350. Pulmonary manifestations of systemic diseases

3120 Ventilatory restrictive impairment in thalassemic patients: Gender differences and correlation with hypogonadism and iron overload
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Background and aim: Ventilatory restrictive (RES) impairment has been described in β-thalassemia, but no evidence exists on the causal mechanism. We investigated gender relationships among lung function, iron overload and clinical parameters in a homogeneous series of β-thalassemia major adult patients.

Methods: We studied 79 patients (males M/females F 44/35; age 34.5±6.8 years) with β-thalassemia major on regular transfusion and iron chelation. Iron overload was assessed by serum ferritin, liver iron concentration (LIC) by SQUID susceptibility, cardiac iron by MRI T2*. Lung volumes, diffusion capacity, chelator uptake (1.88), and hypogonadism (H), hypothyroidism and osteoporosis were evaluated in 230 patients (44±12 yrs; 165 females; BMI, 46.7±40 kg/m2) and, and, waist-to-hip-ratio, 0.96±0.1 (OSA) was defined as an apnoea/hypopnoea index (AHI) ≥10.

Results: Before BS, all patients (ERV, 33.4±22%) had spirometry and DLCO within reference values, with normal PaO2 (83±12 mmHg) and PaCO2 (36±3 mmHg) values. One hundred and fifty four (70%) patients had OSA (48%, severe OSA [AHI >30], 66 (43%) with hypoxaemia (PaO2, 70±7 mmHg). Patients with OSA had lower PaO2 and higher PaCO2 than those without OSA (p<0.05 each). Thirty out of 230 patients (13%) without OSA had hypoxaemia (PaO2, 74±7 mmHg), whose FVC, FEV1, VC, IC, ERV and DLCO were lower than those with OSA (p<0.001). After BS, patients had a 76±18% of excess weight loss with overall improvement in lung function (p<0.01 each) while OSA ameliorated in 65% of them. Post-BS ERV (115±22%) and PaO2 (93±10 mmHg) improvements (p<0.01 each) were associated (r, 0.22, p<0.05) while OSA ameliorated in 65% of them. Post-BS ERV (115±37%) and PaO2 (93±10 mmHg) improvements (p<0.01 each) were associated (r, 0.22, p<0.05). Overall PaO2 ameliorated in 65% of them. Post-BS ERV (115±37%) and PaO2 (93±10 mmHg) improvements (p<0.01 each) were associated (r, 0.22, p<0.05).

Conclusions: Hypoxaemia continues to be a common finding in MO, mostly in patients with OSA. However, hypoxaemia can also be present without OSA, possibly related to central obesity. Supported by FIS PI080311, CIBERES, Almirall and Esteve.

3123 Hypoxic challenge assessments in patients with obesity hypoventilation syndrome
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Background: With worldwide increase in obesity and air travel, more obese people are likely to travel by air in future. No prospective studies have investigated the degree of arterial hypoxaemia during a hypoxic challenge test (HCT) in patients with obesity hypoventilation syndrome (OHS).

Objectives: To investigate the likelihood of a positive HCT in patients with OHS.
Patients with tissue hypoxia with unknown origin
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Background: Dyspnoea is common complication in respiratory disease and is mainly caused by hypoxemia due to lung diseases, cardiac diseases or neurologic diseases. Patients with dyspnoea without hypoxemia, hypercapnia and clear abnormal findings considered to have psychological problems. We have found a group of some patients who complain dyspnoea without hypoxemia (normal SpO2 and PaO2) have high venous oxygen level (PvO2). The aim of this study was to investigate the clinical characteristics of patients who have high PvO2 and normal SpO2.

Method: Eight patients have dyspnoea with high PvO2 with normal SpO2 were enrolled in this study. Patients with any other lung diseases or systemic diseases, abnormal chest X-ray finding or elevation of inflammatory markers were also excluded. Arterial and venous blood gas analysis was performed after 10 minutes bed rest. Tissue oxygen levels (PvO2) was calculated using following equation; PaO2-PaCO2/PvO2. Serum lactate and pyruvate level were measured by enzyme assay.

Results: PvO2 in patients enrolled (67.3±12.4 mmHg) was higher than normal range (26-40 mmHg) and PaO2 in patients enrolled was lower (22.0±17.3 mmHg; normal range: 40-70 mmHg) than normal range. Serum lactate(21.6±6.9 mg/dl) and pyruvate(2.1±0.9 mg/dl) were also elevated compared to normal range.

Discussion and conclusion: The group of patients seem to have dyspnoea due to tissue hypoxia. The tissue hypoxia probably raises pyruvate and lactate levels due to activation of anabolic glycolysis. PvO2 measurement and assessment of tissue hypoxia is need for the patients with dyspnoea without hypoxemia. It would be also necessary to explore the cause of tissue hypoxia in the patients.

3127 Lung cancer as a comorbidity in idiopathic pulmonary fibrosis (IPF)
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Introduction: IPF is associated with an increased risk for lung cancer. This might be explained by a contribution of IPF to lung cancer (LC) development or a role of LC in IPF development and/or by shared pathomechanisms causing both IPF and LC. However, data on incidence and reports on treatment related complications are limited.

Methods: In a retrospective monocenter analysis, patients (pts) who were diagnosed between 1/2004-12/2011 with IPF according to the current ATS/ERS guideline were reviewed for the diagnosis of LC.

Results: Of 229 IPF pts, 28 had IPF with LC (12%): 92% male, median age 67 years, median 39.5 pack years, median VC 82% pred. , TLC 81% pred. TLC,SB 35% pred. 75% had NSCLC with stages IA (5%), IB (10%), IIA (29%), IIB (10%), IV (29%), not further specified (17%) 25% had SCLC with 43% limited and 57% extensive disease. Diagnosis was simultaneous in 41%, IPF diagnosis prior to LC in 44% (median delay 36 months) and after LC diagnosis in 15% (median delay 5 months). 7 pts received surgery, 4 chemotherapy, 4 chemo-radiotherapy, 7 radiotherapy and 6 best supportive care for treatment of LC. Complications were common with myocardial infarction in 3 pts after surgery and 1 during chemo-radiotherapy, pneumonia in 6 pts (4 after surgery, 2 during chemotherapy) and radiation pneumonitis in 4 pts. 30 days mortality after surgery was 29%.

Conclusions: LC is a frequent comorbidity in IPF where an interdisciplinary evaluation of therapeutic options is mandatory. However, treatment related complications, especially after surgery are high. Prognosis of operable patients with IPF and LC might be decreased compared to patients either suffering from IPF or with LC alone.