## 402. Clinical perspectives in several interstitial diseases

**P3740**

**Late-breaking abstract: Pathological analysis of acute exacerbation of idiopathic pulmonary fibrosis (IPF)**

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The patients with IPF show occasionally acute exacerbation in their clinical courses. However the details of pathology of acute exacerbation of IPF are not well investigated.

**Patients and methods:** We studied clinico-pathologically 15 autopsy cases of acute exacerbation of IPF. The clinical symptoms of acute exacerbation were acute respiratory distress syndrome, but multiple organ failure (MOF) was not associated. The intervals of acute exacerbation and death were 3 days to 6 months. The triggers of acute exacerbation were the infection in 3 patients, myocardial infarction in 3 patients, surgical operation in 4 patients, chemotherapy for cancer in 1 patient and unknown in 7 patients. All patients were treated with steroid. Autopsied lung tissues were observed with light microscopy and immunohistochemistry.

**Results:** The lungs of all cases showed pathologically some stage of diffuse alveolar damage (DAD) coincident with the period after acute exacerbation. In 11 cases, several stages of DAD were recognized in the lungs of same patient. DAD is found exclusively in the area without honeycombing. Though 5 cases showed also bud-type intra-alveolar fibrosis, which composed of accumulated myofibroblasts with few vessels and occasionally connected with ring-like DAD fibrosis. We do not interpret these findings as OP, but DAD. In addition to DAD, fibroblastic foci were frequently observed in 9 cases including the walls of honeycombing. The activity of IPF itself was estimated to be high in these patients.
**Conclusion:** The pathological findings of acute exacerbation are DAD, and the several stages of DAD are characteristically observed in the same patient, which are similar to DAD caused by drug injury.

**P3741**
**Interstitial lung disease associated by gemcitabine chemotherapy in non-small lung cancer patients: Analysis based on the data in practical use with confirmed denominator**
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**Background:** Gemcitabine (GEM), which is often used for non-small cell lung cancer (NSCLC), was reported to induce interstitial lung disease (ILD) in Japan. Presently, all-case postmarketing surveillance came to be generally conducted after the launch of new anti-cancer drug to investigate less-frequently but serious adverse drug reactions such as ILD in Japan. However, all-case surveillance had not been conducted for GEM and there is few data of GEM-induced ILD incidence in NSCLC practical use with confirmed denominator.
**Objectives:** To investigate incidence rate, severity and risk factors of ILD in NSCLC patients with GEM chemotherapy in single institute.
**Methods:** We conducted a retrospective observational study of all NSCLC patients who received GEM in our hospital through medical records.
**Results:** 172 patients received chemotherapy for NSCLC with GEM. ILD developed in five (2.9%) among these patients. ILD developed 10 to 80 days after the first administration of GEM. Of the five patients, four patients improved by steroid, whereas one patient died despite steroid therapy. Patient's characteristics reported to be as risk factors of drug-induced ILD, such as age, performance status, and smoking history, concomitant use of anti-cancer drugs, were compared between ILD and non-ILD patients. However, significant differences were not detected.
**Conclusions:** Incidence rate of GEM-associated ILD in NSCLC patients was 2.9% in this study. Most of the patients who developed ILD had a good prognosis but one of them had a fatal outcome. We weigh the difference between our result and previous reports of GEM-associated ILD.

**P3742**
**Lymphoid hyperplasia and eosinophilic pneumonia as histologic manifestations of amiodarone-induced lung toxicity**
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**Background:** Amiodarone use is often limited by lung toxicity. Amiodarone lung disease (ALD) classically manifests as organizing pneumonia with intra-alveolar foamy macrophages, but other patterns may occur. Herein we report two previously unreported patterns of ALD, lymphoid hyperplasia (LH) and eosinophilic pneumonia (EP).
**Method:** We identified patients with LH or EP as a prominent feature among 75 cases of probable ALD from the authors' teaching files collected from 1997-2010. Clinical history and wedge biopsies were reviewed.
**Results:** Twelve patients (7 men) met inclusion criteria. Median age was 71 years. Amiodarone dose was known in 10 cases (median 200mg/d). Treatment duration was known in 8 cases and ranged from 1 to 9 years. Thoracic imaging showed diffuse infiltrates concerning for ALD. Histologic review revealed intra-alveolar foamy macrophages in all cases. Eight cases prominently displayed patterns of LH including diffuse LH (7), follicular bronchiolitis (5), lymphocytic interstitial pneumonia (2), and lymphocytic perivascular cuffing (2). Two showed features of acute EP including diffuse alveolar damage with abundant eosinophils. Two showed features of chronic EP including interstitial pneumonia with abundant eosinophils, patchy organization, fibrinous exudates, and interstitial thickening. One chronic EP case also showed focal LH. Additional features included intra-alveolar giant cells (6), pleuritis (3), small poorly-formed granulomas (3), and thrombi (2).
**Conclusions:** Lymphoid hyperplasia and eosinophilic pneumonia are previously unrecognized histopathologic manifestations of ALD, and amiodarone exposure should be included in their differential diagnosis.

**P3743**
**Could interferon-gamma 1b have a role in treatment of fibrosing NSIP?**
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**Aim:** To detect the effectiveness of Interferon-gamma 1b in patients with fibrotic NSIP.
**Methods:** We reviewed clinical records and pathologic findings of 11 patients with IPF (all males, mean age 54.2±6.3 yrs), who underwent surgical biopsy and were treated with IFN-gamma 1b between 2005 and 2007.
In all patients, before therapy, after 6 and 12 (T2) months of treatment, the following parameters had been measured: lung volumes, DLCO, mPAP estimated at a doppler echocardiography. Biopsy slides were reviewed by two pathologists and reclassified according to the ATS/ERS consensus classification of interstitial pneumonia.
**Results:** 5 out of 11 patients, previously diagnosed as Usual Interstitial Pneumonia, after the revision were identified as fibrotic NSIP. In ]real UIP subgroup, 2 patients died after 6 months of treatment, while all the 5 patients with fNSIP achieved at least 18 months of treatment with IFN gamma. Although the baseline values in NSIP group were better than those of UIP group, no significant difference in baseline lung function was observed between the two cohorts. In NSIP patients FVC (70.16±18,5% at T0 vs 72.4±24,8% at T2, p>0,05), TLC (64.2±8,7% at T0 vs 65.7±14.4% at T2, p>0,05) and DLCOsb (47.3±17.2% at T0 vs 47.8±17.2% at T2, p>0,05) showed a slight improvement trend over time. only the mPAP value showed a significant worsening after 12 months of treatment (27.18±8,7% at T0 vs 41.2±13,3% at T2, p =0,02).
**Conclusion:** In this post-hoc analysis IFN-gamma 1b therapy showed a trend toward reduced disease progression in NSIP patients. The effects on the deterioration of the mPAP values need further investigation through more invasive procedures, such as the right heart catheterization.

**P3744**
**The clinical dynamic changes and prognosis analysis in patients with cryptogenic organizing pneumonia**
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**Background:** Cryptogenic organizing pneumonia (COP) is a common subtype of idiopathic interstitial pneumonia (IIP), which has a multivariate clinical feature.
**Objectives:** To characterize the clinical dynamic changes and to identify predictive factors for relapse of patients with COP.
**Methods:** 73 COP patients were diagnosed in our hospital from Jan 1,1998 to Oct 1, 2009 and followed up until March 31, 2010.
**Results:** 1) 78.5% (57/73) Patients with subacute onset responded well to steroid. Most patients showed significant improvement during the first three months. 2) Consolidation, ground glass opacity and reticular shadow were three most common abnormal patterns on CT scan during the early stage of the disease. Ground glass opacity (GGO) could progress into consolidation, later, in turn, inverted into GGO and then resolved completely after corticosteroid treatment. Consolidation and ground glass opacity showed rapid and significant resolution after the treatment. Reticular shadow resolved slowly. 4) 23.3% (17/73) patients went through relapses. 70.6% (12/17) relapses occurred during the first year after the treatment when the steroid is stopped or tapering (≤10mg/d).
**Conclusions:** 1) COP runs a benign course and shows a significant improvement on pulmonary function test and Chest CT in response to steroids. 2) Relapses occur frequently when steroid is tapered ≤10mg/d or stopped, mostly during the first year. Relapses do not affect the outcome. 3) Deceased diffusing capacity and hypoxemia maybe important predictors of the relapses and tapering too fast may increase the risk of relapse.

**P3745**
**Follow up 1 year of amiodarone pulmonary effects**
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Amiodaron has numerous side-effects and the pulmonary toxicity (PT) is the most serious.
**Aim:** To analyse the theraputic prognosis of amiodaron-indused PT (AIPT).
**Methods:** 14 AIPT patients (mean age 66,0±1,2 yr), received amiodarone (300-400 mg/day) for 47,6±3,5 months due to cardiac arrhythmia, were investigated. X-ray, computer tomography (CT), complex lung function examination, echodopplercardiography were performed. All patients discontinued the amiodarone and received prednisolone (60-20 mg/day) with gradual tapering up to 5-10 mg/day for 6 months. Lung biopsy was done in 2 cases and confirmed interstitial pulmonary fibrosis.
**Results:** AIPT was diagnosed over 2,7 yr after the clinical manifestation. The onset of AIPT was acute in 3, subacute in 8, insidious in 2 cases. The frequency of CT signs were: interstitial - 1,0, nodule - 0,22 and infiltrative or "ground glass" - 0,78. Restrictive type of functional disorders (0,89), pulmonary hypertension 33,7±1,18 mm Hg and cor pulmonale (0,57) were revealed. In 2 cases it was amiodaron-indused thireoiditis. After 1 yr therapy the improvement of clinical (0,83) and CT (0,83) signs, lung functional tests (DLCO, p<0,05; VC, p<0,005; RV, p<0,001; DLCO, p<0.05) were observed. The rapid decrease of prednisolone dose in 2 cases lead to the clinical and CT deterioration.
**Conclusion:** The corticosteroid treatment of AIPT is of therapeutic value and must be prolonged with carefully tapering to avoid the deterioration.

**P3746**

**Combined pulmonary fibrosis and emphysema. Descriptive analysis from a specialized clinic of interstitial lung disease**

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The combination of pulmonary fibrosis and emphysema (CPFE) is a recently defined syndrome characterized with pulmonary fibrosis (PF) and emphysema.
**Aim:** To analyze the clinical, functional, radiological and echocardiographic features in patients with CPFE.
**Method:** Prospective study conducted in a specialized clinic of ILD from 01/01/2007 to 31/12/2010. PF was defined as reticular opacities with peripheral and basal predominance, honeycombing, architectural distortion and/or traction bronchiectasis without ground glass opacities in HRTC and emphysema as the presence of areas of low attenuation with a very thin or no wall and/or bullaes with upper zone predominance.
**Results:** We anlized 20 patients, 90% men; mean age 74 years; 91% were smokers or ex-smokers, 60% had dyspnoea, 75% basal crackles and 25% finger clubbing. The pulmonary function tests are shown in table 1. Pulmonary hypertension was detected in 5 of 10 patients who underwent echocardiography.

Pulmonary function tests in 20 patients

| | Mean | SD |
|---|---|---|
| FEV1/FVC % | 72 | 10 |
| FEV1% pred | 86 | 18 |
| FVC % pred | 90 | 17 |
| TLC % pred | 81 | 17 |
| RV % pred | 88 | 35 |
| RV/TLC % pred | 104 | 24 |
| TLCO % pred | 46 | 20 |
| PaO2 ar rest | 62 | 9 |
| 6 Minute Walking Distance | 435 | 96 |
| SpO2 at exercise | 84 | 8 |

SD: standard deviation; FVC: forced vital capacity; FEV1: forced expiratory volume in one second; TLC: total lung capacity; RV: residual volume; TLCO: transfer factor for carbon monoxide; PaO2: partial pressure of oxigen in arterial blood; Spo2: arterial oxigen saturation.

**Conclusions:** The finding of lung volumes normal o minimally altered in contrast to a severe reduction in TLCO and arterial hypoxemia should alert to the possibility of CPFE. The prevalence of PH in these patients is high.

**P3747**

**The King's sarcoid questionnaire (KSQ): The development of a novel health related quality of life (HRQOL) questionnaire**

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Health related quality of life (HRQOL) is impaired in sarcoidosis. Fatigue, pain, cough, breathlessness, visual disturbance and appearance of skin lesions are common concerns of patients. There is a paucity of validated disease specific tools to assess HRQOL of patients with sarcoidosis. We set out to develop a sarcoidosis specific HRQOL questionnaire. Items were generated from patient interviews (n=23), review of literature and a multi-disciplinary team meeting. A modular questionnaire was recommended because of the multisystem nature of sarcoidosis. A preliminary questionnaire consisted of 65 items and a 7 point Likert response scale. The preliminary King's Sarcoid Questionnaire (KSQ) was tested in 205 patients (184 lung, 55 skin, and 45 eye disease) at two sites (King's College Hospital and the Royal Brompton Hospital). The following items were removed: 1) floor effect >60% of participants responded "rarely" or "never" (8 items), 2) inter-item correlations of r>0.8 (12 items), 3) items that did not fit unidimensional scales following Rasch analysis (11 items). The King's Sarcoid Questionnaire (KSQ) comprises of 5 modules: general QOL (12 items), lung (8 items), medication and side-effects (3 items), skin (4 items) and eyes (7 items). The KSQ is currently undergoing evaluation of test re-test reliability and responsiveness to change.

**P3748**

**Evaluation of the COPD assessment test (CAT) for measuring health-related quality of life in patients with interstitial lung disease**

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There is a need for a short, simple, and well validated instrument to assess health-related quality of life (HRQL) in patients with interstitial lung disease (ILD). The study was conducted to evaluate the validity of the COPD assessment test (CAT), which is a newly developed short and simple questionnaire for COPD with good measurement properties, in ILD.
52 ILD patients completed the CAT and the St. George's Respiratory Questionnaire (SGRQ). The patients also completed the MRC dyspnea scale, the Leicester Cough Questionnaire (LCQ), and the Hospital Anxiety and Depression Scale (HADS) and also underwent a six-minute walk test, pulmonary function tests, and arterial blood gas analysis.
The correlation between the CAT score and the SGRQ total score was very strong ($r=0.93$, $p<0.0001$). The CAT score was also significantly correlated with the SGRQ symptoms score ($r=0.74$, $p<0.0001$), with the SGRQ activity score ($r=0.87$, $p<0.0001$), and with the SGRQ impact score ($r=0.89$, $p<0.0001$). Stepwise multiple regression analysis demonstrated that the MRC score and the LCQ score were the most strongly contributing factors to both the CAT score and the SGRQ total score. The CAT is a short and simple questionnaire for assessing ILD health status with good measurement properties.

**P3749**

**Fungal colonization in interstitial lung diseases**

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**Background:** Many of interstitial lung diasease are tend to impair the immunity, thus patients in this group have a higher risk of fungal diseases. But still little is known regarding the role of fungal colonization in interstitial lung diseases, when fungi are not definite a causative agent.
**Aim:** To investigate the incidence and effects of fungal colonization of lower respiratory tract using PCR of bronchaoalveolar lavage (BAL) specimens among patients with sarcoidosis and extrincsic allergic alveolitis (EAA).
**Materials:** 132 patients with sarcoidosis, and 80 patients with EAA undergo BAL with further PCR test for A. fumigatus and C. albicans using commercial assays. Cytology of BAL, different disease parameters including functional tests, radiology were analyzed.
**Results:** In sarcoidosis patients, Aspergillus was found in 22 cases (16.7%), 14 were males, and Candida detected in 11 cases (8.3%) - 3 were males. Among EAA patients, Aspergillus detected in 13 cases (16.2%), 5 were males, and Candida in 9 (11.3%) cases, 4 were males. In sarcoidosis, Candida colonization was associated with lower FVC (72%), DLCO (64%), and higher neutrophils level in BAL (32%), as also disease duration (112.8 weeks) vs patients without it (92%, 88%, 9% and 38.2 weeks, respectively). In EAA Candida detection was also associated with lower DLCO (58%), 6-minute walk test distance (340 m), higher neutrophils level in BAL (34%), disease duration (107.3 weeks) vs patients without it (72%, 421 m, 12% and 48.7 weeks, respectively). Aspergillus detection altered disease parameters in similar way.
**Conclusion:** Colonization of respiratory tract with fungi in interstitial lung diseases plays a prominent role in deterioration of disease.

**P3750**

**Forced vital capacity decreases rapidly in patients with idiopathic upper lobe-dominant pulmonary fibrosis**

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We present five patients with upper lobe-dominant pulmonary fibrosis of unknown etiology that does not fit any of the currently defined subsets of idiopathic interstitial pneumonias. We describe the clinical, functional, and pathological characteristics of this disorder, which we have provisionally termed idiopathic upper lobe-dominant pulmonary fibrosis (iULPF).
All patients were slender, with a body mass index of 16.0–17.9 kg/m$^2$. Four of the five patients had recurrent pneumothorax. Their pathological characteristics were as follows: 1) upper lobe-dominant subpleural proliferation of elastic fibers associated with deposition of mature collagen in alveolar lumens; 2) isolated fibrotic areas containing alveolar lumens filled with mature collagen were occasionally found in the lung parenchyma distant from the subpleural fibroelastosis; 3) visceral pleura adjacent to the subpleural fibroelastosis were often thickened and contained hyalinized collagen fibers; 4) there was an abrupt transition from subpleural fibrotic areas to less-involved pulmonary parenchyma; and 5) destruction of the lung architecture was minimal and fibroblastic foci were rarely seen. Ventilatory impairment was also characteristic of this condition. The median yearly decline in forced vital capacity in iULPF patients was –20.3% (range, –7.7% to –27.1%), which was more rapid than that reported for chronic fibrosing interstitial pneumonias such as idiopathic pulmonary fibrosis.
iULPF is a unique pulmonary fibrosis that results in rapid deterioration of ventilatory function. It should be differentiated from other idiopathic fibrosing interstitial pneumonias.

**P3751**

**Pulmonary hypertension and right ventricular impairment in patients with interstitial pneumonia**

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There is little date about frequency of pulmonary hypertension (PH) and right ventricular (RV) impairment in patients with idiopathic interstitial pneumonia (IIP). In this work we examined the prevalence PH in these disorders using noninvasive cardiopulmonary evaluation.

40 patients (aged 50,33±2,55) with IIP have been studied in early period after IIP diagnosed. Criteria of exception were the clinical displays heart disease, arterial hypertension. Control group have made 14 normotensive volunteers (aged 47,57±1,86). All patients were studied using realtime, phased array, two-dimensional Doppler echocardiography. The pulmonary artery systolic pressure (SP) was calculated as the sum of the transtricuspid pressure gradient and the right atrial pressure.

**Results:** Pulmonary hypertension (SP>35 mm Hg) is revealed at 15 patients with IIP and SP>40 mm Hg – at 7 (17.5%). Doppler-estimated SP at the patients with IIP exceeded SP at the healthy persons (33,24±1,97 mm Hg and 25,61±1,18 mm Hg, p<0.001). RV hypertrophy was present in 23 (57.5% patients (p<0.001), RV dilation was present in 76,5% patients with IIP (p<0.001). RV diastolic dysfunction was revealed in 65% patients. Right atrial diameter in patients with IIP was significantly higher than at the healthy persons (p<0.001). RV wall in patients with IIP was significantly higher than at the healthy persons (p<0.001). RV diastolic dysfunction we revealed in 56% pts.

We noted correlations between SP and dyspnoe intensity (scale MRS) (r=0,63, p<0,01), VC (r=-0,61, p<0,01), FVC (r=-0,39, p<0,01), FEV1 (-0.38, p<0.01), SaO2 (r=-0,58, p<0,01).

**Conclusion:** Pulmonary hypertension and right ventricular abnormalities is common in patients with IIP.

**P3752**

**Interstitial lung diseases in Europe**

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**Background:** Interstitial lung diseases (ILD) comprise a disomogeneous group of more than 200 pulmonary disorders and are progressive life-threatening diseases. Etiology is unknown in a variety of ILD. ILD are considered rare diseases, nevertheless they constitute 15-20% of all respiratory pathologies as compared to 6-25% of COPD and to 0.8-0.9% of respiratory tumours. Knowledge of epidemiology of ILD would be important to the planning of services for these patients, but so far ILD have not been well characterized.

**Aim:** To quantify the burden of the ILD in Europe.

**Methods:** English articles on ILD epidemiology in Europe were reviewed using PubMed as the search engine.

**Results and conclusions:** In Europe, ILD incidence rates ranged from 3.62 (South of Spain) to 7.6 cases ×100,000 inhabitants (Spain) according to different studies. In the majority of cases a male predominance was found. Among ILD, the most frequent entities were idiopathic pulmonary fibrosis (IPF: 19-39% of all ILD), sarcoidosis (12-35%) and hypersensitivity pneumonia (3-12%). Incidence rates of IPF and sarcoidosis ranged from 0.93 (Greece) to 6.78 cases ×100,000 (UK) and from 1.07 (Greece) to 5.59 ×100,000 (UK), respectively. Median age at diagnosis was about 61 years for IPF and 42 years for sarcoidosis. Fibrotic NSIP was considered as a new subgroup, making up 20-35% of patients previously diagnosed as IPF. Few data exist on the frequency of ILD and discrepancies among different areas have been observed. Differences in part real, but are due to the use of disomogeneous sources (disease registries, selected clinical series, different study designs), to the inclusion of incident or prevalent cases, to variable criteria for diagnosis, or to selection bias.

**P3753**

**Effect of PDE-5 inhibitor treatment in patients with interstitial lung disease and pulmonary hypertension**

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**Background:** Interstitial Lung Diseases (ILD) are often associated with pulmonary hypertension. The aim of our study was to evaluate the therapeutic benefit of phosphodiesterase-5 inhibitors in pulmonary hypertension in patients with ILD and stable pulmonary function tests.

**Methods:** 7 patients (3 female, mean age 54.8±11.2 yrs.) with ILD (vital capacity 52.6±15.9% predicted, n=3 idiopathic pulmonary fibrosis, n=2 chronic hypersensitivity pneumonitis and n=2 sarcoidosis) were treated after right heart catheterization with phosphodiesterase-5 inhibitor (4 sildenafil, 3 tadalafil). We performed a follow up of these patients with a right heart catheterization and obtained 6 minute walk and measurement of brain natriuretic peptide.

**Results:** Right heart catheterization showed impaired pulmonary hemodynamic measurement (PAm 42.1±6.4 mmHg; CI 2.52±0.46 l/min/$m^2$; PVR 537.6±128 dyn·s/$cm^5$). Six minute walk (266.7±146 m) and BNP (228.7±94.7 pg/ml) revealed a severe impairment of the functional status. After treatment with PDE-5 inhibitor (7±3.6 months) there was a significant increase in cardiac index (CI 2.78±0.53 l/min/$m^2$, p<0.05). PAm and PVR improved, but these change were not significant (PAm 37.1±5.99 mmHg, p<0.29, PVR 448.8±156 dyn·s/$cm^5$, p<0.18). BNP and six minute walk showed no significant change (6MW 287.7±39.9 m, p<0.63, BNP 225. ± 148.39 pg/ml).

**Conclusion:** Our data suggest that treatment with PDE-5 inhibitor in ILD and pulmonary hypertension might have potentially therapeutic effects on pulmonary hemodynamics.

**P3754**

**Pulmonary hypertension in patients with interstitial lung disease**

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Pulmonary hypertension (PH) is commonly seen in patients with interstitial lung disease (ILD), and is associated with a worse prognosis. The aim of this study was to determine the prevalence and characteristics of PH in patients with ILD.

Demographic and clinical characteristics, physiological studies, six-minute-walking test (6MWT) and high resolution computed tomography (HRCT) results were prospectively collected, and compared between patients with and without PH. Pulmonary hypertension was defined by right heart catheterization as mean pulmonary artery pressure > or =25 mm Hg and pulmonary artery occlusion pressure < or =15 mm Hg.

The study cohort consisted of 30 patients. The final diagnoses of these patients were idiopatic pulmonary fibrosis (n=15), asbestosis (n=3), chronic sarcoidosis (n=5), chronic hypersensitivity pneumonitis (n=3), and un-classified (n=4). Fourteen patients (46.6%) were found to have PH. The mean pulmonary arterial pressure in PH patients was 32.9±6.8 mm Hg, and 18.2±3.5 mm Hg in non-PH patients (p <0.001). When compared with non-PH subjects, patients with PH exhibited lower six-minute-walk distance (415±41 m vs. 260±95 m, p <0.001). In addition to these, patients with PH had the following clinical characteristics: advanced HRCT fibrosis score, decreased oxygen saturation during 6MWT, and decreased percentage of predicted FVC, percentage of predicted $FEV_1$, and percentage of predicted diffusing capacity for carbon monoxide. Our findings revealed that pulmonary hypertension occurs commonly in ILD. Pulmonary hypertension plays an important and underappreciated role in the functional status of patients with ILD.

**P3755**

**Resting $PaO_2$ and 6MWT as diagnostic index for nocturnal oxygen desaturation in diffuse parenchymal lung diseases**

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**Introduction:** Despite of normal daytime oxygen saturation many patients of diffuse parenchymal lung disease (DPLD) desaturate during night time. Such patients may develop signs of pulmonary arterial hypertension (PAH) which increases the mortality and morbidity in DPLD. Our aim was to document the magnitude of nocturnal oxygen desaturation and find its predictors in DPLD.

**Methods:** It was a cross sectional and observational study. 48 consecutive patients of DPLD were recruited. Idiopathic pulmonary fibrosis (IPF) was diagnosed by ATS/ERS guidelines 2002 and other DPLD by their clinical and radiological presentation. Arterial blood gas analysis, six minute walk test (6MWT) and overnight pulse oximetry were done and variables such as time spent with nocturnal oxygen saturation ($SpO_2$) below 90%, mean $SpO_2$, worst $SpO_2$ and apnea - hypopnea index were recorded.

**Results:** Amongst 48 subjects, 35 (72.9%) patients had IPF, 9 (18.8%) patients had hypersensitivity pneumonitis and 4 (8.3%) patients had stage 4 sarcoidosis. Nocturnal desaturation (>10% of sleep time with $SpO_2$<90%) was observed in 20 (41.7%) subjects. The desaturators were found to have resting daytime $PaO_2$ of less than 61mm of Hg (p=0.0015), end $SpO_2$ after 6MWT ≤83.5% (p=0.0077) and distance walked during 6MWT ≤380.4m (p=0.0051). Based on cut off values of these variables an index called desaturation index was evolved which had 95% sensitivity.

**Conclusion:** Significant nocturnal oxygen desaturation occurs in many patients of DPLD despite of normal resting SpO2. A desaturation index based on $PaO_2$, end $SpO_2$ after 6MWT and distance walked during 6MWT was found to be 95% sensitive in diagnosing nocturnal desaturation.

**P3756**

**Drug induced lung disease: 11 cases**

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Drug induced lung disease (DILD) is the most common cause of iatrogenic damage to the lungs. More than 350 drugs have been identified leading to DILD. We evaluated the characteristics of patients with DILD between 2007-2010, at our institution retrospectively, for demographic features, pulmonary function tests (PFT), diffusion capacities, high resolution computed tomograms (HRCT) findings, diagnostic methods and treatment modalities. 11 patients (M:F=9:2, mean age 60±20.3) were identified with DILD. 3 had chronic myeloid leukemia; congestive heart failure, asthma, testicular cancer, malignant melanoma, acute lymphocytic and myelocytic leukemia, renal transplantation and lung cancer was diagnosed in one patient each. Cough, respiratory failure and fever were the most common symptoms. 4 patients exhibited normal, 5 revealed restrictive, one patient for each revealed obstructive and mixed PFTs. Diffusion capacities in 6 patients were low. Ground glass opacities (2), bilateral patchy consolidation (2), interstitial fibrosis (2), pleural effusion (1) were evident in HRCT, however 1 patient revealed no abnormality. 3 patients underwent bronchoscopy for bronchoalveoler lavage. Infectious causes were excluded by microbiological and laboratory tests. Lung involvement was thought to be due to bleomycine (1), methotrexate (1), cyclophosphamide (1), cisplatin (1), dasatinib (2), Ara-C (2), cilazapril (1), amiodaron (1), tacrolimus (1). Radiological and clinical improvement was achieved with systemic steroids in 10 and cessation of the drug in one. DILD can cause significant mortality and morbidity. We believe that consequence of DILD could be reduced by high degree of suspicion and by excluding other causes for common pulmonary symptoms and abnormal radiographic findings.

**P3757**

**Quadriceps function is reduced in fibrotic idiopathic interstitial pneumonia**

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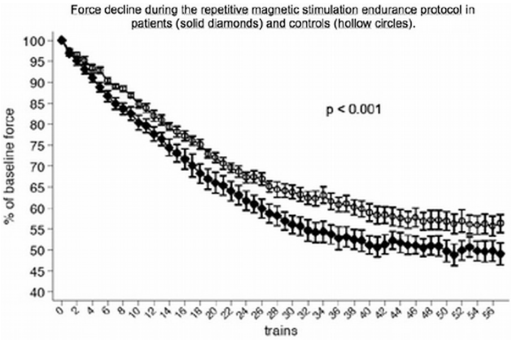
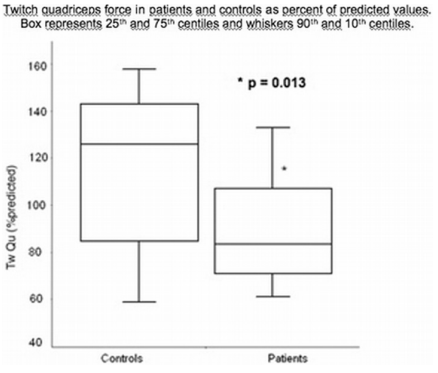
**Introduction:** Little is known about the quadriceps function and its role in exercise capacity in Fibrotic Idiopathic Interstitial Pneumonia, FIIP.

**Methods:** To compare quadriceps function in patients with FIIP and healthy controls and relate it to exercise capacity, 25 patients with FIIP, FVC 78.7% predicted, TLco 40.3% predicted and 25 age-matched healthy controls were studied. Measurements included FFM, respiratory muscle strength, voluntary quadriceps strength (QMVC), twitch quadriceps force (TwQ), an endurance protocol of 5 minutes of repetitive magnetic stimulation of the quadriceps and the 6MWT.




**Results:** Both groups had comparable anthropometrics and respiratory muscle strength. Quadriceps force declined more rapidly in patients in the endurance protocol.

TwQ was lower in patients.

In controls there was a significant relationship between quadriceps endurance and 6MWD (r2 0.40, p=0.016). In patients, stepwise regression analysis left only PaO2 as a significant correlate of 6MWD (r2 0.30, p =0.022)

**Conclusions:** Patients with FIIP have significantly impaired quadriceps strength and endurance. In contrast to controls, quadriceps function is not correlated with 6MWD.

**P3758**

**Assessment of cardiac involvement in patients with sarcoidosis**

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**Background:** Cardiac involvement remains an important prognostic factor in patients with sarcoidosis. However, early diagnosis of cardiac sarcoidosis has been difficult because the clinical manifestations are not specific and the sensitivity and specificity of the diagnostic modalities are limited.

**Methods:** Patients with biopsy proven sarcoidosis were prospectively recruited from the outpatient clinic of sarcoidosis and underwent a full cardiopulmonary monitoring including pulmonary function tests, a 12-lead electrocardiography, echocardiography, a 24-hour ambulatory ECG and cardiac magnetic resonance imaging (MRI) when appropriate. Cardiac involvement was assessed based on known established Japanese Ministry of Health (JMH) criteria and on modified criteria using MRI as a major criterion for cardiac sarcoidosis. All consecutive patients were followed for 5 years for major adverse events.

**Results:** Seventy patients (43 female) were enrolled with median age 49.96±12.83 years old and disease duration 4.44±5.27 years. Cardiac involvement was identified with the modified criteria in 27 patients (38.5%) while 10 (14.3%) patients were found based on the JMH criteria, showing a more than two-fold higher rate for the MRI group (p=0.005). On follow-up, 9 patients had adverse events including 5 cardiac deaths. All patients with cardiac cause of death had cardiac sarcoidosis based on the modified criteria.

**Conclusion:** Evaluation of myocardial involvement in sarcoidosis with the use of MRI as a major criterion appears to be more sensitive than current consensus criteria and associated with future adverse events including cardiac death. Cardiac MRI evaluation may be of great importance in the early diagnosis of cardiac sarcoidosis.

**P3759**

**Prognostic significance of serum markers in acute exacerbation of idiopathic interstitial pneumonias**

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**Introduction:** Acute exacerbation (AE) of idiopathic interstitial pneumonias (IIPs) is a topic for recent years. We have shown that diffuse pattern of high resolution CT (HRCT) at AE of idiopathic pulmonary fibrosis (IPF) is a worse prognostic factor (Akira, AJRCCM 2008). Prognostic significance of serum levels of KL-6 and surfactant protein (SP)-D in AE of IIPs has not been clarified sufficiently.

**Aim:** We examined clinical findings in AE of IIPs retrospectively to clarify the significance of serum KL-6 and SP-D as a prognostic factor.

**Subjects:** Seventy cases of AE of IIPs were diagnosed according to the guideline of Japanese Respiratory Society in 2004 and classified with radiological and/or pathological findings into two groups: IPF (n=55) and non-IPF (n=15).

**Method:** Serum levels of KL-6 and SP-D were compared between 30days survivors and non-survivors. Prognostic factors determining 30days survival was examined by logistic regression analysis among various clinical parameters including serum markers, HRCT patterns at AE (diffuse/non-diffuse).

**Results:** Serum SP-D levels of 30days survivors at AE were significantly less than that of non-survivors, however, there was no difference in serum KL-6 levels. Serum KL-6 of patients with diffuse pattern was significantly lower than that of patients with non-diffuse pattern. Logistic analysis revealed that serum KL-6 at AE, white blood cell counts, immunoglobulin G, gender, complication of diabetes meritus and pre-treatment before AE were significant factors determining 30days survival.

**Conclusions:** Serum KL-6 (>1450U/ml) is a significant worse prognostic factor determining 30 days survival in AE of IIPs.