy showed areas of necrosis due to ischemic insults. Later, the patient developed gastro-intestinal bleeding. An angio-embolization meant to be curative turned out to be diagnostic. We discovered many small aneurysms affecting the mesenteric, hepatic, gastroepiploic and the bleeding site from an ileal branch was succesfully embolized. A vasculitic origin (PAN) to the patient's symptoms was undeniable: unexplained weight loss 4 kg; myalgias; elevated creatinine; characteristic angiographic abnormalities. The patient rapidly recovered with IV steroids and cyclophosphamide.
Polyarteritis nodosa is known to affect multiple organs, but the lung. Very few cases of polyarteritis nodosa involving the lung have been reported. Necropsy reports also described pulmonary fibrosis. Cases of acute interstitial pneumonia, BOOP and alveolar hemorrhage have been described. To our knowledge, it would be the first case of micronodular lung involvement in association to PAN. This case raises awareness to a possible pulmonary involvement in PAN.

P3608
Sarcoidosis patient: Do we need to perform plethysmography when spirometry and DLCO were done?
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Introduction: Plethysmographic measurement of total lung capacity (TLC_{box}) is the gold standard for measuring lung volumes. Gas dilution methods are considered less accurate in patients with substantial airway obstruction and take more time. $DLCO_{sb}$ is usually done in patients suspected of having an interstitial lung disease (ILD) and the test includes measurement of alveolar volume (VA).
Aim of study: To compare TLC_{box} with TLC_{VA} in a large group of sarcoidosis patients in different stages of the disease.
Methods: Data from 830 consecutive sarcoidosis patients (223 in stage I, 486 in stage II, and 121 in stage III). All tests met 2005 ATS/ERS PFT technique and quality guidelines. TLC_{VA} was calculated as the sum of VA and dead space.
Results: TLC_{box} was larger than TLC_{VA} by a mean of 0.18 L (95%CI: 0.15; 0.20) and 2.8% (95%CI: 2.3; 3.3). TLC was normal (above the 5th percentile) in 772 patients (93%) by TLC_{box} and in 762 cases (92%) by TLC_{VA}. Sensitivity of the TLC_{VA} for a low TLC_{box} was 83% and specificity 97%, so NPV was 99% and PPV 71%. The AUC by ROC analysis was 0.90. Airway obstruction was present in only 12% of the patients, but their TLC_{VA} was significantly lower than their TLC_{box} when compared to those without airway obstruction (0.39 L ±0.39 vs. 0.15 L ±0.39). In this subgroup, the sensitivity of TLC_{VA} was only 50% and specificity 96%, so NPV was 98% but PPV only 33%. The differences of TLC_{box} and TLC_{VA} were correlated with FEV1/FVC ratio.
Conclusions: A normal TLC_{VA} rules out a low TLC_{box} with a high degree of certainty in patients with sarcoidosis, but a low TLC_{VA} does not confirm a low TLC_{box} in patients with airway obstruction.

P3609
Adverse drug reactions in a pulmonary teaching hospital: Incidence, pattern, seriousness, and preventability
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Introduction: Detection of adverse drug reactions (ADRs) in hospitals provides an important measure of the burden of drug related morbidity on the healthcare system. Studies have shown that between 1.7% and 25.1% of hospital inpatients experience an ADR during their hospitalization.
Aims: This study aimed to determine the incidence, pattern, seriousness, and preventability of hospital-acquired ADRs, in medical wards of a pulmonary teaching hospital in Iran.
Methods: Clinical pharmacist residents were trained to report all suspected ADRs through ADR-reporting yellow forms. The incidence, pattern, seriousness, and preventability of the reported ADRs were analysed.
Results: During the period of 24 months, for 16125 patients, 312 ADR reports were received. The most frequently reported reactions were due to anti-infective agents (26.54%). Ceftriaxone accounted for the highest number of the reported ADRs among anti-infective agents. The gastro-intestinal system was the most frequently affected system (21.78% of all reactions). Eighteen percent of the ADRs were reported as serious reactions. Fifty of the ADRs were classified as preventable.
Conclusions: Our study shows that ADRs are an important cause of morbidity in our hospital. Disease prevalence and drug use patterns in our hospital differ markedly from those of generalized ones. These differences affect the frequency and nature of ADRs. Preventive measures should be taken to minimize the occurrence of ADRs.

P3610
Importance of cardiac biomarkers in the evaluation of acute pulmonary thromboembolism severity, mortality and complicated clinical course
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Background: Severity of pulmonary thromboembolism (PTE) is related to the determination of early mortality risk rather than distribution and the load of trombus. To determine the risk evaluation biomarkers level have important roles than echocardiography, alternatively.
Aim: Investigation of the effectiveness of biomarkers in the determination of 3 months complicated clinical course (CCC) and mortality, and also acute PTE risk level.
Material and methods: Demographic characteristics, history, clinical findings, risk factors, additional diseases, hemodynamic symptoms of 47 patients (22M, 25F) with objectively documented diagnosis of PTE, were recorded. Before PTE treatment, serum and plasma samples were kept to measure the levels of D-Dimer, cTnT, Mb, NT-ProBNP, HAFBP and GDF-15. Patients were followed for 3 months for complication and mortality.
Results: NT-proBNP levels were similar in submassive and nonmassive groups but they were significantly higher in massive group when compared to other groups ($p<0.05$). GDF-15 levels were significantly higher in massive group when compared to nonmassive group ($p=0.013$). Mortality was present in 9 patients.When all the deaths caused are predicted by D-Dimer, HFABP, NT-proBNP and GDF. Deaths caused by PTE were only predicted by D-Dimer, HFABP and GDF-15 levels. NT-proBNP and GDF 15 valuables were predicted the complications ($p< 0.05$).
Conclusions: This biomarkers used in this study had no significant role in the differentiation of nonmassive and submassive groups. However, NT-proBNP and GDF-15 have been shown that these biomarkers would be beneficial for mortality and CCC, in prediction of 3 months.

P3611
Is utility of D-Dimer test undermined because of overuse in routine clinical practise?
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Introduction: In suspected VTE a low pre-test probability and negative D-Dimer is associated with risk of VTE < 2%. However d-dimer is raised in many conditions and utility depends on VTE prevalence in population tested (9.5-19% in validation studies). Purpose of study was to assess utility of d-dimer testing in routine practise.
Methods: Case records of patients d-dimer tested in A&E or on admission to hospital were reviewed. Data included: clinical features, admission diagnosis and pre-test probability if recorded. Investigators estimated VTE-risk, calculated post-test probability of VTE and impact on imaging
Results: 96 cases included; 52% female, mean (SD) age 61yrs. Symptoms: chest pain 44.5%; leg pain/swelling 28%; dyspnea 17%, syncope 7.5%, other 3%. Admission diagnosis: VTE likely 10%, VTE possible 57%, other diagnosis 33%. Pre-test probability done in 23%. Investigator pre-test VTE-risk: High (H) 9%, Moderate (M) 20%, Low (L) 33%, Very Low (V) 38%. D-dimer positive 43% (H 100%, M 64%, L 44%, V 41%; $p<0.05$). p=0.001. VTE-Imaging if d-dimer +ve (VTE-risk M, L, V): 41% v 11.5% OR 5.1 (1.8-15) p=0.001. Prevalence of VTE was 2.3% (sensitivity 1.0, specificity 0.58; negative likelihood ratio 0.0-1.1).

Pre and post-test probability of VTE if negative d-dimer: VTE-risk M-H pre-8%, post-<1%; VTE-risk V-L pre-<2%, post-<1%.
Conclusion: Prevalence of VTE in patients D-dimer tested in clinical practise is much lower than in validation studies. Both high risk and very low risk patients with alternative diagnoses are often tested. If VTE risk is very low a negative d-dimer test makes little difference to post-test probability of VTE but positive tests lead to unnecessary imaging.

P3612
Are D-dimers requested appropriately in the emergency department? A retrospective audit
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Introduction: Venous thrombo-embolism (VTE) is commonly encountered in the emergency department (ED). Due to the potential severity of a missed diagnosis and the particularly varied presentation of PE, there has been an increasing reliance on D-dimers in the ED. The British Thoracic Society (BTS) suggest this is potentially leading to over-investigation of patients for possible PE (British Thoracic Society. Thorax 2003; 58: 470-484).
Aims and objectives: This audit aimed to establish whether BTS guidelines were followed when D-dimers were requested in the ED, and whether D-dimers were requested appropriately by reviewing indication for the test, co-morbidities and documented end diagnosis.
Methods: A retrospective analysis of patients with positive D-dimers performed in ED or the acute medical unit in January 2010. 147 case notes were reviewed with a view to Well's score documentation; indication for request; further investigation for venous thrombo-embolism; end diagnosis.
Results: Of the 147 patients, 90 had a D-dimer performed for possible PE, 47 for possible DVT. Only two patients had a Well's score documented at any point during their hospital admission. Although 100% patients with D-dimer performed for possible DVT had further investigation, only 51% of patients with a D-dimer requested for possible PE went on to have any further investigation for PE, leading to an end diagnosis of PE in eight. The modal diagnosis in the patients reviewed was pneumonia.
Conclusions: Overuse of D-dimer testing in our ED leads to over-investigation of patients resulting in unnecessary radiation exposure. Guidelines for the use of D-dimer testing together with bedside testing will be implemented.

P3613
Pulmonary embolism due to cardiac hydatid disease: Unusual complication of hydatid cyst
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Hydatid disease represents the most important parasitic infection in Tunisia with annual incidence of 15 per 100000 inhabitant. Neverthless, hydatid pulmonary embolism is an uncommon condition. We report a case of primary cardiac hydatid cyst in which hydatid materials caused recurrent embolizations in pulmonary arteries and pulmonary parenchyma.
Case presentation: A nineteen-year-old girl, was admitted to Charles Nicolle hospital reporting eight months history of anorexia, asthenia and cough.The physical examination results were normal. Chest radiography revealed a convex middle arch and multiple bilateral homogenous circular opacities. Electrocardiographic finding was a right ventricular hypertrophy. Echocardiography showed a cystic mass developed from the lower and the side right ventricular wall, which restrain tricuspid orifice with a 38 mmhg mean PAP. A CT chest-abdominal scan examination revealed the presence of an hypodense cystic lesion of 4 cm in the right ventricle with right pulmonary artery embolism, and multiple bilateral parenchymatous excavated nodule associated to a calcificated cystic lesion in VII segment of the liver. Serologic test results for echinococcus by means of an enzyme-linked immunosorbent assay and an indirect haemagglutination test were positive. Cysts were punctured, aspirated, and resected. Upon discharge from the hospital, patient was prescribed 10mg/kg/day of albendazole.
Conclusion: Hydatid pulmonary embolism is one of the inescapable complication of left heart Echinococcosis. It is rare but serious. There is no consensus of treatment. Early diagnosis is essential because delayed treatment increases the morbidity and mortality rates.

P3614
Safety of out-patient investigations and management of suspected pulmonary embolism (PE)
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Introduction: PE is usually investigated and treated as in-patient but there is growing evidence that significant proportion of patients might be safely managed in the out patient setting with low molecular weight heparin (LMWH).
Aims: To assess compliance and safety of our hospital pathway for out-patient management of suspected PE.
Methods: We studied a prospective cohort of patients with suspected PE managed as outpatients using LMHW from the day of presentation untill either the diagnosis of PE was excluded or confirmed. We analysed patients referred to ambulatory care clinic with suspected PE from June 2009 till June 2010. 42 patients met the inclusion criteria. All patients were reviewed in clinic after a V/Q scan or CTPA.

Table 1. Clinical presentations

Presenting complaint	Total (n=42)	PE diagnosed (n=16)	PE excluded (n=26)
Chest Pain	32 (76%)	13 (81%)	19 (73%)
SOB	26 (62%)	10 (66%)	16 (62%)
Haemoptysis	3 (7%)	1 (6%)	2 (8%)
Leg swelling/pain	11 (26%)	5 (31%)	6 (23%)

Results: 16 (38%) patients were diagnosed with PE. Average time taken for PE to be diagnosed or excluded was 57 hours. There were no deaths or complications recorded from either PE or LMWH. No significant differences in clinical and physiological parameters were noted except for systolic BP (p 0.043).

Table 2. Results

	Total (n=42)	PE diagnosed (n=16)	PE excluded (n=26)	P value
Heart Rate	80	79	82	0.836
Systolic BP	136	130	141	0.043
Diastolic BP	80	81	80	0.717
Respiratory Rate	16	17	16	0.709
SaO2%	97	97	97	0.667
PO2 (kPa)	11.7	10.3	11.8	0.115
PCO2 (kPa)	4.65	4.53	4.78	0.508

Conclusion: Its probably safe to investigate and treat suspected PE as outpatient in selected clinically stable patients. Larger multi-centre randomised controlled trials are needed to confirm this finding.

P3615
Lung function tests in patients suffering from chronic kidney insufficiency before and after hemodialysis
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Most frequently encountered alteration of lung function in patients on hemodialysis is existence of restricted ventilation and consequently insufficiency caused by hypervolemia. Various studies examined changes in lung micro circulation that follow hemodialysis and it is argued that they may cause lung fibrosis and even calcification of alveolar septa. The objective of this study is a comparison of the relative results of pulmonary function tests before and after hemodialysis treatment.
Using Chest-microspiro HI 601 apparatus, we have monitored 35 patients whose average age were 57 years. The diagnostic tools consisted of chest roentgenograms, laboratory tests, clinical examinations and pulmonary function tests (FVC, FEV1 and PEF). Our results indicate a statistically significant increase in FVC ($p < 0,05$) and FEV1 ($p < 0,05$) before and after hemodialysis.
Conclusion: Patients receiving hemodialysis treatment have prominent fluid retention in lung spaces. In this situations spirometry performed before and after hemodialysis can be used as a valid diagnostic approach in determining patients conditions.

P3616
Effect of bicarbonate versus acetate hemodialysis on respiratory functions in chronic renal failure patients
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Dialysis filter can cause activation of complement and release of anaphylatoxines which can have a deteriorating effect on respiratory system.
Aim of the work: To compare the effect of bicarbonate versus acetate haemodialysis on the pulmonary function test and blood gas parameters.
Material and methods: Cross sectional study of fifty chronic renal failure patients on regular haemodialysis without history of chronic pulmonary disease were randomly selected for dialysis either by bicarbonate or acetate dialysate twenty five each with same machine and duration of dialysis. Evaluation thorough medical history and determination of forced expiratory volume in the first second (FEV1), forced vital capacity (FVC), FEV1/FVC ratio, and maximal mid-expiratory flow rate (FEF 25%-75%). Arterial oxygen tension (PaO2), PH, carbon dioxide tensions (PaCO2), bicarbonate (HCO3) and potassium were analyzed with a blood gas analyzer.
Results: No significant difference in symptoms before and after dialysis in both groups. Improvement of pulmonary function test was significant in bicarbonate

group except for FEV1/FVC ratio and PEF. There was significant difference in PaO2, PaCO2 and HCO3 in bicarbonate group.
Conclusion: Bicarbonate haemodialysis lead to significant improvement of respiratory functions in chronic renal failure patients on regular dialysis.

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Pleuro-pulmonary changes in patients suffering from end-stage renal disease receiving regular hemodialysis
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Introduction: End-stage renal disease (ESRD) was defined as a life-threatening reduction in glomerular filtration rate resulting in the requirement for hemodialysis, peritoneal dialysis or renal transplantation to maintain life. Pulmonary complications are an important cause of morbidity and mortality in patients with ESRD and infection is the second leading cause of death among them.
Aim: To study pleuro-pulmonary changes and complications among patients with ESRD maintained on regular hemodialysis.
Patients and methods: The current study included 20 patients with ESRD on regular hemodialysis for at least 6 months. For every patient, clinical, laboratory, arterial blood gases, radiological study of chest and heart and spirometric study were done.
Results: Among the studied patients, 55% had pulmonary complications in the form of pulmonary infections, pleural effusion, pulmonary edema or hypoxemia during the course of hemodialysis. Spirometric measures, before and after hemodialysis, showed no significant improvement of VC, FVC, FEV1/FVC or MMV, whereas improvement in FEF25-75% and PEFR was significant. Significant hypoxemia occurred during hemodialysis. Significant improvement in pH, $paCO_2$ and HCO_3 occurred during and after hemodialysis.
Conclusion: Patients with ESRD treated with hemodialysis must be considered at high risk for the development of lethal pulmonary complications. Regular hemodialysis improves arterial blood gases parameters and some pulmonary function measurements.

P3618
Morphological features of the endobronchial microhemocirculation of nephrological patients
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Pneumofibrosis is one of the respiratory aftereffects developing at late stages of chronic kidney disease (CKD).
The research was aimed at revealing the microhemacirculatory disturbances role in the course of bronchopulmonary aftereffects development for CKD patients.
Methods: The endobronchial biopsy was applied to 48 CKD patients at the point of 1cm distally aside from the right lung's proximal bronchus spur. The ultrathin sections were analyzed, using the Tecnai G2 Spirit TWIN electron microscope (of the "FEI Company" - Netherlands) after its preliminary staining by the uranyl acetate and the lead citrate.
Results: The normal plan of bronchi mucosa structure is revealed in 16,6% of cases, mainly at CKD initial stages. 25,4% of CKD 2nd and 3rd stage patients had epithelium initial planocellular metaplasia, sometimes with the bronchi submucosa connective tissue edema. In 50% of the cases dystrophia and epithelium metaplasia combined with the microcirculatory bed reduction. At the later stages of the disease the number of the elastic fibers increased which surrounded the spasmodic blood capillaries and dilated venules. 19,4% of the patients at the fifth CKD stage showed atrophy of the epithelium against the expressed submucosa sclerotic changes. Here one could observe distinct damages of endothelial cells containing numerous vacuoles in the cytoplasma, sometimes they protruded into the vessel lumen.
The conclusion: Due to various factors the CKD leads to the structural reorganization of the microhemocirculatory bed which then causes the fabric hypoxia, atrophy of the bronchus mucosa and occurrence of the expressed sclerotic processes in the submucosal layer of the bronchial tree.

P3619
Bronchiolitis obliterans as a first manifestation of rheumatoid arthritis – Case report
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Introduction: Rheumatoid arthritis (RA) is the most common connective tissue disease associated with bronchiolitis obliterans (OB). OB is a clinico-pathologic entity of bronchiolar inflammation which reflects the injury of the small airways and presents symptoms and signs of small airways obstruction. OB can go as a first manifestation of RA in 10–20% of patients.
Case presentation: A 37-year-old woman, non-smoker presented to our clinic accusing: MRC III dyspnea and bronchorrhea and suddenly it developed an obstructive lung disease without any reasonable explanation. Clinical, physiological and radiologic features suggested OB (squeaks and crackles on auscultation, functional evidence of OB). HRCT scan features consisted mostly of indirect signs of bronchiolitis, with a mosaic pattern reflecting air trapping, bronchial wall thickening, centrilobular emphysema,areas of ground-glass attenuation.
She also had extra-respiratory symptoms-asthenia and weight loss (5 percent in 2 months).
3 months after, she developed seropositive RA and a elevate serum rheumatoid factor was found, but with no clinical evidence of active rheumatological disease. All of these findings suggests that the OB was secondary to a rheumatoid process. Oral corticosteroids, associated with immunosuppressive treatment and inhaled bronchodilators was initiated, but without any clinical and functional improvement.
Conclusions: This case is atypical since usually the diagnosis of RA precedes respiratory symptoms in 88% of cases. In our patient the bronchiolitis obliterans was the initial manifestation of rheumatoid arthritis, attributable to rheumatoid arthritis.