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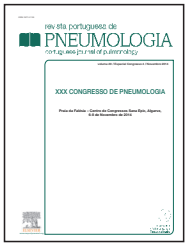

POSTERS

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P001. CHILAIDITI SYNDROME AS A CAUSE OF RESPIRATORY DISTRESS AND CHRONIC RESPIRATORY FAILURE

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Introduction: Chilaiditi syndrome is a rare condition characterized by the interposition of the colon between the right hemidiaphragm and the liver, usually asymptomatic but detectable on a chest X-ray. The most common symptoms are gastrointestinal (abdominal pain, nausea, vomiting, and constipation) and respiratory (dyspnea, orthopnea, thoracic pain) and less frequently, angina-like chest pain. Initial management of Chilaiditi syndrome should be conservative which includes bowel decompression with laxatives and enemas, documented by a follow-up chest/abdominal erect X-ray, and oxygen therapy.
Case report: An 83-years-old male patient, ex-smoker with a 65-pack-year smoking history, retired automobile mechanic with a medical history of ischemic cardiomyopathy with a previous coronary artery bypass graft surgery, heart failure I/IV NYHA, arterial hypertension and dyslipidemia. Hedenied previous illness or respiratory symptomatology. The patient was admitted to the Pulmonology Department in April 2014 with a two-week history of dyspnea, orthopnea, dry cough, pleuritic chest pain on the right hemithorax basis, precordial pain and malleolar edema. Physical examination: Bibasilar crackles, feet edema, with no other abnormality. Complementary exams –Blood tests showed increased D-Dimers 2,972 μg/L (normal range: < 500 μg/L), normal proBNP and normal troponin I. Arterial Blood Gases breathing room air revealed compensated type 2 respiratory Failure (pH: 7.38; pCO_2: 59.2; pO_2: 63.4; $SatO_2$: 91.3%; HCO_3^-: 34). EKG: sinus rhythm, with noabnormalities. Transthoracic echocardiogram: Normal left ventricular function, normal right ventricular size and function, no valvular abnormalities and normal inferior vena cava. The chest X-ray revealed a poor bilateral pulmonary expansion, bilateral elevation of the hemidiaphragms, distended and interposed colonic loop under the right diaphragm. Pulmonary embolism was excluded by a CT pulmonary angiogram that revealed poorly expanded inferior pulmonary lobes, elevation of bothdiaphragmatic domes, especially the right one, and colon interposition between the liver and the diaphragm. Once the X-ray and the CT scan confirmed Chilaiditi Syndrome, a rare but possible cause of the clinical manifestations, laxatives were introduced, with clinical, gasometric (pH: 7.36, pCO_2: 54.2; pO_2: 71.6; HCO_3^-: 29) and radiographic (slightly decrease of the colic distension) improvement. He was discharged and referred to the Pneumology Outpatient Clinic. Pulmonary function tests revealed a mixed obstructive and restrictive ventilatory defect - severe obstruction with no bronchodilator response (FEV_1 pré-BD: 48%; FEV_1/FVC: 68%) and mild restriction (TLC: 74%), consistent with concomitant chronic obstructive pulmonary disease (COPD) and Chilaiditi syndrome. Nocturnal non-invasive ventilation wasintroduced in addition to the regular use of laxatives.
Discussion: Although COPD was also diagnosed, this case allowed to conclude that Chilaiditi syndrome is a rare but possible cause/co-factor of dyspnea, respiratory failure, chest pain/abdominal pain and orthopnea, caused by an increase in intra-abdominal pressure and pulmonary compression.

Key words: *Chilaiditi syndrome. Respiratory distress. Chronic respiratory failure.*

P002. A LIVER THAT TAKES YOUR BREATH AWAY – CASE REPORT

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Case report: Fifty-three smoker female patient (90 pack years), with previous diagnosis of ethanol-induced chronic liver disease with portal hypertension. Admitted to the hospital for progressive exertional dyspnoea during the last six months (mMRC 3/4) and severe hypoxemia (SpO_2 85%).The initial evaluation showed hypoxemia (paO_2 50 mmHg), along with polyglobuly (Hg 16.4 g/dL), increased alveolar-arterial gradient (78 mmHg) and respiratory alkalemia. The respiratory function tests showed pulmonary hyperinflation and moderately reduced diffusing capacity for carbon monoxide (48%), disproportionate to the pulmonary emphysema. The contrast enhanced computed tomography of the thorax was not suggestive of pulmonary embolism. We considered the hypothesis of hepatopulmonary syndrome (HPS). The difference of oxygen tension between dorsal decubitus position and supine posi-

tion was 12 mmHg. Contrast-enhanced transthoracic echocardiography after injection of hand-agitated normal saline did not show intracardiac communication and suggested intrapulmonary vasodilatation (bubbles on left after more than three cycles). This hypothesis was also corroborated by ventilation/perfusion scintigraphy using TC-99m macro aggregated albumin. This exam also revealed changes of pulmonary embolism. The patient was discharged to home with supportive treatment (oxygentherapy). She had current contraindication to liver transplant (active alcohol abuse). We decided to not initiate oral anticoagulation because of spontaneous increased INR.
Discussion: PHS is an important complication in patients with liver cirrhosis and portal hypertension. It is present in about 4-32% of patients. It has a progressive course and constitutes an independent factor ofpoor prognosis. It is defined by increased alveolar arterial gradient (with or without arterial hypoxemia) and intrapulmonary vascular dilatation. At present, liver transplant is the only effective treatment. This is a paradigmatic case of PHS that highlights the need to investigate this syndrome as a cause of hypoxemia in patients with hepatopathy, as its presence is an indication for liver transplant. In this particular case, therapeutic options are very limited, determining a poor short-term prognosis.

***Key words**: Hepatopulmonary syndrome. Hypoxemia. Chronic liver disease.*

P003. PULMONARY ASCARIASIS, A DIAGNOSIS NOT TO BE FORGOTTEN!

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Introduction: *Ascaris lumbricoides*, also known as roundworm, is a parasite that has the man as its host. Generally it lives in hot and wet environments and infection occurs by the ingestion of eggs in contaminated water and food. When they erupt they originate larvae that reach the bloodstream by absorption in the small intestine, developing in the liver until they get to the pulmonary alveoli, where they have the irrigation and the oxygenation needed for its growth. When they reach larger bronchi they migrate to the pharynx and most of them are swallowed. Again in the small intestine they complete their development and initiate the reproductive cycle releasing eggs in faeces. Infection of the body by these parasites often results in specific pathologies known as pulmonary ascariasis, intestinal and extra-intestinal ascariasis.
Case report: Male patient, 66 years old, ex-smoker, without relevant historial, referenced to the Pneumology consultation of Alto Ave Hospital Centre (CHAA) due to suspected lung injury in chest CT dated from December 2009, with no symptoms. CT was repeated in April 2010 overlapping the previous. In the follow up was admitted the diagnosis of bronchiectasis, which motivated treatment with bronchodilators. In July 2010 he made a bronchofibroscopy (BF) which identified colonization by *S. aureus, S. pneumoniae* and *H. influenzae*. After 2 years without infectious complications, he was admitted in Neurology of the São João Hospital (April 2013) due to symptoms compatible with stroke and severe bilateral carotid stenosis. During hospitalization, the patient had a vomica of *Ascaris lumbricoides*. Having completed several exams, chest CT scan showed tracheoesophageal fistula, atelectasis of the middle lobe with obliteration of the respective lobar bronchus, many infiltrations in RLL and LLL, 4 mm calcified granuloma and dispersed micro-nodules suggestive of infectious/inflammatory process. He had clinical discharge referenced to Pulmonology of CHAA and to his Family doctor. Already in CHAA, the patient was submitted to a new BF which confirmed the tracheoesophageal fistula motivating the placement of esophageal prosthesis in July 2014. Since then he presents frank clinical improvement without pulmonary exacerbations.
Discussion: Pulmonary Ascariasis is a rare disease in industrialized countries. With a worldwide prevalence estimated of 25%, has a mortality rate of 0.8-1%. Usually asymptomatic, the pulmonary ascariasis may manifest with signs of pneumonia with non-productive cough, fever, dyspnea and migratory pulmonary infiltrates. The simultaneous occurrence of acute pulmonary eosinophilia may cause a systemic syndrome known as S. Loeffler. In the case described the patient had several episodes of infection and imaging changes, admitted as complications in the context of bronchiectasis. However, looking back the whole clinical picture fits in the diagnosis of pulmonary ascariasis. This case report gives insight into a rare disease and focuses on the importance of the differential diagnosis in patients with recent or uncontrolled pulmonary symptoms, also pointing out the complexity of pulmonary pathology. Please note that this case describes tracheoesophageal fistula associated with infection by *Ascaris lumbricoides*, which was not found in the available literature.

***Key words**: Pulmonary ascariasis.*

P004. COMMUNITY-ACQUIRED PNEUMONIA AND COMPLICATED PARAPNEUMONIC PLEURAL EFFUSION DUE TO METHICILLIN-SENSITIVE *STAPHYLOCOCCUS AUREUS* IN A YOUNG ADULT

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Case report: The authors submit the clinical case of a patient of 36 years old, born in Brazil, resident in S. Tomé e Príncipe, non-smoker, with a personal history of controlled asthma with no inhalers and with a family history of renal cysts. In April 2014 he is admitted at emergency room per condition with one week evolution of fever, productive cough with purulent sputum, pleuritic chest pain on the right side and dyspnea at rest. The patient had arrived at Portugal three days before admission and reported a "flu epidemic" in his country of residence. At the time of observation, there are systemic diastolic hypertension and rales, rhonchi and decreased breath sounds on the right hemithorax. Blood and urine tests revealed hypoxemic respiratory failure, respiratory alkalemia, elevated serum acute phase inflammatory parameters levels (C-reactive protein > 10 mg/dL), acute renal failure, hypoalbuminemia, elevated α-2-globulin fraction in serum protein electrophoresis, microalbuminuria and hematuria. He performed imaging that showed bilateral pleural effusion more pronounced on the right, pleural thickness at that level, condensation and collapse of the lower and medium lobes and lingula, as well as multiple bilateral cortical renal cysts. Sputum and bronchoalveolar lavage examination resulted in the isolation of methicillin-sensitive *Staphylococcus aureus*, and pleural fluid analysis revealed an exudate with negative microbiological examination. The patient showed significant clinical, laboratory and imaging improvement with the antibiotic therapy instituted. Laboratory and imaging findings in conjunction with the clinical features were also strongly suggestive of autosomal dominant polycystic kidney disease.
Discussion: Hypoalbuminemia has been defined as a risk factor for complicated parapneumonic pleural effusion on presentation to hospital with community-acquired pneumonia as well as serum C-reactive protein levels above 10 mg/dL. The definition of risk factors allows the formulation of early action protocols in order to better identify and assist the patients most likely to develop complications associated with community acquired pneumonia, which is why the authors highlight this clinical case.

Key words: *Parapneumonic pleural effusion. Community-acquired pneumonia. risk factors. Polycystic kidney disease.*

P005. UM CASO DE SARCOIDOSE PÓS TUBERCULOSE PULMONAR E GANGLIONAR

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Introduction: Sarcoidosis is a multisystem granulomatous disease of unknown aetiology, characterized by the presence of non caseous granulomas in affected tissues.
Case report: The authors present this case report due to the temporal relationship between diagnosis and treatment of a tuberculosis case and the development of sarcoidosis, suggesting a possible role of *Mycobacterium tuberculosis* as a trigger. The patient is a 36 years old male, non-smoker, gas technician, with a previous history of pulmonary and ganglionar tuberculosis, diagnosed on March of 2011 by mediastinoscopy and bronchoscopy. Ganglionar biopsy histology revealed caseous granulomas and sputum showed BAAR on direct examination and multi-sensitive *Mycobacterium tuberculosis* on cultures. At diagnosis, imaging examination presented a voluminous mass on the right hilum, of 39 mm, adherent to the locoregional structures, namely vascular structures. It presented with multiple adenopathic conglomerates in the pre-tracheal retro-cava region, pre-vascular compartment, bilateral hilum and subcarinal region. It were also visible numerous micronodules bilaterally on pulmonary parenchyma. On April 2011, the patient was started on antibacilar drugs, HRZE for 2 months and HR for 14 months on the continuation phase. After the first month, direct and culture sputum tests were negative and the patient showed significant clinical responsiveness. On April 2012, thorax CT was repeated, showing significant reduction of thehilar mass, although maintaining the remaining alterations. It was performed a ganglionar biopsy by EBUS and a bronchoscopy, without relevant macroscopic alterations. It was also performed a bronchoalveolar lavage (BAL) and a bronchial biopsy in the middle lobe bronchus. Direct and cultural micro and micobacteriological tests of collected samples were negative. Bronchial biopsy showed no evidence of granulomas. The ganglionar punction did not reach the lymph node. BAL revealed lymphocytosis - 66% and a CD4/CD8 ratio of 1.3. On December 2012, after the conclusion of the tuberculosis treatment, another thorax CT was performed, presenting with increased adenopathies, but without improvement of pulmonary parenchyma micronodules. 7 months later, a CT control showed an adenopathic increase and peri-hilar micronodules appearance. On January 2013, bronchoscopy and EBUS were repeated. Bacteriological and micobacteriological tests of all collected samples came back negative. Ganglionar punction did not revealed granulomas, although transbronchial pulmonary biopsy showed pulmonary tissue with epithelioid granulomas without necrosis. BAL presented with a CD4/CD8 ratio of 1.3. On January 2014, a new thoracic CT showed mediastinic and hilar adenopathy growth and increased micronodular extension. The respiratory function was normal. Analytically stands out an ACE of 70. Clinically, the patient currently has no complaints, being medicated with 400 μg inhaled budesonide *bid*. The authors assumed a pulmonary sarcoidosis stage II diagnosis.

Key words: *Sarcoidosis. Tuberculosis. Pulmonary.*

P006. LOEFFLER'S SYNDROME – CLINICAL CASE

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Case report: Female patient, 62 years old, doctor, smoker (smoking history: 16 pack years), with a history of cervical cancer in 2000, hysterectomy and anexectomy. Admitted in Emergency Department with 4 days evolution of dry cough, fever, asthenia and malaise. Relevant laboratory tests showed leukocytosis (12,500), increased CRP (10.2 mg/dL) and urine test with positive nitrites. Empirical antibiotic treatment with amoxicillin/clavulanate was initiated and urine culture was positive for *Klebsiella pneumoniae*. Due to worsening of dyspnea, the arterial blood gas (FiO_2: 21%) performed showed type 1 respiratory failure (PaO_2 60 mmHg) and chest X-ray presented nodular opacities in both lungs. The chest computed tomography (CT scan) had bilateral multiple consolidation, consistent with pneumonic process vs lung metastasis, being clarithromycin associated. Admitted for investigation, the antibiotics were changed to piperacillin/tazobactam, levofloxacin and linezolid. The additional diagnostic tests performed during hospitalization showed: Analytically: peripheral eosinophilia 1,395 (16%); PCR: (6 mg/dL). Negative blood cultures, antigenuria for *Pneumococcus* and *Legionella*. Electrophoresis of proteins with increased α_1. Slight increase of $\beta_2$microglobulin: 2.55 (normal < 2.4). Normal IgG, IgM and IgA. Negative IgE to Aspergillus, Alternaria and Ascaris. Negative ANA, anticitrulin antibody, antineutrophil cytoplasmic antibodies. Normal bronchoscopy, with negative bacteriological, direct mycobacteriological, mycological and galactomanan examination in bronchoalveolar lavage (BAL). Negative parasitological examination of stools. New chest CT scan was performed: "Areas of pulmonary small size consolidations, distributed diffusely. The main diagnostic hypothesis is simple pulmonary eosinophilia (Loeffler's syndrome) considering as alternative diagnostic vasculitis with pulmonary involvement or organizing pneumonia". Due to tests results, it was decided to repeat the bronchoscopy that showed in differential cell count of BAL, eosinophilia (43%) and negative bacteriological and direct mycobacteriological examination. During hospitalization, without additional therapy, the patient had clinical improvement, disappearance of most nodular lesions in imaging reevaluation and analytically decreased peripheral eosinophilia 560 (8%).
Discussion: Loeffler's syndrome is an eosinophilic pneumonia that affects individuals of all ages and usually is self-limited, characterized by the presence of fever, nonproductive cough and dyspnea. Its diagnosis should be considered in the presence of peripheral eosinophilia and bilateral pulmonary infiltrates.

Key words: *Loeffler's syndrome. Eosinophilia. Nodular opacities.*

P007. ORGANIZING PNEUMONIA AS A PIGEON BREEDER´S DISEASE

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Introduction: Bird fancier´s disease usually corresponds to a hypersensitivity pneumonitis, although other respiratory disorders can be found with this kind of exposure namely those with obstructive pattern. Organizing pneumonia (OP), with its several different causes, has been suggested as one of those disorders, even though only a few cases have been described in the literature.
Case report: 71 years old female, non smoker, with history of asthma, dyslipidemia (both not medicated) and osteoporosis (medicated with alendronic acid), with exposure to pigeons (pigeon breeder husband). She reported dyspnea on exertion, dry cough and wheezing, with prescription, one month later, of long acting bronchodilator and amoxicillin-clavulanate. Due to worsening, she visited the emergency department. On admission she was febrile,

with constitutional signs, dyspnea on exertion and spread inspiratory crackles was detected on lung auscultation. Blood gas analysis with PaO_2 of 73.3 mmHg and pulmonary x-ray bilateral infiltrates, especially on the right hemithorax and periphery were observed. She was admitted in the ward with the diagnosis of community acquired pneumonia, medicated with levofloxacin and azithromycin. However, few days later she was admitted to the Intermediate Care Unit because of the progressive clinical, functional and radiological deterioration, and a larger broad-spectrum antibiotic (imipenem) and oseltamivir (suspended after negative research for H1N1) were prescribed. Meanwhile, she did a CT scan which showed diffuse areas of consolidation and also with ground glass appearance, with subpleural predominance. The patient underwent to a transthoracic needle biopsy which features were according with OP. On the study carried out, no cause was found, namely an infectious aetiology that could explain the diagnosis. Precipitins against pigeon droppings were positive, but all the immunology tests, namely autoimmunity was negative. She than initiated corticoids, becoming asymptomatic and a total radiological abnormalities regression was observed. The patient was discharged with the recommendation to avoid contact with birds, maintaining corticosteroids. However, after discharge, the patient resumed contact with birds and, despite the treatment with corticosteroids, she suffered a clinical worsening, functional deterioration and reappearance of bilateral lung infiltrates. She maintains follow up and therapeutic intervention in the ILD outpatient clinic.
Discussion: This clinical case suggests the exposure to birds has the likely cause of this OP, which confirms this entity has one possible form of presentation, although very rare, of disease related with this exposure. On the other hand, bird exposure should be considered in the study of OP.

***Key words**: Organizing pneumonia. Bird exposure.*

P008. IDIOPATHIC CHRONIC EOSINOPHILIC PNEUMONIA: A CASE REPORT

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Introduction: The eosinophilic lung diseases are a heterogeneous group of clinical entities in which there is an increased number of eosinophils in the airways and/or lung parenchyma that may be accompanied by peripheral eosinophilia. A cause-effect relation regarding the presence of eosinophils hasn't been established. Many attempts have been made to create a clinically useful classification system but currently, there is no universally accepted way to classify these disorders. Chronic eosinophilic pneumonia (CEP) is an uncommon disease that occurs mainly in middle aged patients and more commonly in females (2:1). Approximately 90% of patients are non-smokers and 50-60% present with asthma symptoms. The onset of the disorder is insidious, with progressive respiratory and constitutional symptoms, such as cough, dyspnea, fever, night sweats, malaise and weight loss. Extra-pulmonary involvement has been occasionally described. Chest radiograph shows diffuse, peripherally based infiltrates in the outer two thirds of the lung fields in 63% of patients and CT scan will reveal peripheral infiltrates in all afflicted persons. The disease responds quickly and dramatically to corticosteroid therapy and less than 10% of patients will have spontaneous resolution. The prognosis is excellent, but treatment for prolonged periods (3-6 months) is usually necessary. Steroid therapy must be tapered slowly to prevent relapse. If relapse occurs, treatment must be continued for a prolonged period before further attempts to taper. Fatal cases have been reported.
Case report: The authors report a case of a 22-year-old non-smoker man, with history of childhood asthma, with cough, dyspnea, intermittent fever and weight loss of 5-8 Kg, for the past three months. Blood analysis showed significant eosinophilia (7,300 cells/mm^3) and chest X-ray revealed diffuse peripheral infiltrates, confirmed by chest CT scan. The diagnosis was confirmed with bronchoalveolar lavage made by bronchofibroscopy that showed increased eosinophils (66%). Corticosteroid therapy was initiated, with rapid improvement. Despite a slow tapering plan, the patient has had three symptomatic relapses, with infiltrates on CT scan. The authors believe to be in the presence of a corticosteroid-dependent CEP.

***Key words**: Eosinophils. Interstitial lung diseases. Eosinophilic pneumonia. Bronchoalveolar lavage. Corticosteroids.*

P009. PULMONARY ALVEOLAR PROTEINOSIS – A RARE CASE OF ILD

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Introduction: Pulmonary alveolar proteinosis (PAP) is a rare disease characterized by alveolar deposition of lipid-protein surfactant. Three types are known: autoimmune with the presence of autoantibodies GM-CSF and representing 90% of cases in adults; secondary (toxic inhalation or hematological diseases) and genetic (surfactant proteins' encoding genes mutations or GM-CSF receptors).
Case report: The authors present a case of a man, 58 years old, ex-smoker, who worked in granite quarries for 7 years and had contact with chicken. Went to the emergency service for swelling, redness, heat and pain in the right upper extremity associated with fever (38.3 ºC) for the past 2 days. He also referred occasional dry cough in the last month. He denied dyspnea, sputum, hemoptysis, weight loss, anorexia, asthenia, trauma. Physical examination showed signs of cellulite, T. 38 ºC, O_2 sat 98% and normal pulmonary auscultation. The analytical study showed only elevated inflammatory parameters. Musculoskeletal radiography and ultrasound had no signs of fracture, osteomyelitis or abscess. A chest radiograph showed diffuse alveolar opacities mainly in the upper lobes. Blood gas had no changes. The patient was admitted for treatment of cellulites and study of the pulmonary changes. The subsequent analytical study showed improvement of inflammatory parameters, autoimmunity and SACE normal, negative viral markers, serology and negative blood cultures. CT chest revealed multiple ground glass opacities and interlobular septal thickening mainly in the lung apex. Flexible bronchoscopy revealed no morphological changes and the LBA had CD4/CD8 ratio 2.88; 300,000 cells of which 35% lymphocytes. The LBA also revealed *Pneumocystis jirovecii* DNA, having undergone treatment with cotrimoxazole for 21 days. The transbronchial biopsies revealed only inflammation. The patient underwent transthoracic biopsy with the histological study revealing alveolar spaces filled with granular PAS-positive proteinaceous material Pulmonary alveolar proteinosis. Plethysmography and CO diffusion were normal. BAL revealed proteinaceous PAS-positive material. He was referred to the interstitial lung diseases outpatient follow-up awaiting test-running 6 minute walking test, plethysmography and CT.

***Key words**: Pulmonary alveolar proteinosis.*

P010. GRANULOMATOUS PULMONARY INFILTRATES PRECEDING PRIMARY BILIARY CIRRHOSIS

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Introduction: Primary biliary cirrhosis (PBC) is a progressive cholestatic liver disease, characterized by immune-mediated destruction of the small- and medium-sized intrahepatic bile ducts and characterized by strikingmiddle-aged women predominance. PBC figures prominently among primary autoimmune hepatobiliary diseases with pulmonary involvement and has been associated with several patterns of interstitial lung disease (ILD) such as lymphoid interstitial pneumonia (LIP), organizing pneumonia, interstitial fibrosis and granulomatous lung disease, among others. Herein we present a case and a literature review of a male patient who developed granulomatous pulmonary infiltrates, with radiological pattern of OP, and met the diagnostic criteria of PBC later.
Case report: A 47-year-old male, office worker and smoker (23 pack-years), presented with acute onset of nonproductive cough and fever. He was emigrant in South America for 3 years, 10 years ago. Signs or symptoms of connective tissue disease were absent. Chest X-ray revealed bilateral opacities and laboratory tests presented eosinophilia (850/μL), mild elevation of C-reactive protein (7.9 mg/dL) and positive antimitochondrial antibody (AMA). Chest computed tomography showed multifocal bilateral and peripheral areas of consolidation and ground glass, with perilobular pattern and halo sign, suggestive of OP. Cytological analysis of bronchoalveolar lavage (BAL) revealed 10% neutrophils, 3% eosinophils, 35% lymphocytes, 52% macrophages and CD4/CD8 ratio of 1.9. Due to previous history of emigration in South America and eosinophilia, diagnostic hypothesis of chronic pulmonary paragonimiasis was placed but research of *Paragonimus westermani* on BAL was negative. Transbronchial cryobiopsy in the lower right lobewas carried out and histological examination showed poorly formed granulomas occupying terminal bronchioles and alveolar space and interstitial lympho-plasmocitary infiltrate. Pulmonary function test values were within normal range, except DLCO that was slightly decreased (66%). Patient started oral prednisone therapy (40mg/day) and radiological improvement occurred. Two years afterILD diagnosis, and still under prednisolone (10 mg/week), patient was diagnosed with PBC considering biochemical evidence of cholestasis and the presence of AMA, according American Association of Study of Liver Diseases criteria.
Discussion: Sarcoid-like reactions, interstitial fibrosis, LIP and OP are the most common pulmonary complications in PBC. Usually pulmonary disease occurs during PBC evolution. There has been a long discussion about whether pulmonary complications in these patients are a result of hepatic chronic inflammation or could be associated with other autoimmune diseases coexisting with PBC. Serum AMA is widely accepted as the diagnostic hallmark of PBC and found in about 95% of patients, with a very high specificity, and may precede disease onset by several years, which is what happened in this case. PBC overwhelmingly affects females, with a female to male ratio estimated as 10 to 1. ILD preceding CBP in a male, to the best of the present author's knowledge, has not been previously reported. Lung involvement in the course of other organ disorders may appear in various forms and could cause diagnostic difficulties. Respiratory symptoms often precede symptoms of primary condition and chest physicians should always remember about the possibility of a secondary character of a pulmonary disease.

Key words: *Granulomatous pulmonary disease. Organizing pneumonia. Primary biliary cirrhosis.*

P011. ACUTE EOSINOPHILIC PNEUMONIA AS A COLON CARCINOMA PARANEOPLASTIC SYNDROME

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Introduction: Acute eosinophilic pneumonia (AEP) is associated with different etiologies, as several drugs, parasites, fungi, in addition to the idiopathic presentations. It has been described, although rarely, the occurrence of AEP in the context of neoplasia.
Case report: The authors present the case of a 53 year´s old male patient, who worked at a paint factory, smoker (30 pack-year), with hypertension – medicated with angiotensin converting enzyme inhibitor, without any other medical or surgical background. After a month with dry cough, medium efforts dyspnea and constitutional symptoms, with a weight loss of 5 kg, the patient requested a medical evaluation. In terms of the physical examination, only the presence of inspiratory crackles in both lower lungs and a diffusewheezing was noted. On the initial evaluation, leukocytosis with eosinophilia (32%), elevated C-reactive protein (93.9 mg/dL), and hypoxemia (paO_2 64 mmHg) were detected. Thoracic X-ray showed diffuse and heterogeneous infiltrates. Sputum bacteriologic and micobacteriological specimens were negative. The patient was then admitted in the hospital for further examinations. The thoracic HRCT scan showed areas of subpleural ground-glass opacity mainly in the upper lobes, areas of interlobular septal thickening namely at the lower lobes and several mediastinal adenopathies. A bronchoscopy was then performed with bronchoalveolar lavage in which laboratory evaluation detected an intense eosinophilic alveolitis (39%), without isolation of any microorganism or malignant cells; during the procedure, an endobronchial ultrasonography with lymph nodestransbronchial biopsy was also carried out which evaluation detected adenocarcinoma cells. All causes of AEP were excluded, including drugs, inhalation of narcotics, microorganisms or myeloproliferative disease (bone marrow biopsy and peripheral blood immunophenotyping without any relevant disturbance). Meanwhile, an abdominopelvic CT revealed a neoplastic mass at the hepatic angle of the colon, with transmural involvement and in addition several hepatic metastatic lesions were also detected. Despite the beginning of corticotherapy, the patient persisted on clinical deterioration, with respiratory insufficiency and the progression of radiological lesions, namely with the spread of ground-glass opacities and interlobular septal thickening amplification. Moreover, even after the prescription of chemotherapy with FOLFIRI (folinic acid, fluoruracil and irinotecan), the clinical deterioration persisted and death occurred only two months after the diagnosis.
Discussion: This case exemplifies and points out to the possibility of an AEP as paraneoplastic syndrome. Moreover, this particular case was associated with a poor prognosis.

Key words: *Acute eosinophilic pneumonia. Paraneoplastic syndrome. Colon carcinoma.*

P012. LUNG FIBROSIS ASSOCIATED WITH PARASITIC INFESTATION

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Introduction: Ascariasis is a very common helminth infection with a worldwide prevalence of 20-25% and low mortality (0.8 to 1%). The hatched larvae migrate through the intestinal wall, along the portal circulation and eventually become lodged in the lung parenchyma conditioning manifestations of pneumonitis.
Case report: The authors present the case of a 38 year old woman, smoker (18 packs/year), with depressive syndrome treated with duloxetine and gastroesophageal reflux disease with four months complaints of cough and dyspnea on exertion. Physical examination showed bibasilar crackles on auscultation and finger clubbing. Chest X-ray showed diffuse reticular infiltrates and, on CT-scan, extensive areas of ground-glass attenuation and honeycomb pattern. Blood analysis showed increased erythrocyte sedimentation

rate, LDH and negative autoantibodies. Respiratory function tests documented a restrictive ventilatory defect (FVC = 59.3% and DLCOsb = 22.7%). Cytological examination of bronchoalveolar lavage fluid showed an eosinophilic alveolitis (51.24%). Echocardiography showed right cavities dilatation with estimated PASP = 43-48 mmHg. It was assumed secondary eosinophilic pneumonia due to antidepressive therapy. Prednisolone 1 mg/kg was initiated and duloxetine therapy suspended. In the following four months, despite instituted therapy, symptomatic worsening occurred with appearance of diarrhea, which motivated the search for parasites in stool. It was positive for *Ascaris lumbricoides*, thus, confirming the diagnosis of Löeffler's syndrome, and the patient was treated with albendazole maintaining systemic steroid therapy. In spite of this new therapy there was clinical, radiological (reduction of ground glass and increased lung honeycomb), and functional deterioration (18.6% drop in absolute value of FVC and 24.5% in absolute value in DLCOsb, within 9 months), a drop in 6-minute walk test (420m to 345m) and confirmed the absence of further infestation. Surgical lung biopsy was performed and showed morphological features consistent with pulmonary fibrosis /UIP. The patient is currently being weaned from steroid therapy, is on long-term oxygen therapy and waiting to enter on a lung transplant list.
Discussion: In the literature *Ascaris lumbricoides* infestation is responsible for eosinophilic pneumonia which usually responds to steroid therapy. The authors found no reported association between this syndrome and pulmonary fibrosis, so they believe this can be the first case described.

***Key words**: Ascaris. Lung fibrosis.*

P013. HERPETIC TRACHEOBRONCHITIS: A REMARKABLE PRESENTATION OF A RARE DISEASE

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Lower respiratory tract Herpes Simplex Virus infections are rare, and primarily associated with severe immunosuppression, although some cases were reported in immunocompetent individuals. The authors describe the case of a 47 year old man, with immunological compromise conditioned by dissemination of cancer of the larynx and chemotherapy, who was admitted with febrile neutropenia and pneumonia. Despite antibiotic and antifungal therapy, respiratory worsening was observed, so he was submitted to bronchoscopy to bronchial secretion collection, and biopsies of intraluminal lesions. Multiple morphological changes were observed, from the nasal cavity to segmental bronchus, but we highlight the presence of translucent vesicles in a restricted area of the right bronchial tree, which were biopsied. This is an extremely rare finding in non-squamous epithelium, probably related with previously existing squamous metaplasia of the bronchial mucosa. Microbiological study of bronchial secretions has not identified bacterial and fungal agents, but the pathological study of the biopsies revealed characteristic changes of HSV infection, confirmed by immunocytochemical analysis, which identified both HSV 1 and 2. The case we present is distinguished by the rarity of co-infection with HSV-1 and HSV-2, by the extent of lesions in the airway, as well as the typical herpetic vesicular morphology, an extremely rare finding on bronchial mucosa. Given the importance of early therapy in these circumstances, the most typical bronchoscopic findings are decisive in its immediate institution.

***Key words**: Bronchoscopy. Herpes Virus Simplex.*

P014. PULMONARY SIDEROSIS: A CASE REPORT

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Introduction: Pulmonary siderosis is an uncommon pneumoconiosis caused by the inhalation of iron compounds. Patients are usually asymptomatic, with no pulmonary fibrosis and normal functional respiratory tests. We present a rare case of siderosis associated with pulmonary fibrosis.
Case report: Male, 74 years old, married, retired (former welder), ex-smoker since 40 years old (20 UMA).He had hypertension and atrial fibrillation, treated with lisinopril/hydrochlorothiazide, amiodarone and warfarin. No known respiratory disease, no allergies and no contact with animals. Patient was asymptomatic until November 2013, when he was admitted in the emergency room due to productive cough with purulent sputum, dyspnea and fever. On examination, he was polypneic, SpO_2 (FiO_2 = 21%): 89% and had decreased lung sounds in the right hemithorax. He had elevated inflammatory markers and a heterogeneous opacity in the right hemithorax on chest radiograph. The diagnosis of community-acquired pneumonia was assumed and he empirically began amoxicillin/clavulanate and azithromycin with symptomatic and analytical improvement, but no imagiological improvement. He was discharged to our ambulatory clinic. He performed a computed tomography (CT) that showed bilateral ground glass opacities and some fibrotic areas. He stopped amiodarone and he repeated the CT after 1 month, using high-resolution protocol, which showed more extensive ground glass opacities and more fibrotic areas. The patient reported more dyspnea (mMRC 3). He performed a transbronchial biopsy but the histological examination showed no malignant cells or other changes suggestive of a specific diagnosis. Study of lymphocyte populations in bronchoalveolar lavage and peripheral blood showed a high number of NK cells, with no monoclonality. The study of immunity function and autoimmune diseases was normal. Given the progressive worsening of symptoms and CT findings, with unknown etiology, the multidisciplinary team decided to perform a surgical biopsy. Histological examination of the surgical specimen showed areas of peribronchiolar fibrosis and smooth muscle hyperplasia with iron granules (Perls staining). Within these granules rare silica particles were identified. No granulomas. We assumed the diagnosis of pulmonary fibrosis associated with siderosis, probably in the context of the patient's occupational exposure history (welding). Despite being retired, the patient admitted that he maintained contact with the welding occasionally. The importance of eliminating this exposure was explained to the patient. The patient was kept under clinical-imaging surveillance.
Discussion: Pulmonary siderosis usually has a good prognosis. The occupational history of the patient is essential to consider this diagnosis and the treatment is to eliminate the exposure. Although there are few reported cases, pulmonary siderosis may cause pulmonary fibrosis, especially in patients exposed concomitantly to other particles including silica and smoking. The treatment of this group of patients is not yet fully defined.

***Key words**: Pulmonary siderosis. Occupational exposure.*

P015. RECURRENT PNEUMONIA – TYPICAL PRESENTATION OF RARE DISEASES

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Introduction: Bronchial carcinoid tumors are rare neoplasms (1-2% of all lung malignancies in adults; typical carcinoids are about four

times more common than atypical carcinoids). They are the most common primary lung neoplasm of children, typically presenting in late adolescence. The average age of an adult with a typical bronchial carcinoid is 45 years, while individuals with atypical carcinoids are approximately 10 years older. The majority of tumors arise in the proximal airways, and most are symptomatic from bronchial obstruction or bleeding due to hypervascularity. Case-report of an atypical bronchial carcinoid tumor diagnosed in a young woman.
Case report: 23-year-old female student. Past medical history: right ureteropelvic junction syndrome (diagnosed and surgically treated at 11 month-old). *E. coli* acute pyelonephritis (2009). Hyperglycemic profile, controlled with adjusted diet. Two episodes of community-acquired pneumonia (CAP): first in 2011; second in 2013, with positive urinary antigen test for *S. pneumoniae*. Chest CT-scan revealed consolidation of right basal pyramid and middle lobe atelectasis. No smoking habits. No regular medication. No drug allergies. Referred herself to the emergency-room six months after last CAP because of high fever (39.7 ºC) and productive cough with mucopurulent sputum since the previous day. The patient reported dry cough for several months before admission. No other complaints. On physical examination she presented normal respiratory rate, with markedly reduced breath sounds on the lower third of right hemithorax. Arterial blood gas was normal. Blood tests revealed leukocytosis (24.5×10^9/L) with neutrophilia and elevated C-reactive protein (19.3 mg/dL). Urinary antigen test for S. pneumoniae was positive. Chest X-ray showed a homogeneous consolidation affecting right lower lobe with atelectasis. *S. pneumoniae* community-acquired pneumonia with atelectasis was diagnosed and empiric antibiotic therapy (amoxicillin/clavulanic acid and clarithromycin) started. The patient was admitted to the Pneumology department for investigation of recurrent CAP with the same location. Bronchofibroscopy revealed a pearly-white mass in the intermediate bronchus which was biopsied. Only one tissue sample was obtained due to significant bleeding. Pathology revealed a low-grade neuroendocrine tumor (Grade-1). Cytology of bronchoalveolar lavage (BAL) and bronchial brushing was negative for neoplastic cells. All microbiologic examinations were negative (sputum, BAL, blood and urine). Tumor's complete resection via rigid bronchoscopy was unsuccessful due to the mass' size and significant bleeding; it was only partially removed. Post-procedure review showed middle lobe viability but right inferior lobe could not be assessed. A multidisciplinary team decision was made to perform surgical resection- right middle and inferior lobectomy and regional lymph node dissection. Pathology of the removed lobes revealed an atypical bronchial carcinoid tumor without regional lymph node metastatic involvement. Postoperative diagnosis was different from preoperative biopsy. Histologic review of tissue samples confirmed the diagnosis of atypical bronchial carcinoid tumor, NCCN stage grouping I-b (pT2aN0M0). The patient was discharged and is currently monitored in an outpatient setting.
Discussion: Bronchial carcinoid tumors may present as a recurrent postobstructive pneumonia. Albeit rare and difficult to diagnose they should be included in differential diagnosis. Delayed diagnosis often harbors aggressive therapeutic approaches with higher comorbidities, as depicted in this case.

Key words: *Recurrent pneumonia. Atypical bronchial carcinoid tumor. Young adult.*

P016. IGG4-RELATED DISEASE – CASE REPORT

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Introduction: The IgG4 related disease is a multisystemic disorder, of unknown etiology, with an increasing clinical interest. The pulmonary involvement can be presented in multiple ways.
Case report: We report a case of a 65 year-old man, Caucasian, smoker (30 pack-year), with history of major depression, who was referred to the Pulmologyoutpatient consult to study a single pulmonary nodular lesion, located in the left upper lobe, with spiculated margins and 14 mm diameter, without associated adenopathies, identified by computed tomography (CT).The patient was clinically stable, without constitutional or respiratory symptoms. We proceeded with clinical follow-up for 12 months. Due to radiological findings compatible with a neoformative lesion, the patient was proposed to surgical resection of the lung nodule, histological examination and eventual lobectomy – in the same surgical procedure. The histological exam revealed a lymphoid lesion, so we didn't proceed to lobectomy. The surgery and pos-operative time went without complications. Afterwards the final histological report described morphologic characteristics compatible with IgG4-related sclerosing disease. Based on the clinical features it was decided not to start systemic corticotherapy. After 12 months the patient was well, without any new symptoms, abnormal laboratory findings or radiological evidence of new thoracic, abdominal or pelvic lesions.
Discussion: The IgG4-related lung disease is an increasingly recognized disorder, with multiple clinical manifestations that should be part of the differential diagnosis of lung nodules. An early diagnosis can avoid surgical aggressions and its complications.

Key words: *IgG4. Multisystemic disorder. Lung nodule.*

P017. WHAT LURKS BEYOND A LUNG MASS?

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Introduction: Situations where benign lesions simulate malignant lesions are frequent. Whenever a malignant lesion hypothesis arises, the practice of differential diagnosis must be urgent. Pulmonary thromboembolism (PTE) is a relatively common urgency, which diagnosis is sometimes difficult. Signs and symptoms along with routine diagnostic procedures do not allow the exclusion or confirmation of acute PTE but increase the suspicion index. Early diagnosis is critical because prompt treatment is highly effective.
Case report: A 44 year old woman, unemployed, smoking (20 pack per year). With history of fibromyalgia and peripheral venous insufficiency. Referenced from the Diagnostic Pulmonology Center (CPD), where she had been followed due to pulmonary tuberculosis suspicion, to the Pulmonology outpatient, for pleuritic chest pain and a lung mass. On outpatient observation, she reported a "violent" pleuritic chest pain with progressive deterioration, beginning 2 months before observation, associated with asthenia, anorexia and one episode of hemoptysis. The patient also reported a plane flight (duration of 2 hours), 4 months before. From the exams already carried out in the CPD: chest computed tomography scan (CT) showing a condensation area of 4cm with ill-defined margins, juxtapleural, in the right lower lobe and bronchoscopy without observable macroscopic changes (bronchoalveolar lavage negative for neoplastic cells and infection). The physical examination showed no relevant changes. Additional diagnostic procedures (ADP) conducted showed: D-Dimer of 2.64 ug/ml; arterial blood gasometry: normoxemia (87 mmHg) and normocapnia (37 mmHg); chest angio-CT without signs of PTE and with evidence of increased lung mass (45 × 23 mm); transthoracic needle aspiration biopsy with polymorph inflammation with signs of suppuration. Given the clinical worsening, increased lung lesion and the inconclusive result of ACPs performed, the patient underwent a right mini-thora-

cotomy for wedge resection of lung lesion. Histological examination of the lung showed retail pulmonary infarction, leading to PTE diagnosis. The prothrombotic study revealed that the patient was a carrier of heterozygosity in two variants (c.677C > T and 4G MTHFR gene at 675th position of the PAI-1 gene). After discussing with immunohemotherapy, taking into account the study result and disease duration (> 6 months), it was decided only prophylaxis in risk situations.
Discussion: In this case, we present a patient with clinical picture whose differential diagnosis was difficult. The strong suspicion of lung cancer was prevalent. The time from onset made the first assessment difficult (which was very suggestive of PTE) and the ACPs disfavored this diagnosis hypothesis. It was considered pertinent to present this case especially for showing that neither the signs and symptoms, or additional diagnostic tests are completely definitive. High suspicion and gathering all the data should guide clinical diagnosis as early as possible in order to achieve a correct diagnosis.

***Key words**: Lung mass. Pulmonary thromboembolism.*

P018. SECONDARY ORGANIZING PNEUMONIA: 2 CLINICAL CASES

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Introduction: The organizing pneumonia, beside his cryptogenic form, may be associated with connective tissue diseases, drugs, immunodeficiency and acute respiratory infections, among others. The authors present two clinical cases of organizing pneumonia associated with hypogammaglobulinemia.
Case reports: Case 1: women, 35 years old, unemployed seamstress, non-smoker with a personal history of cerebrovascular accident (CVA), gallstones and 2 miscarriages. For pulmonary opacities and cervical lymphadenopathy diagnosed in a prior hospitalization she started consultation of Internal Medicine. A chest computerized tomography (CAT) was performed and showed ground glass opacities, particularly in the lower lobes, with sign of Atol and denser subpleural consolidations in both posterior-medial segments. Bronchofibroscopy with bronchoalveolar lavage showed mycobacteriological, mycobacteriological and cytological normal results; and differential cell populations with mild eosinophilic and neutrophilic alveolitis. She has been subsequently referred to Pulmonology consultation. The immune and cancer blood tests were normal. Transbronchial biopsy showed normal results. Subsequently a CAT guided biopsy was performed and permitted a final diagnosis of organizing pneumonia. There was a primary immunodeficiency response to tetanus vaccine and a late but normal pneumococcal response. After screening for latent tuberculosis, corticosteroid therapy (CT) was started with subsequent gradual dose reduction. After CT dose adjustment, there was recurrence of lung lesions and the dose was increased again. Immunoglobulins (Ig) dosing was requested with a significant deficit of IgG (subclasses 2, 3 and 4). She started immunoglobulin therapy with clinical and radiological improvement and gradual CT dose reduction. Case 2: Woman, 57 year-old, business manager, non-smoker with a history of hypertension, osteoporosis and eczema. She developed mild morning fever associated with nighttime excessive sweating, dry irritating cough and weight loss with 1 month of evolution. She was admitted with a diagnosis of pneumonia and antibiotic therapy was initiated. By unfavorable response and maintenance of complaints after 3 cycles of different antibiotics underwent surgical biopsy that permitted diagnosis of organizing pneumonia. The serological and immunological blood tests were normal. She was referred to Pulmonology consultation and underwent treatment with corticosteroids for a year (started the maintenance dose at 6 months) with no complaints and unchanged TC control. After 12 months of CT she suspended treatment and started symptoms of subfebrile temperature, dry cough and myalgia. Chest CAT showed right lower lobe consolidation. CT treatment was restarted and repeated CAT 3 months later with maintenance of the left lower lobe consolidation and disappearance of the lesion on the right lobe. New assay of immunoglobulins was asked and an IgG deficit was diagnosed. A substitution treatment was started with clinical improvement and no organizing pneumonia recurrence.
Discussion: Organizing pneumonia is an unusual condition and should be considered in the differential diagnosis of patients with radiological images of consolidation. The hypogammaglobulinemia should always be excluded as a cause of secondary organizing pneumonia especially when the corticosteroid therapy is reduced or withdrawal and there are relapses. These cases aim to draw attention to the importance of excluding secondary causes of organizing pneumonia..

***Key words**: Organizing pneumonia. Hypogammaglobulinemia.*

P019. A RARE COMPLICATION OF SPONTANEOUS PNEUMOMEDIASTINUM

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Introduction: Pneumodiastinum means free air in the mediastinum. It is defined as spontaneous pneumomediastinum when there is no apparent cause such as trauma, surgery, procedures or intrathoracic infections. Pneumorrhachis is a rare clinical entity and consists in the presence of intraspinal air. There are different etiologies for this uncommon condition. The main causes can be classified into iatrogenic, traumatic and non-traumatic. Spontaneous pneumomediastinum is usually associated with subcutaneous emphysema and occasionally with pneumothorax, but is rarely complicated with pneumorrhachis. We present a rare case of spontaneous pneumomediastinum secondary to vigorous cough, associated with pneumorrhachis.
Case report: A never-smoker 22-year-old male with no past medical history, presented to the emergency department with chest pain after an acute bout of cough. He complained of severe dry cough for the 5 previous days. There was no history of trauma, asthma, fever or vomiting. On physical examination, cervical emphysema was observed, with crepitus on his neck and both shoulders. His respiratory effort was unlabored, and breath sounds were clear and equal bilaterally on percussion and auscultation. Neurologic exam was unremarkable. A CT scan of neck, chest and abdomen was performed and revealed marked pneumomediastinum and an amount of air in the spinal epidural space at cervical and thoracic levels. No pneumothorax was observed. The patient was admitted for observation and conservative treatment. He was put on bed rest, received oxygen therapy and antitussic drugs to control cough. Over the next 4 days he improved: the subcutaneous emphysema resolved and he became progressively asymptomatic.
Discussion: Spontaneous pneumodiastinum is a condition that is not widely recognized by clinicians and therefore it is important to have a high index of suspicion of this condition, in particular in young patients and specially those who have complaints of chest pain and/or dyspnea. As observed in the described clinical case and in concordance with the literature, conservative management is suggested, because spontaneous pneumomediastinum is usually benign and self-remittent, with or without pneumorrhachis. However, prompt diagnosis and observation remain important in order to avoid potential complications.

***Key words**: Spontaneous pneumomediastinum. Pneumorrhachis.*

P020. CHURG STRAUSS SYNDROME: REPORT OF 2 CASES

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Introduction: Churg-Strauss syndrome (CSS) is a systemic inflammatory disease characterized by asthma, peripheral eosinophilia, necrotizing small-medium vessels vasculitis and extravascular eosinophilic granulomas that can involve various organs and systems.
Case reports: Patient 1. 80 year-old female, with chronic heart failure and a long history of asthma and allergic rhinosinusitis, admitted with asthenia, anorexia, ponderal loss and aggravation of the usual pattern of dyspnoea, accompanied by productive cough with hemoptoic sputum. She was guided and cooperative throughout the physical exam, with hypoesthesia and decrease of muscular strength in her lower limbs. The X-ray showed an infiltrate in the left pulmonary field, which could be seen as several bilateral condensations with ground glass opacities in the computed tomography. Bronchofibroscopy demonstrated hemosiderin deposits in the macrophages. Blood analysis stressed out peripheral eosinophilia, preserved renal function, increased IgE levels and positivity to p-ANCA. The diagnosis of CSS was assumed and the patient began corticotherapy with clinical improvement. Patient 2. 69 year-old female, with asthma, allergic rhinitis and chronic renal disease background, comes to the ER with constitutional symptoms with one month evolution, emphasizing, in the initial analytical evaluation, acute renal lesion with indication for dialysis. Afterwards she developed cough with hemoptoic sputum and respiratory failure. Analytically she showed anaemia, peripheral eosinophilia of 20% and positivity for p-ANCA. It was assumed she had lung-kidney syndrome secondary to vasculitis, having the patient immediately begun corticosteroid pulse, immunosuppressive therapy and plasmapheresis with clinical and analytical stabilization. CT scan showed disperse bilateral ground-glass opacities, sparing the subpleural space. She also did bronchofibroscopy, whose cytological study emphasized 66% of macrophages with hemosiderin deposits and 40% of eosinophils. She didn't do a renal biopsy, due to renal asymmetry seen in echography.
Discussion: The diagnosis of CSS generally depends on histological analysis, although this may not be needed if the patient has eosinophilia and the typical clinical manifestations, attending the diagnosis criteria of the American College of Rheumatology. Clinically significant renal disease is both less frequent and serious in CSS than in other types of vasculitis. CSS is a very rare disease, with an incidence of 1-7 cases per million per year. The disease affects both genders equally and can occur at any age.

Key words: *Churg-Strauss. Asthma. Eosinophilia. Vasculitis.*

P021. LYMPHOCYTIC INTERSTITIAL PNEUMONIA: DIFFERENT PRESENTATIONS OF A RARE ENTITY

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Introduction: The Lymphoid interstitial pneumonia (LIP) is generally associated with a deregulation of the immune system, such as in autoimmune diseases or immunodeficiency disorders, infections and drugs. The idiopathic form is even less frequent currently being classified in the group of rare Idiopathic Interstitial Pneumonias. The clinical course is not completely described and the transformation in lymphoma can occur, apparently with a low probability, although the true association is unknown.
Case reports: Case 1: woman with 33 years old previously healthy referenced to the pulmonology consultation in 2008 by clinical with 2 years of evolution of dry cough and dyspnea on moderate exertion, progressive worsening. On physical examination she was thin, with an overall decrease in breath sounds. Functionally had a moderately severe restrictive syndrome with decreased diffusion capacity for carbon monoxide. In computed tomography (CT) of the chest was evidence of disorganization of the lung interstitium with extensive apical fibrotic areas, mosaic pattern and bronchiectasis. Subsequently underwent surgical lung biopsy revealed histological pattern of LIP. Complementary study was performed with viral serology, immune study, immunoglobulins, serum protein electrophoresis and thyroid function without significant changes. Started immunosuppressive therapy but due to clinical, radiological and functional worsening underwent lung transplant in 2012 and died 7 months later by infectious complications. Case 2: woman with 50 years old, poultry seller, without a medical history of relief. Upon admission to our hospital in 2011 had a history of dry cough and constitutional symptoms at 1 year evolution, sometimes associated with fever. On physical examination had crackles in the right lung base and splenomegaly. A chest radiograph was a hypotransparency in the right base and left retro-cardiac "reinforcement", having performed CT where they were visible pulmonary consolidations at the bases, middle lobe and lingula. Was initially interpreted in infectious context but by persistence of the image complementary study was conducted which stands anemia and hypogammaglobulinemia (IgG and IgA) with thyroid function, immune study, complement and viral serology negative. The functional study showed a mild restrictive ventilatory change. Underwent surgical lung biopsy was consistent with LIP and was treated with corticosteroids. Maintained simultaneously following in the Hematology consultation and was diagnosed common variable immunodeficiency and held regular treatment with immunoglobulin. In 2014 due to the appearance of mediastinal lymphadenopathy underwent EBUS-TBNA showed that nodes with monoclonal population. A few days later she was admitted to intensive care service with symptoms of tumor lysis syndrome and was diagnosed a large B-cell non-Hodgkin lymphoma in the bone marrow with an adverse outcome and death of the patient.
Discussion: The authors present two cases of LIP in women with age at diagnosis similar to that described. The clinical presentation was insidious and nonspecific, radiologically with different patterns and both with a functional restrictive syndrome. In the second case it was possible to find an association with common variable immunodeficiency and likely to lymphoma. Both situations were poor prognosis with death at 3 and 4 years after diagnosis.

Key words: *Lymphoid interstitial pneumonia. Interstitial lung disease. Lymphoma.*

P022. COMORBIDITIES IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS RELATIONSHIP WITH FREQUENCY OF ACUTE EXACERBATIONS AND MORTALITY

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Introduction: Chronic obstructive lung disease (COPD) is often associated with other disorders that confer a worse prognosis regarding quality of life, frequency of acute exacerbations and mortality.
Objective: To determine the prevalence of comorbidities in a population of patients with COPD, and to establish the relationship between overall prevalence of comorbidities, number of exacerbations and mortality.
Methods: Retrospective study of a population of COPD patients characterizing age, gender, smoking habits, severity of dyspnea,

severity of airway obstruction (forced expiratory volume in one second, FEV1), number of exacerbations in the previous year, GOLD stage and prevalence of comorbidities (categorizing patients according to the Charlson comorbidity score). For each patient the three-year mortality risk was assessed using the ADO index. Subsequently we determined the relationship between the prevalence of comorbidities, Charlson index, number of exacerbations in the previous year and mortality risk according to ADO index.
Results: The study included 75 patients (76% male), mean age 69.5 ± 11.6 years and a high prevalence of smoking habits (55%). 76% had dyspnea severity equal to or greater than grade 2 mMRC; and on average, FEV1 was 56 ± 24% of predicted value. 12% were staged as GOLD A; 13.3% as GOLD B; 10.7% as GOLD C and 64% as GOLD D. The mean number of exacerbations in the previous year was 3 ± 2.3; and the average number of severe exacerbations (requiring hospital admission) during the same period was 2 ± 1. The most frequent comorbidities were cardiovascular disease (74.7%); dyslipidemia (42.7%), gastroesophageal reflux disease (32%), and type 2 diabetes mellitus (26.7%). The average number of comorbidities per patient was 4.2 ± 2.8. The average Charlson index was 2 ± 1.6 and 4 ± 2.8 (adjusted for age). The percentage of patients with Charlson index greater than or equal to 3 was 29.3%. The average ADO score was 7.8 ± 2.7. The percentage of patients with ADO score greater than or equal to 7 (3 year mortality of 10%), and greater than or equal to 9 (3 year mortality of 20%) was 76% and 44% respectively. The presence of 2 or more comorbidities was associated with a higher ADO index (8.3 ± 2.3 vs 5.4 ± 3.6 p = 0.009), higher frequency of exacerbations in the past year (3 ± 2 vs 1 ± 0.7 p = 0.009) and higher frequency of severe exacerbations in the same period (1.9 ± 1.5 vs 0.5 ± 0.3 p = 0.003). In patients with Charlson index greater than 3, ADO score tended to be higher than the remaining population (8.5 ± 2 vs 7.5 ± 3 p = 0.09). Patients with Charlson index adjusted for age above 3 had a significantly higher ADO index (8 ± 2 vs 6 ± 3 p = 0.001).
Conclusions: In this population the presence of 2 or more comorbidities was associated with a higher three-year mortality risk and higher frequency of acute exacerbations. Patients with a higher Charlson comorbidity index adjusted for age also had a higher ADO score. These findings highlight the negative impact that a high prevalence of comorbidities confers to the overall prognosis of COPD patients.

***Key words**: Chronic obstructive pulmonary disease. Comorbidities. Mortality.*

P023. TOBACCO ABSTINENCE AFTER HOSPITAL ADMISSION BY CARDIOVASCULAR VS RESPIRATORY EVENTS – INTENSIVE PROGRAM RESULTS

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Introduction: Cardiovascular and respiratory diseases are the leading causes of death worldwide according to the WHO (World Health Organization). Being admitted to a hospital by these reasons is a major event in a life's patient and also an opportunity to treat tobacco dependence. This study has the goal to compare the success of intensive intervention for tobacco abstinence after a major cardiovascular event versus respiratory event that lead to hospital admission.
Methods: Retrospective cohort study. All patients referred to our Consultation to treat tobacco dependence from Cardiology and Pulmonology internments (between 01/2012 and 12/2013) were included. Demographic variables, tobacco habits and dependence rates, cause of internment, prescription of nicotine replacement therapies (NRT) on admission time and at discharge and the success of intensive intervention at 6 months were all evaluated. Statistically, measures of central tendency, t Student, Mann-Whitney and chi-square tests were performed. It was assumed a statistical significance for $p < 0.05$ (software: IBM® SPSS® version 22).
Results: The Pulmonology group (gPn) had 27 patients and the Cardiology group (gCd) 39 patients. The median of ages (years) were in gPn = 56 (22-70) and in gCd = 49 (33-71) (p = 0.2). The gPn had 25.9% females versus 15.4 in gCd (p = 0.29). The main causes of internment in gPn were exacerbated COPD (33.3%) and Community-acquired Pneumonia (22.2%) and in gCd all were admitted because of myocardial infarction. The median admission times (days) were in gPn = 8 (1-18) and in gCd = 4 (3-10) (p < 0.001). The median time (days) internment-first tobacco dependence consultation were in gPn = 18 (6-32) and in gCd = 15 (6-36) (p = 0.8). The mean number of consultations were 3.0 (± 2.2) in gPn and 3.7 (± 3.0) in gCd (p = 0.27). The mean age (years) for the beginning of tobacco consume was in gPn = 17.4 (± 4.5) and in gCd = 15.3 (± 3.2) (p = 0.04). The median number of cigarettes/day was in gPn = 20 (9-40) and in gCd = 20 (10-60) (p = 0.07); median packet-year was in gPn = 44.5 (8-80) and in gCd = 47 (14-120) (p = 0.47). The mean Fagerstrom score was 5 in both groups (p = 0.84). In gPn 66.7% had chronic respiratory disease (mainly asthma or COPD) and in gCd only 7.7% (p < 0.001). In gPn 88.9% of patients were treated with NRT during admission time versus 59% in gCd (p = 0.05); nevertheless only 30% in gPn kept it until the first consultation versus 33% in gCd (p = 0.55); 74% of patients in both groups were in abstinence or with reduced habits at the first consultation (p = 0.51). The success rate at 6 months of intensive intervention was 37% in gPn and 41% in gCd (p = 0.43).
Conclusions: The success rate was not influenced by the major event (cardiac vs respiratory) that led to internment. In spite of larger implementation of NRT during internment in Pulmonology Service, that didn't result in better compliance at the first consultation, nor even in better success rate.

***Key words**: Smoking. Abstinence. Internment. Event. Cardiac. Respiratory.*

P024. THE DEGREE OF ASSOCIATION BETWEEN NICOTINE DEPENDENCE AND MOTIVATION IN POPULATION SEEKING MEDICAL SUPPORT FOR SMOKING CESSATION

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Introduction: Tobacco use is a major preventable cause of death worldwide. Promoting smoking cessation is one of the most significant measures to achieve low prevalence of smokers and is the most cost-effective preventive strategy.
Objective: To characterize the population and assess the degree of association between dependence and motivation of smokers seeking medical support for smoking cessation in Hospital Centre of Bareiro-Montijo.
Methods: A retrospective descriptive study, in which the population in study was constituted by the all patient with first attendance registrations years between 2012 and 2013. The collected of data was carried out through the consultation of registers of clinical processes. Information was gathered regarding the socioeconomic characteristics, smoking history, level of nicotine addiction, degree of motivation, executed treatment. The quantitative variables were presented by absolute frequencies and the measures of central tendency and dispersion. It was used the chi-square test for

the comparison of proportions and T-Student test for numeric variable.
Results: From the 130 smokers who were analysed, 46 were female (35.4%) and 84 were male (64.6%). The median age was 50 years, with the average age group of 40-50 years in both of gender. The 59 (45.4%) of smokers studied exercise a profession. In the sample, 47.7% has secondary education. The average age of onset of regular smoking among females/male was 19.76 ± 7.05 and 18.50 ± 9.86. The average consumption of cigarettes/day among female/male was 20.59 ± 6.26 and 23.60 ± 10.19. There was no significant difference in both genders for the variables in question. The median score of nicotine dependence (6) and Richmond test motivation (7) was moderate and there is no significant gender difference for these two variables ($p > 0.05$). No association was found between the degree of dependency and the degree of motivation for a value of $p > 0.05$. Of the 130 smokers, 105 (87.7%) underwent pharmacological therapy to aid smoking cessation. It was: varenicline 46, 9%; 14.6% bupropion, nicotine replacement therapy (NRT) 19.2%.
Conclusions: There were no significant statistical differences in both of gender the average age of onset of smoking and cigarettes number per day. The association between the degree of nicotine dependence and motivation was not significant at a significance level of 95%. The prescribed therapy in the majority of smokers was varenicline and bupropion.

Key words: *Tobacco. Degree of dependence. Motivation. Smoking cessation.*

P025. INTENSIVE PROGRAM AFTER HOSPITAL ADMISSION - PREDICTIVE FACTORS FOR TOBACCO ABSTINENCE AT 6 MONTHS

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Introduction: It is essential that clinicians consistently identify and document tobacco use status and treat every tobacco user seen in a health care setting. A hospital admission is a single opportunity to treat tobacco dependence. Treating nicotine withdrawal symptoms during admission time enhances the probability of success. The goal of this study is to characterize patients referred to our Consultation to Treat Tobacco Dependence and to evaluate the success of intensive intervention at 6 months.
Methods: Retrospective cohort study. All patients referred to our Consultation to Treat Tobacco Dependence (between 01/2012 to 12/2013) from internment of our hospital services were included. Demographic variables, time and cause of admission, time to the first consultation, smoker's habits, nicotine replacement therapies (NRT) during admission and at first consultation, carbon monoxide determination at first and 6 months (to confirm success) and success of the intensive intervention at 6 months were evaluated. Statistically, measures of central tendency were applied and t Student, Mann-Whiney and chi-square tests were performed. A significance level was determined to $p < 0.05$. The software used was IBM® SPSS® version 22.
Results: Seventy-three patients were included. The mean age was 51.2 years (± 10.3); 79.5% were females (n = 58). The referring services were Pulmonology (37%), Cardiology (53.4%) and Stroke Unit (9.6%). The main cause of admission was myocardial infarction and stroke (64.4%), followed by respiratory causes (particularly exacerbated asthma and COPD and community-acquired pneumonia). Median time of admission was 5 days (min-max = 1-18) and the mean time from admission to the first consultation was 17.3 days (± 7.3). The mean age of initial tobacco use was 16 years (± 3.9), median cigarettes/day was 20 (min-max = 9-60) and mean pack-year was 48.9 (± 26.3). The mean Fagerström score was 5 (± 2). At the first consultation, 67.1% had already quitted and 5.5% had reduced their habits. The mean number of consultations was 3.4 (± 2.6) and the average number of missed appointments was 1.15 (± 0.86). In the group with successful intervention 74.8% had 4 or more consultations vs 25.2% with 3 or less consultations ($p = 0.001$); 68.5% of patients were treated with transdermal NRT during admission but only 30.1% kept it until the first consultation. The abstinence at 6 months was 46.3%. There were no statistical differences between the successful group and the failed group in the studied variables with the exception of the higher mean number of consultations and higher number of patients who stopped to smoke at the first consultation ($p = 0.04$ and $p = 0.01$, respectively). There was a non-statistically significant tendency to higher success rates in patients who kept NRT after admission and until the first consultation.
Conclusions: The intensive intervention and the medications to treat tobacco dependence during admission time are key elements of a successful strategy. The early abstinence is determinant of success at 6 months. The intensive program has encouraging results particularly in smokers with willingness to adhere to the program.

Key words: *Smoking. Abstinence. Internment.*

P026. WORLD NO TOBACCO DAY: SPIROMETRIC ASSESSMENT AND CARBON MONOXIDE (CO) DOSING

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Introduction: Since 1987 we celebrate World No Tobacco Day on May 31st (WHO). Over the years, this day have been conducted several awareness initiatives for smoking cessation and tracing of smoking-related respiratory changes, mainly at hospital level.
Objective: Evaluation of the effects of tobacco and smoking habits on respiratory function of patients and professionals in the Hospital Egas Moniz-CHLO, within the framework of the World No Tobacco Day.
Methods: Questionnaire, spirometric assessment and determination of CO on the exaled air on volunteers. Parameters evaluated: gender, age, patient/hospital employee, past or current smoking habits, degree of nicotine dependence (Fagerström test), spirometric assessment through portable spirometer *Microlab*® 3300 and determination of CO and COHb on the exaled air through *Micro 4 Smokerlyzer*®.
Results: Twenty seven volunteers were evaluated during a period of the World No Tobacco Day, of which 15 were employees of CHLO. Fifty-two per cent were female (18 patients) and 48% male. The average age was 42 ± 12 years (17-65 years). Twenty-three of the volunteers were smokers, and of these about half was hospital staff. Sixty-five percent of the volunteers had lower nicotine dependence, being the 3 with high dependence male. According to determination of CO, 8 were regular smokers, 7 very slight smokers and 3 heavy smokers (> 20 ppm CO), having these smoked the last cigarette less than 1 hour prior to the evaluation. From the volunteers evaluated, 2 had obstructive ventilatory changes (1 slight and serious 1) and 9 had decrease of debts at low volumes.
Conclusions: Despite the sample analyzed to be small, it is noted a growing concern by smokers or ex-smokers in assessing the negative impact that tobacco cause at functional level. However, it is necessary to sensitize more to harm from tobacco, in particular with screening initiatives.

Key words: *World No Tobacco Day. Smoking habits. Spirometry.*

P027. SELF-REPORTED BARRIERS AND FACTORS ASSOCIATED WITH PORTUGUESE PHYSICIANS' BRIEF INTERVENTION ON SMOKING CESSATION – A CONFERENCE-BASED SURVEY

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Introduction: Smoking cessation is among the most cost-effective medical interventions. Physicians should systematically intervene, identifying smokers, and offering cessation advice and support (brief intervention on smoking cessation).
Objective: To assess self-reported barriers and factors associated with Portuguese physicians' brief intervention on smoking cessation.
Methods: In 2009, a conference-based cross-sectional study targeting GPs and hospital-based physicians was carried out. Self-administered questionnaires were delivered and collected during two main national medical conferences. Systematic sampling and consecutive sampling were performed. Descriptive and inferential analysis using chi-square, McNemar and Mann-Whitney tests, and multiple logistic regression (MLR) were performed.
Results: Response rate was 64%. Of the 549 participants, 61.9% were female and 64.3% were GPs; mean age was 40.5 ± 12.6 years (24-70). Physicians reported the following frequencies: 1) ask about smoking (83.5%; 95%CI: 80.4-86.6); 2) Advise to quit (85.6%; 95%CI: 82.7-88.5); 3) motivate to quit (67.2%; 95%CI: 63.3-71.1); 4) refer to a cessation programme (38.3%; 95%CI: 34.2-42.4), $p < 0.001$. Brief intervention combined steps frequency was 30.5%, $p < 0.001$. MLR showed that factors associated with consistent brief intervention were the following: reporting clinical practice in a cessation programme (aOR = 3.41; 95%CI: 1.58-7.34, $p = 0.002$); reporting graduate training in smoking prevention/treatment (aOR = 1.71; 95%CI: 1.15-2.53, $p = 0.008$); being a female (aOR = 1.98; 95%CI: 1.31-3.0 $p = 0.001$) and being older than 45 (aOR = 1.71; 95%CI: 1.16-2.53, $p = 0.007$). The most important barrier to cessation care identified by physicians was intervening in non-motivated smokers (51.7%), followed by time constraints (28.1%), poor cessation training (27.6%) and poor rate on smoking cessation efficacy (17.1%), $p < 0.001$.
Conclusions: The findings suggest that effective smoking cessation brief intervention is poorly implemented in healthcare. This underscores the need for evidence-based and comprehensive cessation training programs and effective systems-approach in order to promote smoking cessation implementation. Training programs should include motivational interview and practice in a cessation programme.

Key words: *Smoking cessation. Brief intervention. Physicians.*

P028. SMOKING CESSATION AND VARENICLINE

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During the period from January 1st 2008 to December 31st 2013, 456 smokers were observed to start smoking cessation program. The aim of this study was to evaluate smoking cessation in smokers treated with varenicline. This drug is approved for smoking cessation and available in Portugal since March 2007. Varenicline is a partial agonist at the alpha-4 beta-2 subunit of the nicotinic acetylcholine receptor, the receptor that appears to produce the reinforcing effects of nicotine and leads to nicotine dependence. This reduces the urge to smoke, withdrawal symptoms, and the sense of satisfaction associated with smoke inhalation cigarette. Of the 456 smokers attended, 97 (21.3%) were treated with varenicline. Varenicline was prescribed, with no association to another drug, in patients with no history of psychiatric or those with disease after evaluation. This therapy was started approximately one week before the day set by the patient for smoking cessation, with duration of 12 weeks. Of the 97 smokers, 44 (45.3%) were female and 53 patients (54.6%) were male. Mean age was 49 years (minimum 23 years - maximum 73 years) and mean smoking history of these patients was 46 units pack a year. Test Fagerström nicotine dependence showed high dependence in 21 patients (21.6%), medium dependence in 71 (73.2%) and low dependence in 5 patients (5.2%). Motivation, assessed by questionnaire Richmond, was low in 42 patients (43.3%), intermediate in 49 (50.5%) and high in 6 patients (6.2%). The most reported side effects were insomnia, nightmares and alteration of bowel habits in about 30% of smokers. There was no need to discontinue therapy in any patient for this reason. According to the literature, Varenicline can be associated with suicidal ideation and was not documented in our study no record of this. In regard to smoking cessation it was observed that 13 (13.4%) did not smoke for more than twelve months, 12 (12.4%) for more than six months and 13 (13.4%) for more than three months. Continue to smoke 21 cases (21.6%), and of these only 7 maintains follow-up consultation. Remaining patients have duration of less than 3 months of smoking cessation. Results of this study seem encouraging in smoking cessation. It should, however, be disregarded described side effects, so that an accurate selection of patients must be made for starting this treatment.

Key words: *Varenicline. Smoking.*

P029. CLINICAL, FUNCTIONAL AND PROFILE OF SENSITIVITY IMPACT OF INHALED ANTIBIOTICS

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Introduction: Chronic infection by gram-negative agents is associated with progressive deterioration of lung function and clinical worsening of patients with respiratory disease. Inhaled antibiotics have been effectively administered with safety and efficacy in these patients, particular in cystic fibrosis, bronchiectasis and in the prevention and treatment of patients with pneumonia, with promising results.
Objective: Evaluate the efficacy and safety of inhaled antibiotics, as continued and support therapy, for patients with respiratory disease, chronically colonized with *Pseudomonas aeruginosa*. Determine if the administration of antimicrobials in the respiratory tract was associated with clinical and functional improvement in these patients.
Methods: The demographic and clinical characteristics of patients that are using inhaled antibiotics during 2013 were analyzed, as well as the functional differences and the sensitivity profile in the 6 months before and after initiation of inhaled therapy.
Results: A total of 33 patients were on inhaled antibiotics during the year 2013, 54.5% (n = 18) were male and 45.5% (n = 15) female, with a median age of 35 years (25-54 years). Of these patients, 54.5% (n = 18) had cystic fibrosis, 24.2% (n = 8) bronchiectasis, 12.1% (n = 4) were transplanted lung, 6.1% (n = 2) diffuse pulmonary disease and 3% (n = 1) had amyotrophic lateral sclerosis. Inhaled colistin was prescribed in 54.5% (n = 18) of patients, tobramycin in 42.4% (n = 14) and aztreonam in one patient. Overlapping was found in the pre-and post-treatment functional assessment

(FEV1 45.9 ± 19.6% vs 47.2 ± 20.7%, p = 0.43; FVC 68.8 ± 20.4% vs 69 4 ± 21.5%, p = 0.75, 56.1 ± 15.3% IT vs 55.7 ± 14.9%, p = 0.71). Significant clinical improvement was observed, with a reduction in the number of exacerbations and hospitalizations, 6 months after the start of inhaled antibiotic therapy (number of exacerbations: 1.94 ± 0.9 vs 0.82 ± 0.6, p < 0.001, n º admissions: 1.03 ± 1.5 vs 0.45 ± 0.8, p = 0.002). Regarding the tolerance of the prescribed antibiotic, 84.8% (n = 28) of patients didn't experienced any side effects associated with the drug; however, 5 patients (15.2%) required its suspension due to headache, upper abdominal pain and oral clefts. All antibiotics prescribed regimens produced a reduction in sputum volume and there was no development of highly resistant strains throughout the study.
Discussion: Inhaled antimicrobial therapy is an alternative to systemic administration because it is associated with the capacity to achieve high concentrations of antimicrobials in sputum and in the bronchial and pulmonary tissue; as well as to reach minimum inhibitory concentrations at lower dosages when compared with intravenous formulations. The present study showed the benefit of inhaled antibiotics, in maintenance regime, to reduce the number of admissions and exacerbations in patients with colonization by *Pseudomonas aeruginosa*, without development of resistant strains and, in most patients, without side effects.

Key words: *Inhaled antibiotics.*

P030. ASSOCIATION BETWEEN ALPHA 1 ANTITRYPSIN AND BRONCHIECTASIS

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Introduction and objective: Alpha 1 antitrypsin deficiency (A1ATD) as an etiology for bronchiectasis has been a target for discussion for many years. Several cases have been described but large studies are scarce. The presence of bronchiectasis in these patients is relatively common. One of the explanations for this is that the evolution of emphysema associated with chronic bronchitis results in the appearance of an architectural distortion of the airways. However, there are cases of patients with A1ATD and bronchiectasis, in the absence of emphysema which points to relation between the two entities. The objective of this study is to characterize a group of patients with A1ATD and bronchiectasis and try to establish a cause-effect relation between the two.
Methods: Within a total of 108 patients with A1ATD followed in the outpatient department of Pneumology between the years 2012 and 2014, we selected patients that presented bronchiectasis with imagiological evidence on the Computer Tomography. Several clinical and analytical parameters were assessed. The international clinical severity of bronchiectasis classification - *Bronchiectasis Severity Index* (BSI) was used.
Results: 24 patients met the inclusion criteria, with an equal gender distribution (Men: 46%; Women: 54%), median age of 59.6 years. Majority of the patients were non-smokers (58.3%). Considering the measured value of alpha 1 antitrypsin at the diagnosis the sample is heterogenous, with a mean value of 63 mg/dl. In terms of phenotype distribution, the ZZ is the most prevalent (37.5%), followed by SZ and MZ (both with 20.8%), MS (16.7%) and IZ (just one case, 4.2%). Pulmonary emphysema was present in half of the patients (panlobular in 41.7% of this cases and difuse in 50%). In respect of bronchiectasis characteristics, these were in their majority bilateral (70.8%) and with the involvement of 2 pulmonary lobes (45.8%). In 25% of the cases, the patients presented post-infectious sequels as a possible alternative cause for the presence of bronchiectasis. Using the BSI, most of the patients showed mild bronchiectasis (54.2%), with a minority of severe cases (16.7%). A correlation between the severity of both the A1ATD and the bronchiectasis was shown, with a preponderance of the phenotype ZZ (100%; n = 4) within the group with most severe cases. When accessing the patients with phenotype ZZ *versus* all the other phenotypes concerning the BSI, a positive and statistically significant association (p < 0.05) was made. The patients ZZ presented also a higher rate of infectious exacerbations, hospital admissions and colonization by *Pseudomonas aeruginosa*. The clinical severity illustrated by the BSI seems to be independent of the emphysema´s presence.
Conclusions: This study appears to show an association between A1ATD and bronchiectasis, independent of the presence of emphysema. This link could be important not only in terms of diagnosis but also concerning a therapeutic strategy. More studies are necessary however, with a larger number of patients, in order to establish with more accuracy this bond between the two entities.

Key words: *Alpha 1 antitrypsin deficiency. Bronchiectasis.*

P031. SINGING AS AN INTEGRAL COMPONENT OF RESPIRATORY REHABILITATION PROGRAMS

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Introduction: Recently the singing has been subject of few preliminary studies as a possible adjunct activity to the Respiratory Rehabilitation Programs (RRP), in order to optimize results in functional capacity and quality of life for respiratory patients.
Objective: To evaluate the benefit of singing classes, as component of RRP, in functional capacity and quality of life of patients with chronic respiratory disease.
Methods: Selected clinically stable chronic respiratory patients with, at least, 6 weeks of RR performed. Integration of the patients in a 24 singing classes plan (1h/week). Assessment of health status/symptoms (CAT, mMRC), quality of life (SGRQ and EuroQol), anxiety-depression (HADS), impact on activities of daily living, ADL's (LCADL) and functional capacity (respiratory function tests, maximum pressure (MP) and 6MWT) performed at baseline and after completion of, at least, 10 sessions. Assessment of overall satisfaction with a final survey.
Results: Were selected 19 patients, 10 patients were excluded for excessive absences, being the most frequent justification the exacerbations of the underlying disease. Included 9 patients, 67% men (n = 6) and the mean age was 65 years. Distribution of patients by pathology: Severe Asthma (3), COPD D (3), COPD B (2) and bronchiectasis (1). Five patients were former smokers and 4 never smokers. The patients participated on average in 17 sessions and were evaluated between 10th and 15th session. The evaluation of the questionnaires showed respect to health status/symptoms with a mean improvement of 1 point in the questionnaire CAT (19 vs 20) and maintenance of the mean value of 2 in mMRC; the state of depression improved with a mean of 1 point in the HADS (6 vs 5) and the anxiety component maintained with a mean value of 8; ADL`s improvement with a mean of 2 points (26 vs 24) in LCADL; SGRQ slight improved with a mean of 2 points (36 vs 34) and the EuroQol maintained the mean value of 10. Functionally, the value of FEV1 and FEV1/FVC worsened on average respectively 60% to 57% and from 59% to 56%, but the average RV improved 153% to 148%. The inspiratory and expiratory MP increased respectively from 68 to 74% and from 89 to 104%. The mean distance of the 6MWT increased from 400m to 413m, verifying a minimum clinically important difference (26m) in 5 patients (56%). The analysis of the satisfaction survey revealed that all patients described the singing lessons as a positive, enjoyable experience, with benefit in improving fatigue, dyspnea, respiratory control, self-esteem and anxiety. All patients asked for the continuation of singing lessons.

Conclusions: Although the sample size does not allow to obtain statistically significant results, in this study the positive impact of the singing in the quality of life of patients was notorious and therefore singing should be considered as a component of respiratory rehabilitation plans.

Key words: *Singing. Respiratory rehabilitation.*

P032. PULMONARY REHABILITATION AND THE PATIENT'S PERCEPTION

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Introduction: International pulmonary rehabilitation (PR) guidelines state that PR is a multifactorial intervention and that it should be individualized for each patient. Adherence and success of PR depend on the individual's perception of their health and quality of life improvement.
Objective: To evaluate the perception of patients with chronic respiratory disease on their potential outcomes of pulmonary rehabilitation.
Methods: A cross-sectional study was conducted in patients with chronic respiratory disease who underwent at least one program of PR during the last year. Demographic and clinical data were collected. Based on the scheme of COPD Assessment Test questionnaire, we elaborated a questionnaire with 12 items about the patient perception of the evolution of their symptoms and outcomes after their inclusion in the program (dyspnea, daily activity limitations, use of inhaled rescue medication, anxiety, depression, antibiotics use, unscheduled medical consultations, hospitalization, general health, changes in lifestyle and workplace absenteeism). The questionnaire was administered by interview and for each question the patient chose only one response whose score was 0 (better), 1 (the same) or 2 (worse). The total score of the questionnaire was also evaluated, ranging from 0 to 24 points, and we graded the impact of the PR from the patient's perspective: 0-5 points: high; 6-11: moderate; 12-24: low.
Results: We included 30 patients, 18 (62%) were male, ages between 35 and 87 years old (mean: 60 ± 12 years, median: 59 years). Patients had chronic obstructive disease (asthma or COPD) and of these, 8 had bronchiectasis. Regarding the assessment of the impact of PR, the mean total score was 3 ± 2. Eighteen patients (62%) had a total score lower than 5. Ninety-three percent of patients reported that their dyspnea improved after being included in the PR program; 86% decreased the use of antibiotics; 83% reduced the use of inhaled rescue medication and 76% had less unscheduled medical consultations and felt an improvement in their health status. Sixty-two percent of patients referred that they were hospitalized less often and had less daily activity limitations and less depressive symptoms. Sixty-two percent of patients admitted to have healthier behaviors (more physical activity and/or qualitative improvement in their diet). Of the 11 patients who kept a job, 8 reported less workplace absenteeism after starting the PR.
Conclusions: The PR is recognized as being a key component in the treatment of patients with chronic respiratory disease. The vast majority of studies in this area use objective scales to assess outcomes, and the patient opinion about its importance in their health is less valued. This study shows that patients with chronic obstructive respiratory disease perceive the PR as an approach that improves their condition, their quality of life and their health in general. The patients' perception of their illness and the effectiveness of their treatment is essential and should always be evaluated.

Key words: *Pulmonary rehabilitation. Outcomes.*

P033. EVALUATION OF THE RELATIONSHIP BETWEEN THE DISTANCE IN 6 MINUTE WALK DISTANCE AND POST-OPERATIVE LUNG TRANSPLANT

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Introduction: Patients on the waiting list for lung transplantation may keep a pulmonary rehabilitation program in order to maintain or improve the performance status before surgery. The 6-minute walk test (6-MWT), which is a simple and objective test to evaluate functional capacity, proved to be a good predictor of survival during the time waiting for transplant. Its role in the evaluation of the postoperative period is poorly understood.
Objective: To evaluate the correlation between the distance walked in 6-MWT (6-MWD) and the length of stay in the Intensive Care Unit (LSICU), duration of mechanical ventilatory support (DMVS) and the total duration of hospitalization (TDH) after lung transplantation.
Methods: Retrospective study of lung transplant patients who were included in a pulmonary rehabilitation program during the waiting time, and have 6-MWD within approximately 3 months prior to surgery.
Results: Fourteen patients were included, 64.3% (n = 9) males and 35.7% (n = 5) females, with median age 49.5 years. Silicosis was the diagnosis in 28.5% (n = 4) of patients, COPD in 28.5% (n = 4), lymphangioleiomyomatosis in 14.3% (n = 2), hypersensitivity pneumonitis in 14.3% (n = 2) and idiopathic pulmonary fibrosis in 14.3% (n = 2). The median duration of pulmonary rehabilitation program until transplantation was 44.5 weeks. Median 6-MWD before transplantation was 400m. Transplantation was unipulmonar in 92.9% (n = 13) and bipulmonar in 7.1% (n = 1). The median SICU was 9 days; median DMVS 4 days; median TDH was 40 days. Evaluating the correlations, a negative relationship between the 6-MWD and TUCI (r = -0.505) and TVM (r = -0.377) was found, in both cases without statistical significance (p = 0.248 and 0.204, respectively).
Conclusions: In this sample of patients, there was a negative correlation between the functional capacity of patients with DMVS and TDH, although without statistical significance. This may be due to the small sample size as well as to the presence of other factors that can influence the course of this process, namely the inherent complications of the surgical technique itself.

Key words: *Lung transplantation. 6-MWD. Postoperative evolution.*

P034. PREDICTORS OF EXACERBATIONS IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE – CAN WE TRUST IN ANAEMIA?

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Anaemia could be a marker of general illness severity and thereby associated with frequent hospitalisations and was recently identified as a comorbidity of chronic obstructive pulmonary disease (COPD). Recent reports point out that anaemia is more frequent in more severely ill COPD patients and analysis indicator that a lower hematocrit independently predicted both frequent exacerbations and readmissions. The aim of this retrospective study was correlate the admission levels of haemoglobin with chain reaction protein (CRP) levels in a population of COPD patients hospitalized with an exacerbation by a respiratory infection. The sample consisted of 42

COPD patients admitted in internal medicine ward with the diagnosis of an exacerbation by a respiratory infection (tracheobronchitis and pneumonia) in 2013. The mean age of patients was 78.8 years and 69% were men. The mean haemoglobin level at entry was 12.48 g/dL and mean CRP value was 13.72. Using the Pearson correlation index there was a linear negative weak correlation (p = -0.127) between the two variables but lower haemoglobin levels were associated with higher CRP levels. The possible underlying reasons of anaemia in COPD are probably multifactorial. In our study we didn't find a strong linear correlation between the two variables probably because the patients analyzed were inpatients in an internal medicine ward with multiple comorbidities beyond the respiratory disease that may also contribute to affect the haemoglobin values. Anaemia in COPD is certainly an exciting topic that requires continued intensive research in the future to confirm if it can be included as a parameter for predicting the prognosis of an exacerbation.

Key words: *COPD. Anaemia. Exacerbations. Comorbidity.*

P035. COPD AND HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS)

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Introduction: Anxiety and depression may be present in a wide variety of acute and chronic diseases. In recent years, both have been associated with patients with chronic obstructive pulmonary disease (COPD). HADS consists of 14 items (7 items in each subscale of anxiety and depression), and it is widely used to assess anxiety and depression in non-psychiatric outpatient patients. Scores between 8 and 10 for each subscale may indicate a possible clinical disturbance, and between 11 and 21 it may suggest a probable clinical disturbance.
Objective: HADS assessment in a population of COPD patients and evaluation of its relationship with different clinical parameters.
Methods: Six-month retrospective study in which stable COPD patients that frequented a Respiratory Rehabilitation Unit were included. Collected data included sociodemographic variables, anthropometric parameters, MMRC dyspnea scale and pulmonary function tests. Statistical analysis was performed using the SPSS® v.21 for a confidence interval of 95%.
Results: Eighty-six patients were included in this study. Average age was 65.1 ± 9.03 years, 91.9% were men and 84.9% of the patients had a MMRC dyspnea scale ≥ 2. Mean BMI was 25.7 ± 4.6 kg/m^2 and mean FEV1 of 0.47 ± 0.15 L. Mean total HADS was 12.1 ± 6.5, with a HADS anxiety and depression score ≥ 8 in 43% and 24.4% of patients, respectively. Lower BMI (p = 0.013) and FEV1 (p = 0.027) were related to scores of HADS anxiety ≥ 8 and ≥ 11, respectively. HADS anxiety subscale scores consistent with probable or possible clinical disorder were also associated with higher values of MMRC (p = 0.005/0.012). The same happened with HADS depression subscale and MMRC dyspnea scale (p = 0.036/0.001).
Conclusions: Anxiety and depression have a significant prevalence in COPD patients. Dyspnea, nutritional status and airway obstruction seem to significantly influence the psycho-social impact of this pathology.

Key words: *COPD. HADS. Depression. Anxiety.*

P036. CARDIAC DISEASE IN COPD PATIENTS

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Introduction: Chronic obstructive pulmonary disease (COPD) is a systemic disease whose natural history is influenced by tobacco and other factors, including the presence of comorbidities, such as cardiac disease.
Objective: The aim of this study was to evaluate the influence of cardiac disease in the clinical parameters evaluated routinely in COPD patients of a Respiratory Rehabilitation Unit: COPD Assessment Test (CAT), GOLD stage, FEV1 (%), BMI, smoking status, daytime blood pressure values of oxygen and carbon dioxide at rest (PaO_2 and $PaCO_2$).
Methods: Eight-month retrospective study in which stable COPD patients that frequented a Respiratory Rehabilitation Unit were included. Data collected included the above mentioned clinical parameters. Statistical analysis was performed using the SPSS® v.21 for a confidence interval of 95%.
Results: One hundred and thirteen patients were included in this study. Average age was 66.8 ± 9.5 years, 84.1% were men and 72.5% of the patients had a history of smoking (10.6% were active smokers). Cardiac disease was present in 43.5% of cases (of these, 77.5% had a history of smoking). Mean FEV1 was 45.1 ± 19.3% and mean PaO_2 was 68.7 ± 10.2 mmHg. There was a statistically significant correlation between lower FEV1% values (p = 0.016) and PaO_2 (p < 0.001) and the presence of cardiac disease. The remaining parameters evaluated showed no correlation with the presence of this pathology.
Conclusions: Cardiac disease is associated with lower FEV1% and PaO_2 values, thus confirming that this comorbidity negatively influences the natural history of COPD, even in stable patients.

Key words: *COPD. Cardiac disease.*

P037. EFFECT SIZE OF OPEN-LABEL VERSUS DOUBLE-BLIND ADMINISTRATION OF TIOTROPIUM IN TRIALS INVESTIGATING HEALTH-RELATED QUALITY OF LIFE IN COPD

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Introduction: Effects of interventions on patient-reported outcomes may be subjective and modulated by patients' expectations regarding treatment efficacy. The gold standard for minimizing such bias is the double-blind randomized controlled trial. We analyzed the effects of tiotropium on health-related quality of life in COPD in placebo-controlled trials and assessed whether the trial design (double-blind versus open-label) is a relevant modifier of the effects of tiotropium.
Methods: Trials of at least 6 months' duration investigating the effect of tiotropium versus placebo on health-related quality of life in COPD (assessed using the St George's Respiratory Questionnaire [SGRQ]) were identified from the Boehringer Ingelheim clinical trial database and by a systematic literature search in MEDLINE, with a cut-off date of 30 November 2011. As clinical endpoint, the mean difference between treatment groups in SGRQ total score was assessed. Trials were grouped according to whether tiotropium had been administered double-blind or open-label. We performed a network meta-analysis including standard methodology to test for interaction to evaluate whether the trial design (double-blind versus open-label) is a potential modifier of the effect size or its direction.
Results: We identified 12 trials in which tiotropium had been administered double-blind, and three trials with open-label application of tiotropium. The overall effect for mean difference versus placebo in SGRQ total score was -2.98 units (95% confidence interval [CI): -3.49, -2.47). For the subgroup of double-blind trials, the mean difference versus placebo was -3.20 (95%CI: -3.75, -2.65), compared to -1.67 (95%CI: -3.02, -0.32) for open-label trials. The

P-value for interaction between subgroup and effect on SGRQ total score was 0.04.
Conclusions: In patients with COPD, the trial design (double-blind versus open-label) was a statistically significant modifier of the effect of inhaled tiotropium on health-related quality of life. The modification was quantitative, resulting in a substantial underestimation of the effect of tiotropium on SGRQ total score when the administration had been open-label, compared with the gold-standard, ie, double-blind comparison. A subjective endpoint such as quality of life is particularly susceptible to bias due to patients' expectations toward the efficacy of an intervention. Therefore, the validity of studies using non-blinded designs to investigate such endpoints must be questioned.
Results presented in Annual Congress of American Thoracic Society (ATS), San Diego, USA, 16-21 May, 2014.

***Key words**: Tiotropium. Quality of life. COPD. Open-label. Double-blind.*

P038. EFFECTS OF TIOTROPIUM ON EXACERBATIONS IN PATIENTS WITH COPD WITH LOW OR HIGH RISK OF EXACERBATIONS: A POST-HOC ANALYSIS FROM THE 4-YEAR UPLIFT® TRIAL

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Introduction: A history of past exacerbations is a predictor of future events for patients with chronic obstructive pulmonary disease (COPD). While patients can be classified into frequent (≥ 2) or infrequent (< 2) exacerbators based on the number of exacerbations experienced per year1, the latest Global Initiative for Chronic Obstructive Lung Disease (GOLD) strategy divides patients into low (< 2 non-severe exacerbations, no severe exacerbations) and high (≥ 2 non-severe exacerbations or ≥ 1 severe exacerbation) risk categories. We investigated the effect of tiotropium on COPD exacerbations in patients with a low or high risk of exacerbations in the Understanding Potential Long-term Impacts on Function with Tiotropium (UPLIFT®) trial (NCT00144339; N = 5992), which evaluated the efficacy of tiotropium versus placebo (current care, but no anticholinergics) during a 4-year treatment period.
Methods: We conducted a post-hoc analysis of the UPLIFT® trial database. Patients were classified as having a low risk of exacerbations if they experienced ≤ 1 exacerbation and no COPD-related hospitalization(s) in the year preceding trial entry or as high risk of exacerbations based on the GOLD 2013 definition of ≥ 2 exacerbations (courses of oral steroids/antibiotics) or ≥1 COPD-related hospitalization(s) in the year preceding the trial. This was based on collected COPD characteristics, including hospitalization due to an exacerbation or medication.
Results: Table. Additionally, comparing patients at low versus high risk for exacerbations before and after 1-year's treatment with tiotropium showed that treatment resulted in a shift in this ratio from 1.20 to 3.68 (2.48 increase) and placebo/current care treatment shifted this ratio from 1.29 to 3.15 (1.86 increase). After 1 year of treatment, the risk of remaining in the high-risk exacerbator subgroup was numerically lower with tiotropium than placebo/current care (rate ratio [RR]: 0.94; 95% confidence interval [CI]: 0.84, 1.05; p = 0.2818). Although the low-risk subgroup is relatively stable, the risk of moving from the low-risk subgroup into the high-risk subgroup was statistically lower with tiotropium than placebo/current care (RR: 0.78; 95%CI: 0.67, 0.92; p = 0.0029).
Conclusions: This analysis confirms the efficacy of tiotropium with regards to exacerbation reduction and prolonging time to first exacerbation, and the effects were shown in both the high- and low-risk exacerbator patient subgroups. Tiotropium treatment resulted in a favorable shift in the ratio for low-risk/high-risk for COPD exacerbations, suggesting it has a stabilizing effect on the disease.
Results presented in Annual Congress of American Thoracic Society (ATS), San Diego, USA, 16-21 May, 2014.

***Key words**: Tiotropium. Exacerbations. COPD. Post-hoc. UPLIFT.*

P039. WHAT HAS CHANGED IN LONG LENGTH OF STAY PULMONOLOGY ADMISSIONS IN THE LAST 10 YEARS?

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Introduction: The increased longevity of the population, meant that the number of hospitalizations in patients with chronic diseases and in the elderly, has increased. The duration of these hos-

Table - P038

	Time to first COPD exacerbation					
	Tiotropium		Placebo		Tiotropium vs Placebo	
	N	# events	N	# events	HR (95%CI)	P-value
Low-risk subgroup	1,606	944	1,670	1,034	0.81 (0.74, 0.88)	< 0.0001
High-risk subgroup	1,335	1,031	1,294	990	0.89 (0.81, 0.97)	0.0066
	Number of COPD exacerbations during study					
	Tiotropium adjusted rate of events per patient year		Placebo adjusted rate of events per patient year		Tiotropium vs placebo, RR	
	N	Mean (95% CI)	N	Mean (95%CI)	Mean (95%CI)	P-value
Low-risk subgroup	1,606	0.50 (0.47, 0.53)	1,670	0.63 (0.59, 0.67)	0.79 (0.72, 0.86)	< 0.0001
High-risk subgroup	1,335	1.02 (0.97, 1.08)	1,294	1.16 (1.10, 1.23)	0.88 (0.81, 0.95)	0.0009

CI, confidence interval; HR, hazard ratio; RR, rate ratio

pitalizations has important repercussions. The long hospitalizations are associated with additional morbidity, increased length of post-discharge recovery, rehabilitation, death and costs. The existing information in the literature about the long length of stay in hospital and its evolution over the past few years is scarce.
Objective: Characterize patients with long length of stay in hospital, admitted in the Pulmonology Department over 10 years.
Methods: Retrospective study of patients with long length of stay in hospital, in a Pulmonology Department, between 01/01/2004 and 31/12/2013. Sociodemographic variables, length of stay and primary diagnosis were analyzed (according to the 9th revision of the International Statistical Classification of Diseases, Injuries and Causes of Death). Was considered long length of stay, admissions lasting 20 days or more.
Results: Were included 954 admissions, of 830 patients, of whom 567 (68.3%) were men. Mean age 66 ± 15 years. Average length of stay of 32 ± 15 days (minimum and maximum duration of 20 and 154 days). The most common primary diagnosis was Respiratory system diseases with 586 admissions (61.4%), followed by neoplasms 182 (19.1%), infections 93 (9.7%), other diseases 57 (6.0%), and Disorders of the pulmonary circulation (36 3.8%). Among the respiratory system diseases, chronic obstructive pulmonary disease (COPD) exacerbation was the most frequent diagnosis in 209 cases (35.7%) and pneumonia in 181 cases (30.9%). Over the 10 years analyzed: the number of admissions showed increasing trend, 82 in 2004 and 94 in 2013; the average length of stay did not change significantly; the percentage of hospitalized men increased; the mean age of patients increased. For the principal inpatient diagnoses over the 10 years, the diseases of the respiratory system increased by 46 cases in 2004 and 57 in 2013 (mostly by increasing the number of COPD exacerbations and pneumonia, bronchiectasis with acute exacerbation, and pleural effusions); Infections showed decrease from 2008 on and increased again in 2013 (mainly due to the variations in the number of admissions for pulmonary tuberculosis); the number of admissions for Neoplasm remained stable and Diseases of pulmonary circulation decreased.
Conclusions: In the last 10 years, in this study, there was an increase in the number of long hospitalizations, in the proportion of men and in the mean age of hospitalized patients. What falls within the expected, given the longevity of the population and its increasing comorbidities. The most common principal diagnosis in these long hospitalizations was Respiratory system diseases. This high number is mainly due to cases of exacerbated COPD and pneumonia, which have shown increasing trend. The number of patients with long hospitalization for Neoplasm is high, however, has remained stable over the years. The Infections (diagnosis more represented by pulmonary tuberculosis) had different variations, with a decrease from 2008 and increased again in 2013.

Key words: *Long length of stay. 10 years. Pulmonology.*

P040. COPD OPPORTUNISTIC BASED SCREENING ON A GENERAL POPULATION

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Introduction: To promote World's COPD day 2013 in a hospital setting, a small slideshow presentation was broadcasted, focusing on symptoms, epidemiology, treatment, and the need of spirometry for diagnosis.
Objective: To carry out an opportunistic screening for COPD based on symptoms inquiry and spirometry at Hospital of Aveiro.
Methods: Hospital workers and visitors were invited to perform a spirometry and fulfill a small questionnaire considering smoking habits, environmental exposure, respiratory symptoms and history of co-morbidities. GOLD 2014 criteria were used to define positive spirometry results.
Results: We obtained 116 participants, 18.1% smokers, 20.7% ex-smokers and 30.2% with environmental exposure to dusts and biomass combustion. Spirometry was positive in 12.9% of participants, 47% of those with history of respiratory disease. No significant relationship was found between spirometry abnormalities and smoking or environmental exposure. An association was found between respiratory symptoms and changes in FEV1, FVC and PEF75 ($p < 0.05$), but not with positive spirometry. Excluding history of respiratory disease, there was an association between hypertension and changes in FEV1% and FVC% ($p < 0.05$), but not with positive spirometry.
Conclusions: No association could be found between smoking or environmental exposure and spirometry changes, which may be due to low sample size. In participants with respiratory complaints spirometric changes may represent initial forms of respiratory diseases with mild functional impairment. Furthermore, abnormalities found in hypertensive patients may reflect underdiagnosis of respiratory compromise due to cardiac pathology.

Key words: *Spirometry. Smoking. DPOC. Environmental exposure. Screening.*

P041. SEVERITY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AND ITS RELATIONSHIP WITH THE PRESENCE OF METABOLIC SYNDROME

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Introduction: Metabolic syndrome represents a cluster of risk factors that predispose to systemic inflammation and cardiovascular disease. The overall prevalence of metabolic syndrome in chronic obstructive pulmonary disease (COPD) patients varies between 22.5% and 53%, and it´s relationship with severity of lung function has not been fully clarified. Some studies show a reverse epidemiology relationship between the presence of metabolic syndrome and severity of airway obstruction.
Objective: Determine the prevalence of metabolic syndrome (MS) in a population of COPD patients and its impact in lung function and number of exacerbations.
Methods: Retrospective analysis of patients with COPD characterizing age, gender, smoking habits, GOLD stage, body mass index (BMI), waist perimeter (WP), comorbidities, lung function parameters and number of exacerbations per year. Patients were categorized according to the presence or absence of MS according to the International Diabetes Federation (IDF) definition.
Results: The study included 30 patients (76.7% males) with mean age of 67 ± 12 years and high prevalence of smoking habits (83.3%). 13.3% were classified as GOLD A, 3.3% as GOLD B, 30% as GOLD C and 30% as GOLD D. Overall presence of MS was 46.7%; patients with MS had higher values for percent predicted of FEV1-%FEV1-(56.2 ± 17.7% vs 29.9 ± 11.5%; $p = 0.003$), of peak expiratory flow-PEF-(57 ± 14.3% vs 41.7 ± 17.9%; $p = 0.039$), of forced vital capacity-FVC (81.2 ± 20.8% vs 59 ± 21.2%; $p = 0.013$), and of carbon monoxide diffusion capacity (79.6 ± 17.9% vs 47.8 ± 22.9%; $p = 0.035$). A trend toward fewer exacerbations per year was observed in patients with MS (2 ± 1 vs 3 ± 2; $p = 0.48$).
Conclusions: In this population of predominantly GOLD C and GOLD D COPD patients, those who have MS according to IDF definition have a less severe grade of obstruction and fewer exacerbations, suggesting a reverse epidemiology relationship between metabolic syndrome and severity of COPD.

***Key words**: Chronic obstructive pulmonary disease. Metabolic syndrome.*

P042. AUTOCPAP TO DETERMINE A FIXED PRESSURE

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Introduction: Obstructive Sleep Apnea Syndrome (OSAS) has a high prevalence among the adult population. Continuous positive airway pressure (CPAP) is considered the treatment of choice of OSAS. There are several methods to determine the fixed CPAP treatment pressure, the polysomnography level II is the most used. The Auto CPAP is able to detect the air flow and pressure in the circuit, as well as the occurrence of respiratory events. It is possible to determine the appropriate EPAP pressure through the data obtained from Auto-CPAP adherence tracking systems registration, thereby avoiding the polysomnography level II.
Objective: To determine the time required with Auto-CPAP treatment to achieve a EPAP in patients with OSAS.
Methods: Retrospective analysis of 109 patients with OSAS in Auto-CPAP treatment. We assessed the 95 percentile and the median EPAP pressure provided by the device in four different moments (the first and seventh days, the seventh and twelfth weeks) after the initiation of treatment. There were considered for statistical analysis only the adherent patients and without significant evidence of leak.
Results: Patients had a mean age of 62.8 ± 10.8 years; being 84.4% male, with a mean body mass index of 32 kg/m^2. The Auto-CPAP devices were programmed with an average minimum EPAP of 5.7 cm of water and a maximum of 14.1 cm of water. The average daily usage time of Auto-CPAP was 7.2 hours. We obtained an average score of 13.4 points on the Epworth Sleepiness Scale (ESS) prior to initiation of treatment, and 7.5 at the 12th week of treatment. There was a progressive decrease in the apnea and hypopnea index with continued treatment, and its average value was: 5.9 events/hour (E/H) at the first day; 4.5 E/H at the seventh day; 3.7 E/H at the 7th week and 3.3 E/H at the 12th week of treatment. There were no statistically significant differences between the EPAP pressures evaluated in the four stages mentioned, both with regard to medium pressure, and the pressure in the 95 percentile. Nevertheless, in patients with use of Auto-CPAP for a period longer than 6 hours per night (n = 47) there was a stabilization of the EPAP pressure from the 7th day of treatment.
Conclusions: On the 7th day of treatment there was a stabilization of EPAP in patients who slept for more than 6 hours per night, this seems to be the minimum time required for the achievement of a fixed EPAP with the Auto-CPAP treatment.

***Key words**: OSA. Auto-CPAP determine fixed CPAP pressure.*

P043. SLEEP APNEA PATIENTS SATISFACTION WITH HOME RESPIRATORY CARE COMPANY AND INFLUENCE IN ADHERENCE TO TREATMENT

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Introduction: In Portugal, sleep apnea syndrome (SAS) is a pathology with increasing incidence, affecting 5% of adult population. Continuous positive airway pressure (CPAP) is recognized as SAS treatment of choice. This therapy is provided by home respiratory care (HRC) companies, who are responsible for providing the equipment, it´s maintenance and monitoring patient issues, with the goal of optimize treatment adherence.
Objective: This investigation focus is to evaluate SAS patients satisfaction with the domiciliary care provided by HRC companies, and its influence in therapy adherence.
Methods: A questionnaire was developed to characterize the sample in social and demographic dimension, clinical status, adherence to therapy, company performance and patient satisfaction and knowledge about the company. These questionnaires were applied in Hospitalar de Trás-Os-Montes e Alto Douro, to all SAS patients, using CPAP therapy for more than 6 months, attended in Pulmonology Department between January and November of 2013. Adherence was verified by consulting the domiciliary equipment memory card. We also review the institutional clinical process. IBM SPSS 20 was used for statistical analysis, as well as software AMOS for structural equations analysis.
Results: The sample consisted of 191 individuals, 145 men and 46 women, with mean age 62 ± 9.9 years. Grade 1 obesity was found in most patients. 73.3% of patient presented a low educational level, and agriculture related profession was the most prevalent occupation. Most patients had severe SAS, and 73.1% properly complied with treatment by adherence registration analysis. On a scale from 0 to 100, related satisfaction with HRC company was 62.2 ± 20.3. We found positive correlations between the company performance on the first visit, general satisfaction and adherence to treatment. Satisfaction with the company and adherence superior to 4h/night are correlated. Explanation on equipment handling and interface adjustments were relate to adherence. Adherence was also related with improvement of symptoms.
Conclusions: In general, SAS patients are satisfied with the performance of HRC companies. The company's performance is related to treatment adherence, proving their importance in monitoring patients with SAS.

***Key words**: Home respiratory care. Adherence. Satisfaction.*

P044. CLINICAL PROFILE OF PATIENTS UNDER ADAPTIVE SERVO-VENTILATION

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Introduction: Characterization and treatment of complex sleep apnea syndrome is a current challenge in clinical practice due to heterogeneity of risk factors and the pathophysiological and clinical characteristics of these patients. The aim of this study is to clinically characterize patients undergoing treatment with adaptive servoventilation and evaluate the effectiveness of treatment.
Methods: A retrospective analysis of clinical and diagnostic characteristics and use of health services, two years before and two years after treatment with adaptive servoventilation of all patients diagnosed with complex sleep apnea syndrome from the pulmonology department of the Cova da Beira EPE Hospital Centre was made. 14 subjects, all male, with mean age 67.79 ± 5.18 years were identified.
Results: There was a high prevalence of cardiovascular comorbidities (66.7%) as well as significant heterogeneity in the clinical characteristics of the patients. The severity of apnea/hypopnea index at diagnosis was high (49.6/hour) and the effectiveness of treatment with CPAP and Bilevel was low, with an average RDI of 28.12/hour. The use of adaptive servoventilation allowed a very significant improvement in the control of all respiratory events (average of 6.8 RDI/hour). In clinical terms there was a significant improvement in dyspnea, restorative sleep sensation, in the control of blood pressure and nocturia. Although non-statistically significant, it was also observed a reduction in the number of admission days and emergency department visits from cardio-respiratory causes, when compared the two years before and after implementation of adaptive servoventilation.

Conclusions: The application of adaptive servoventilation was superior in controlling apnea/hypopnea index and improvement in signs and symptoms in these patients when compared to CPAP/bi-level treatment. The patient group showed high prevalence of cardiovascular comorbidities, however about a third of them did not present risk factors for the occurrence of complex sleep apnea syndrome. Randomized clinical trials are needed to assess more clearly the factors associated with the development of this pathology as well as to clarify the best therapeutic options.

Key words: *Sleep apnea syndromes. Adaptive servo-ventilation. Continuous positive airway pressure.*

P045. PREDICTIVE VALUE OF BERLIN QUESTIONNAIRE AND STOP-BANG FOR OBSTRUCTIVE SLEEP APNEA

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The Berlin Questionnaire (BQ) and STOP Bang are two of the most widely used screening instruments for subjects with suspected sleep disorders. To determine the predictive accuracy of the BQ and STOP Bang in diagnosing sleep apnea in patients admitted to our sleep clinic, using overnight polysomnography (PSG) as the "Gold Standard". We evaluated the sensitivity, specificity, positive predictive value, and negative predictive value of BQ and STOP-BANG scores for identifying a respiratory disturbance index (RDI) > 5/hour. Patients were screened with BQ and Stop Bang and then submitted to a PSG. During 2013, 162 patients with suspected sleep disorders were referred to our sleep clinic. Fifty 2% male, average age 53.5 (± 14.3), average BMI 29.8 (± 16.6) Kgm^2. 62% had a positive polysomnography (IDR > 5); 28% mild, 18% moderate and 16% severe. 75.3% scored positive in the BQ (positive in at least two categories) and 40.7% scored > 4 in the STOP-Bang questionnaire. For BQ, sensitivity 83.2%, specificity 37.7%, PPV 68.9% and NPV 57.5% (positive likelihood ratio: 1.34; 95% confidence interval (1.08, 1.65)). For STOP-Bang sensitivity 56%, specificity 83.6%, PPV 84.8% and NPV 53.7% (positive likelihood ratio: 3.42; 95% confidence interval (1.8, 6.18)). Questionnaires alone, possibly given a reliance on sleepiness as a symptom, cannot reliably rule out the presence of OSA. Objective physiological measurement is critical for the diagnosis and exclusion of OSA.

Key words: *Berlin questionnaire. STOP-Bang. Sleep apnea.*

P046. CHARACTERIZATION OF A SAMPLE SUBMITTED TO AMBULATORY SLEEP STUDY – A HOSPITAL EXPERIENCE

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Introduction: OSAS is a disease with high prevalence associated with life quality reduction, increase of cardiovascular morbidity, and also with an increase of mortality in work related and driving accidents. The present study shows the experience of one hospital, located in Lisbon, in the application of CRSS.
Objective: To evaluate statistically the subjects' anthropometric data and undertaken scales and correlate them with the data obtained in CRSS.
Methods: Retrospective study with a sample of 139 subjects with OSAS suggestive complaints and/or disease's indirect signals (i.e. nocturnal HBP) that were evaluated through CRSS between May and July 2013. All statistical analysis were performed using IBM® SPSS Statistics v.21. The Spearman exact test and Fisher test were used to evaluate the variable correlation with a significance level of 0.05.
Results: The sample was composed by 61.9% male subjects and 38.1% female subjects, with an average age of 53 ± 13.9 years; the medium BMI was 30.5 kg/m^2, the medium abdominal circumference 102.18 cm, and the medium neck circumference 41.41 cm. A positive CRSS (AHI > 5/h) was found in 93 subjects (67% of the sample) – 39 with mild OSAS (AHI 5/h to 15/h), 25 with moderate OSAS (AHI 15/h to 30/h) and 29 with severe OSAS (> 30/h) - withan AHI mean of 18.45/h; the AHI mean measured in supine position was 26.48/h; the medium DI was 17.47/h; the mean percentage of T90 was 9.08% and the medium heart rate was 64.37 bpm. It was found a positive weak correlation between all anthropometric measurements and the AHI, AHI in supine position, percentage of T90 and DI. It wasn't found any correlation between ESS and the obtained data. However, it was found a correlation between the STOP-BANG questionnaire and Mallampati score and the AHI, AHI in supine position and DI. After the categorization of AHI by severity levels, was observed a stronger correlation between anthropometric data and severe OSAS.
Conclusions: In this sample of individuals, studied by CRSS, with OSAS probability, the anthropometric data, STOP-BANG questionnaire and *Mallampati* score, are correlated with the presence and severity of OSAS.

Key words: *Obstructive sleep apnea syndrome (OSAS). Cardio-respiratory sleep study (CRSS). Body mass index (BMI). Abdominal circumference. Neck circumference. Epworth Sleep Scale (ESS). STOP-BANG questionnaire. Mallampati score. Apnea-hypopnea index (AHI). Dessaturation index (DI). Percentage of total sleep time with oxygen saturation under 90% (T90).*

P047. THE SIDE-EFFECTS OF APAP TREATMENT – PROSPECTIVE ANALYSIS

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Table - P046

	AHI		AHI Supine		%T90		DI	
	p value	R coefficient	p value	R coefficient	p value	R coefficient	p value	R coefficient
Age	0.016*	0.204	0.184	0.113	0.001*	0.314	0.019*	0.198
BMI	0.001*	0.324	0.001*	0.337	0.001*	0.361	0.001*	0.345
Neck circumference	0.001*	0.464	0.001*	0.440	0.001*	0.360	0.001*	0.457
Abdominal circumference	0.001*	0.431	0.001*	0.442	0.001*	0.358	0.001*	0.448

Introduction: Auto-adjusting Positive Airway Pressure (APAP) has been used as first line treatment in patients with obstructive sleep apnoea syndrome (OSAS) but side-effects are common and they can influence the APAP adherence.
Objective: Evaluate the main side-effects of APAP treatment and potential benefits of their identification and resolution early in adherence to treatment.
Methods: We performed a prospective study including patients with a recent diagnosis of OSAS who started APAP treatment. The side-effects related to treatment as well as possible adjustments were recorded during the sessions of teaching and/or follow-up (1 and/or 3 months after initiation of treatment). Forty-nine of the patients also completed the questionnaire Calgary Sleep Apnea Quality of Life Index (SAQLI) directed at potential adverse consequences of treatment after 6 months. Adherence to treatment was also recorded in all assessments of patients.
Results: The study enrolled 80 patients [men: 61 (76.3%); median age: 57 (50-65) years] with apnoea-hypopnoea index (AHI) median of 32.3 (28.8-35.9) events/h and Epworth Sleepiness Scale median of 12 (6-16). The nasal mask was the interface chosen in 55 (68.8%) patients. Side-effects were reported for 58 (72.5%) patients. The main complaints registered were: mucosal dryness - 21 (26.3%), air leakage - 20 (25.0%), skin lesions of the face - 18 (22.5%), nighttime awakenings - 12 (15.0%), discomfort caused by the mask - 12 (15.0%) and nasal congestion - 11 (13.8%). Adherence to treatment at 1 and 3 months was similar in patients with or without reference to side-effects. The complaints led to the following changes in educational and/or follow-up sessions: fit of mask - 12 (15.0%), change of mask - 14 (17.5%) and placement of humidifier - 14 (17.5%). Patients who had been underwent to adjustments and were reassessed at the end of 6 months showed improved adherence to treatment, although without statistical significance (percentage of use: 86.6 ± 2.7% vs 96.8 ± 28.8 p = 0.20).
Conclusions: Side-effects related to APAP are common. However, they appear not influence the adherence to treatment. The monitoring of OSAS patients at treatment initiation allows their identification and resolution early.

Key words: *Obstructive Sleep Apnoea Syndrome. Auto-adjusting positive airway pressure. Side-effects. Adherence.*

P048. CORRELATION BETWEEN CLINICAL AND RP CHARACTERISTICS

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With the increasing longevity and prevalence of obesity it also increases awareness of the implications of obstructive sleep apnea-hypopnea syndrome (OSAHS). The increasing number of patients attending health services for evaluation and diagnosis and limited access to polysomnography (Gold standard) imply the use of portable recording devices such as cardiorespiratory polygraphy (RP). There are few studies to assess the relationship between clinical parameters of OSAHS and RP. The objective of this study is to investigate the relationship between demographics (age and sex), anthropometric (BMI) and sleepiness (Epworth Sleepiness Scale - ESS) and RP (AHI and minimum SpO_2). A retrospective analysis of 143 patients with high clinical suspicion of OSAHS who underwent PR (Stardust® and Embletta®) between October 2013 and March 2014 was performed. Categorical variables described in the objectives and their statistical analysis was performed with IBM software SPSS for Windows 22.0. The main results: 54% men, most between 40 and 60 years, 52% with BMI > 30 kg/m^2; 35% ESS > 12, 51% with AHI between 5 and 30 and 88.8% reaching minimum SpO_2 < 90%. It was possible to establish a statistically significant correlation between male and AHI > 5, the same happening with BMI > 30 kg/m^2. It was also possible to establish a significant relationship between BMI and minimum SpO_2 during RP. Male gender and BMI > 30 Kg/m^2 are risk factors and severity predictors for OSAHS. There is a tendency for age > 40 to correlate with OSAHS. There is a significant number of individuals aged > 70 years with OSAHS. The degree of excessive daytime sleepiness measured by ESS alone is not a good predictor of OSAS and its severity.

Key words: *OSAS. Obesity.*

P049. SLEEP DISORDERS IN PATIENTS WITH AMYOTROPHIC LATERAL SCLEROSIS

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Introduction: Muscle involvement by amyotrophic lateral sclerosis (ALS), inexorably determines the commitment of the respiratory muscles at some point of disease's evolution. Multiple studies have described the association between several neuromuscular diseases and sleep disorders, with an increased incidence when compared with general population. The most commonly reported sleep disorders are hypoventilation and obstructive sleep apnea syndrome (OSAS).
Objective: Demographic, anthropometric, functional and gasimetric characterization of patients with the ALS diagnosis; Identification of sleep disorders in polysomnography study.
Methods: Retrospective study based on the analysis of patients diagnosed with ALS and with follow-up as outpatients in pulmonology-ventilotherapy in CHTMAD. Polysomnographic studies were performed between 2 and 40 months from ALS diagnosis. Statistical analysis was performed using SPSS 20.0.
Results: 21 patients with ALS diagnosis were included, aged between 34 to 83 years, with a mean age of 81 years. A male predominance was verified, representing 71.4% (n 15) of the sample. Of all patients, 47.6% (n 10) had bulbar involvement at the time of diagnosis. The mean body mass index (BMI) was 26, but 19% (n 4) of patients had BMI with obesity criteria according to WHO. Functionally, the mean forced vital capacity (FVC) was 81.7% (124 Max, Min 14.9), and mean maximal inspiratory pressure (MIP) was 49 (max. 120; min. 4.4). The arterial blood gas analysis revealed daytime hypercapnia in 23.8% (n 5) of the patients. All patients had altered sleep architecture, with decreased of REM sleep cycle and frequent arousals (mean 17.5/hour). Of all patients, 66.7% (n 14) had criteria for OSAS, 9 with mild, 3 with moderateand 2 with severe OSAS. Only 4 (19%) patients had excessive daytime sleepiness (Epworth > 10). The mortality rate at 5 years was 42.9% (n 9).
Conclusions: This sample reflects the fact that patients with ALS, often experience sleep disorders, frequent arousals and decreased REM sleep cycle, even when there is no daytime functional impairment. The study also shows that these patients often have OSAS associated and that they're paucisintomatic, so that excessive daytime sleepiness isn't very sensitive to the sleep disorders in these patients.

Key words: *Sleep disorders. Amyotrophic lateral sclerosis.*

P050. PERCEIVED IMPORTANCE OF HOME RESPIRATORY CARE COMPANIES TO PATIENTS WITH SLEEP APNEA SYNDROME

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Introduction: Obstructive sleep apnea (OSA) is considered a major health problem associated with increased cardiovascular morbidity

and mortality and the risk of car accidents. Continuous positive airway pressure is recognized as the OSA first line treatment. This therapy is provided by home respiratory care (HRC) companies, who are responsible for providing the equipment, it´s maintenance and monitoring patient difficulties.
Objective: Assess the perceptions of patients with OSA on the performance of CRD companies and its influence on treatment effectiveness.
Methods: A questionnaire was developed and applied in Hospitalar de Trás-Os-Montes e Alto Douro, to all Sleep Apnea diagnosed patients, using Continuous Positive Airway Pressure therapy for more than 6 months, attended in Pulmonology Department between January and November of 2013. Adherence was verified by consulting the domiciliary equipment memory card. We also review the institutional clinical process. IBM SPSS 20 was used for statistical analysis.
Results: The sample consisted of 191 individuals, mostly men, with mean age 62 ± 9.9 years. Most patients had severe sleep apnea, and adherence registration showed that 73.1% were adherent. The majority of the sample reported good adaptation to treatment in the first week, and recognize the company's performance contribution. The interface adjustment was the main provided service. A quarter of patients never received any call from the firm and only 9.4% had the first visit after one month of treatment. Patients ranked the company's service as "helpful", followed by "effective", and give greater importance to kindness/kindness of staff. It was found that about half of respondents unaware the company operates nationwide.
Conclusions: The performance of the HRC companies is important for the monitoring OSA patients. These patients give great importance to technician-patient interaction, as the sympathy was mentioned as one of the most important aspects. It seems necessary to standardize protocols, since we found differences in the performance of HRC companies.

Key words: *Home respiratory care. Sleep apnea. Performance.*

P051. COMPARING A COMBINATION OF VALIDATED QUESTIONNAIRES WITH LEVEL III PORTABLE MONITOR IN THE DIAGNOSIS AND SEVERITY OF SLEEP APNEA

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Questionnaires have been validated as screening tool in adult populations at risk for obstructive sleep apnea (OSA). Portable monitors (PM) have gained acceptance for the confirmation of OSA in patients (pts) with a high pretest probability of the disorder. We evaluated the diagnostic utility of validated questionnaires and a Level III PM in the diagnosis and severity of OSA. The aim was to evaluate if pts with a high pretest probability of OSA according to pre-determined questionnaires would have high prevalence and severity of OSA. Consecutive pts referred to the sleep clinic completed 3 questionnaires (Standford Sleepiness Scale (SSS), Berlin Questionnaire (BQ) and STOP-Bang) and were then submitted to a Level III PM test. In 2013, 353 pts were evaluated at our sleep clinic, 64% males. All were submitted to Level III testing and presented the following severity of obstructive apnea (IAH < 5 negative; IAH > 5 mild, IAH > 15 moderate, IAH > 30 severe); negative 25%, mild 26%, moderate 17% and severe 32%.In the SSS, 12 pts (4%) scored more than 3. Eight patients (66.7%) scored positive (IAH > 5). Three had severe, 4 moderate and 1 mild results in the poligraphy. One hundred and twenty six pts (35.7%) scored positive in all three categories of BQ. 99 (79%) scored positive (IAH > 5). 29% mild, 17% moderate and 33% severe. In the Stop-Bang, out of a total of 219 answers, 103 pts (47%) scored more than 4. Out of these 103 pts, 89% scored positive (IAH > 5); 27% mild, 20% moderate and 43% severe. None of the questionnaires evaluated were able to predict the severity of OSA, however, STOP-Bang, when positive, was highly suggestive of the presence of OSA.

Key words: *Berlin questionnaire. STOP-Bang. Standford sleepiness scale. Sleep apnea.*

P052. HEMODYNAMIC RESPONSE ON SLEEP DISORDERED BREATHING IN OBESE SUBJECTS DURING N2 STAGE

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Table - P052

	%	BP Sys	Stnd Dev Sys	BP Dia	Stnd BP Dia	MBP	MBP std Dev	SV	SV std Dev	CO	CO std Dev
0 (n = 11)	25	99,1 *† ‡	5,1*† ‡	55,7*† ‡	3,2*† ‡	70,1*† ‡	3,4	105,4*† ‡	5,3*† ‡	7,7*† ‡	0,4*† ‡
	50	113,7*† ‡	6,7*† ‡	67,1*† ‡	4,1*† ‡	86,1*† ‡	4,8	108,8*† ‡	7,5*† ‡	8,2*† ‡	0,6*† ‡
	75	123,6*† ‡	8,5*† ‡	68,6*† ‡	4,7*† ‡	88,5*† ‡	5,5	114,4*† ‡	12,8*† ‡	8,6*† ‡	1,1*† ‡
1 (n = 9)	25	124,8 *	10,8*	65,2*	4,1*	86,1*	5,7	106,9*	9,2*	8,1*	0,8*
	50	134,4*	12,3*	71,3*	6,8*	93,9*	8,7	110,4*	15,3*	8,3*	1,6*
	75	150,6*	14,2*	85,3*	10,9*	112,1*	10,2	115,2*	18,5*	9,4*	1,8*
2 (n = 24)	25	116,1†	13,5†	59,6†	7,9†	79,6†	10,3	102,7†	12,1†	8,2†	1,3†
	50	129,8†	14,9†	62,6†	8,6†	84,3†	11,3	111,4†	15,2†	9,1†	2,1†
	75	132,9†	17,2†	66,7†	9,9†	91,2†	12,4	113,6†	20,9†	9,8†	2,5†
3 (n = 9)	25	108,7 ‡	13,5 ‡	58,6 ‡	7,4 ‡	76,5 ‡	8,3 ‡	79,9 ‡	20,8 ‡	7,1 ‡	1,8 ‡
	50	115,9 ‡	15,9 ‡	69,9 ‡	8,9 ‡	84,3 ‡	11,1 ‡	96,1 ‡	25,1 ‡	7,1 ‡	2,3 ‡
	75	130,0 ‡	17,6 ‡	79,8 ‡	10,9 ‡	97,4 ‡	12,3 ‡	109,2 ‡	27,7 ‡	8,1 ‡	2,9 ‡

p < 0,05 * = 1 vs 0; † = 2 vs 0; ‡ = 3 vs 0.

Introduction: Obstructive sleep apneas (OSA) are associated with an increased risk for cardio-vascular diseases e.g. arterial hypertension. The repetitive desaturations have been seen as the most important factor in the development of the hypertension. Hypertension is one of the most common co-morbilities in presence of morbid obesity. However, these patients usually present not only OSA, but also hypoventilation/alveolar hypoxemia with persistent hypoxemia. In this preliminary data, we compare the hemodynamic values during N2 sleep in 16 obese patients with OSA and/or non-obstructive Hypoventilation.
Methods: We analyzed 53 periods of continue N2 sleep. The N2 sleep periods were separated in 4 groups, according its oxygen desaturation index (ODI) and percentage of SpO_2 < 90% (T90): 0 = controls with ODI < 15&T90 < 30; 1 = alveolar hypoventilation with ODI < 15&T90 ≥ 30; 2 = overlap with ODI > 15&T90 ≥ 30; 3 = OSA with ODI > 15&T90 < 30. The systolic (sys-mmHg), diastolic (diammHg) and median (MBP-mmHg) blood pressure (BP), stroke volume (SV-L) and cardiac output (CO-L) by the non-invasive beat to beat analysis via Nexfin-HD® device. Results are demonstrated the percentiles 25%, 50% and 75%. We used the non-parametric Manwhitney and a p < 0.05 was considered statistically significant.
Results: Mean results of the hemodynamic parameters are listed in the table.
Conclusions: Concerning the hemodynamic values we found significant differences between the medians in the 3 groups of patients with sleep disordered breathing (Group 1,2,3) when compared to obese controls without sleep disordered breathing (group 0). These results could indicate a possible impact of sleep disordered breathing on the hemodynamic values independent of morbid obesity.

***Key words**: Obesity, Blood pressure, Sleep studies,*

P053. NATIONAL PRACTICE IN THE DIAGNOSIS OF OBSTRUCTIVE SLEEP APNEA AND IN CPAP TITRATION: EVALUATION OF EFFECTS ON SICK POPULATION

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Introduction: Obstructive sleep apnea (OSA) is a common chronic disorder. Different methods can be used for OSA diagnosis and for determining the pressures of continuous positive airway pressure treatment, and their efficiency is a current concern. The application of standard protocols is crucial for an optimal outcome, existing recent international recommendations.
Objective: To investigate whether the international recommendations are currently being followed; determine if there are differences in the population caused by following or not the rules; ascertain the existence of effects in population related to practices currently used.
Methods: Data were provided by one of the largest CPAP home service in Portugal, after which the information was provided by patients through the completion of a questionnaire. Statistical analysis was performed using SPSS.
Results: The sample consisted of 165 individuals. 58.79% of the patients were subject of a diagnostic test and in 88.4% of the cases a CPAP titration method was implemented that does not comply with the international recommendations. Only 60% of the patients demonstrated adherence to CPAP/APAP. In 13% of the patients, values of pathological sleepiness persisted after CPAP/APAP treatment. 59.4% of patients reported taking medication for blood pressure (BP) and at the last review, 38.19% and 6.29% of patients had high levels of systolic and diastolic BP.
Conclusions: These results lead us to propose that most people with OSA are not being diagnosed and treated with CPAP in accordance with international recommendations. Nevertheless, no differences were found in the population showing the benefit of following that rules. Overall, we provide some evidence for the existence of adverse effects of the practices in current use, particularly in adherence to CPAP/APAP, in BP values and in the population sleepiness levels.

***Key words**: OSA. Portuguese population. Standards. Arterial hypertension. CPAP.*

P054. MORGAGNI HERNIA: A REVERSIBLE CAUSE OF CHRONIC RESPIRATORY FAILURE

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Introduction: Morgagni hernia is the rarest type of congenital diaphragmatic hernias (2-3% of all cases). Usually it is diagnosed later in life, incidentally or presents with non-specific chronic respiratory or gastrointestinal symptoms. It can also presents with acute bowel obstruction or intestinal strangulation. Diaphragmatic hernias' diagnosis is confirmed by chest radiographs.
Case report: The authors report a case of a non-smoker, currently 70-year-old Caucasian woman, with previous diagnosis of morbid obesity, arterial hypertension, hypertensive heart disease, hypothyroidism, probable vascular dementia and depression. She was first admitted in 2007 for a one month history of progressive exertional dyspnea, paroxysmal nocturnal dyspnea and lower limb oedema, with no other symptoms. Due to global respiratory failure (pH 7.35, $PaCO_2$ 72,4 and PaO_2 40,2 mmHg with 5L of oxygen per min via nasal cannula) she had to start noninvasive ventilation (NIV). The first chest radiographs showed a right pulmonary lower lobe hypotransparency and the chest CT scan showed a large Morgagni hernia on the right side, with compromise of the right lung volume and contralateral mediastinal deviation, as well as signs of pulmonary hypertension. The echocardiogram confirmed mild pulmonary hypertension (PSAP 49 mmHg). She was referred to Cardiothoracic Surgery, but was refused because of her surgery-related risk. She was discharged on supplemental oxygen (also during ambulation) and domiciliary NIV. Between 2008 and 2012 she was admitted 3 times for decompensated global respiratory insufficiency and for oxygen and ventilatory parameters adjustment. The diaphragmatic hernia was also bigger on the chest radiographs. In 2013 she was admitted 5 times in the context of emesis and gastroparesis, with significant weight loss (BMI 49.5 to 35.7 Kg/m^2). She maintained the need for both oxygen and NIV. A new CT scan was performed which showed increased volume of the Morgagni hernia, which contained part of the transverse colon, all the ascending colon, loops of ileum and distal jejunum, with the insinuation of gastric antrum, leading to passive atelectasis of the middle lobe and right lower lobe and deviation of the mediastinal structures to the left hemithorax. The echocardiogram showed a reduction in PSAP from 49 to 39 mmHg. At the end of the year 2013 she was submitted to reduction and repair of the hernia and gastropexy, with favorable expansion of the right lung and gradual resolution of global respiratory insufficiency. It was possible to discontinue domiciliary NIV, keeping only supplemental oxygen at night at 1L/min, due to little night oxygen desaturation, without evidence of hypoventilation.
Discussion: Being a rare etiology with few cases reported in the literature and usually asymptomatic or presenting with non-specific chronic symptoms, the diagnosis of Morgagni hernia is often not thought of when changes in chest radiographs are present. On the other hand, there is no consensus on surgical indications. With this case we intend to demonstrate the benefit of surgical reduction of this type of hernia, even in cases of chronic respiratory failure, despite the inherent surgical risk.

Key words: *Diaphragmatic hernia. Morgagni hernia. Respiratory failure.*

P055. GIANT SOLITARY FIBROUS TUMOR OF THE PLEURA SUCCESSFULLY RESECTED BY THORACOTOMY – QUESTIONS ON RESECTABILITY EVALUATION

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Introduction: Solitary fibrous tumors (SFT) of the pleura are rare mesenchymal neoplasms especially in the giant form. Because of its rarity, data on the presentation and management of giant SFT derived from scarce literature reports. We describe a case of a successful complete resection of a huge SFT in which the site of origin and resectability was confirmed only at the time of surgery.
Case report: A 76-year-old woman was admitted to our hospital with a 4-month history of dry cough and dyspnea on exertion. Chest radiography demonstrated an opacity on the left hemithorax conditioning contralateral deviation. Chest computed tomography (CT) revealed a heterogeneous bulky mass occupying the entire left lower lobe with 17 × 12.6 × 8.5 cm. Ipsilateral pleural effusion was also found. Pleural effusion analyzes and flexible bronchofibroscopy were not diagnosis. The CT-guided transthoracic biopsy was performed revealing a fibronectin mesenchymal tumor without malignancy features. In order to assess the resectability of the tumor the patient underwent a thoracic magnetic resonance that showed intimate contact with descendent portion of thoracic aorta and extrinsic compression on the left principal pulmonary artery. The patient underwent surgery via a left posterolateral thoracotomy. The mass was identified as completely encapsulated, without pleural or mediastinal adhesions arising from the visceral pleura of the apical segment of the left lower bronchus. An en bloc resection allowed complete removal of the tumor and complete reexpansion of the left lung. Macroscopic analysis of surgical specimen showed a mass with 1,189 g. Histologically, the tumor was composed of fascicles of spindle cells within collagenous stroma. The cellular mitotic index was low, there was no nuclear atypia or necrosis. Immunohistochemical analysis showed diffuse expression of CD34, CD99 and bcl-2 in neoplasic cells. Rare cells expressed positivity for CK8/18. There was no expression for calretinine, EMA or p63. The ultimate diagnosis was a SFT of the pleura with no signs of malignancy. The postoperative course was uneventful and the patient was discharged home on the 7th postoperative day. Although complete surgical resection is associated with a favorable outcome in the majority of the benign cases, long term follow up is required.

Key words: *Giant solitary fibrous tumor pleura.*

P056. DYSPHAGIA AS THE CLINICAL PRESENTATION OF A BRONCHOGENIC CYST

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Introduction: Bronchogenic cysts are benign lesions that, despite being rare, are between the most frequent malformations of the airways. They are localized preferentially in the mediastinum, mainly at the subcarinal level. The more common clinical manifestations are recurrent cough, wheezing, and repeated respiratory infections and they tend to occur on the second decade of life. Rarely they may present as dysphagia, superior vena cava syndrome or appear as a radiologic incidental finding.
Case report: We present the clinical case of a 59-year-old female, ex-smoker (20 UMA), without previous history of pulmonary pathology, complaining about dry cough, progressive dysphagia lasting for one year accompanied by weight loss. Upper gastrointestinal endoscopy revealed extrinsic compression of the esophagus. Thoracic CT identified a macronodular retrotracheal lesion adjacent to the esophagus and bulging the posterior wall of the trachea. Videobroncoscopy revealed extrinsic compression of the same tracheal wall. The patient was submitted to EUS - FNA and it was visualized an anechoid, septated and well delimitated lesion suggestive of a bronchogenic cyst. They proceed to the thoracoscopic resection of that lesion, which confirmed the suspected diagnosis.
Discussion: Bronchogenic cysts typically occur on the first decades of life. Although, a mediastinal lesion shall always raise the suspicion of a bronchial tree malformation without regarding the age or the clinical presentation. The surgical resection of the lesions normally resolves the symptoms as was the case of this patient.

Key words: *Bronchogenic cysts. Dysphagia. Bronchial tree.*

P057. PULMONARY SEQUESTRATION – A CLINICAL CASE

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Introduction: Pulmonary sequestration is a rare malformation characterized by a mass of nonfunctioning lung tissue that receives its vascular supply from a systemic artery. It mainly affects children but may occur in young adults. This anomaly may be classified as intralobar or extralobar sequestration, depending on its relationship with the adjacent pulmonary parenchyma. Patients usually have recurrent respiratory infections or hemoptysis but may also be asymptomatic. Treatment involves surgery with special emphasis on controlling the anomalous blood supply.
Case report: The authors describe a case of a 34-year-old man, ex-smoker for 4 years (8 pack-year), with no other relevant medical history, who was taken to the Emergency Room after two episodes of hemoptysis of small amount, without other associated symptoms. The laboratory tests, chest radiography and arterial blood gas analysis revealed no changes. He underwent bronchoscopy and no active bleeding or endobronchial lesions were observed. The CT scan revealed a geographical area of emphysema in the right lower lobe associated with bronchiectasis, and anomalous vascularization which was supplied by an anomalous vessel emerging from the descending thoracic aorta, and venous drainage through the ipsilateral pulmonary veins. A right lower lobectomy was carried out. Pathology showed an intralobar sequestration. Currently he remains asymptomatic, and is in follow up in the outpatient clinic of the Pulmonology Department
Discussion: Pulmonary sequestration is a rare congenital malformation. Etiology remains unknown. Diagnosis requires a high index of suspicion and should be included in the differential diagnosis of hemoptysis, particularly in younger patients. Surgical treatment has shown excellent results with low postoperative morbidity.

Key words: *Pulmonary sequestration. Rare congenital malformation. Pulmonary lobectomy.*

P058. CYSTIC ADENOID CARCINOMA OF THE LEFT MAIN BRONCHUS WITH TRACHEAL INVOLVEMENT – SURGICAL APPROACH

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Introduction: Cystic adenoid carcinoma (CAC) is a tumor typically originary from the salivary glands and cervical region, but also found in other anatomical regions accounting for 0.2% of all primary lung tumors. Usually it has an indolent growth, but its often locally invasive and may metastize.
Case report: We present the case of a 57-year-old female, with a history of hypertension, obesity, sleep apnea and a pituitary macroadenoma with acromegaly. During the anesthetic induction for the surgery to remove this adenoma there was a severe bronchospasm with hypoxemia. The bronchoscopy showed a massive circumferential infiltration of the medial third of the left main bronchus (LMB), with a significative reduction of its lumen, but with no apparent invasion of the main carina. The biopsy of this lesion confirmed it was a CAC. The complementary evaluation did not show any signs of distant metastasis. The patient was discussed in a multidisciplinary meeting and was proposed for a bronchoplastic resection of the tumor. In September 2013 we performed a left thoracotomy and the LMB and secondary carina (LULB and LLLB) was removed. However the frozen section showed that there was still a positive margin in the proximal end of the LMB. The proximal bronchial rings were successively cut until we reached the main carina, but the frozen section still showed positive margins. Since it was not possible, at that moment, to perform a curative surgery, which would be a left pneumonectomy with a carinal sleeve, it was decided to build a neo-carina with the stumps of the LULB and LLLB and then anastomose this to the main carina. There were no complications in the post-operatory period and the patient was discharged on day 9 post-op. The patient was later re-operated, this time through a median sternotomy and a left pneumonectomy with a carinal sleeve, was performed, with extracorporeal circulation support through the right femoral vessels. The frozen section confirmed that there was no tumor in the tracheal proximal margin nor in the right main bronchus. There were no major complications and the patient was discharged on post-op day 9 with a bronchoscopy showing a good caliber of the new anastomosis and no signs of dehiscence. The final pathology evaluation confirmed the complete excision of the tumor. The patient is currently followed in pneumology and thoracic surgery outpatient clinics and now 9 months after surgery she is clinically well and with no signs of recurrence by CT scan or bronchoscopy.

***Key words**: Cystic adenoid carcinoma. Pneumonectomy with carinal sleeve. Bronchoplastic surgery.*

P059. TRACHEAL DIVERTICULUM – INCIDENTAL FINDING

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Introduction: Tracheal diverticulum is a rare entity, there is not much reliable data about prevalence. They are benign outgrowths on the tracheal wall, more frequently on the right posterior lateral wall of the trachea and occur by herniation of mucosa through a zone of weakness in the muscles of the tracheal wall. In most cases they are asymptomatic and where there are symptoms they are, generally, not specific. The method of choice for diagnosis is cervical and thoracic computed tomography (CT). Bronchoscopy can confirm diagnosis if viewed by orifice communicating with the tracheal lumen, but this may not reveal any alterations.
Case report: The authors present the case of a 72 year old patient, with a history of musculoskeletal disease and hypertension; he had complained of bilateral omalgia, and had had X-rays of chest, shoulder and cervical spine. The chest X-ray showed low density opacity of the upper right mediastinum, thorax CT showed an aerial collection within the area of longitudinal thin wall 7 cm and 3 cm transverse axis, with tracheal diverticulum extending from the cervical area to the carina, always following the right side of the trachea. Clinically there were no respiratory problems and an objective examination did not reveal any symptoms of respiratory difficulty or alterations in lung auscultation. Fiberoptic bronchoscopy revealed a small hole in the middle third of the anterior wall of trachea. The Functional Respiratory Study was normal. As the patient remained asymptomatic, there was no need for any treatment, namely surgery.
Discussion: Despite there being some difficulty in diagnosis because of circumstances, not only because it is so rare, but also because of the symptoms not being specific, tracheal diverticulum is usually identified by chest CT but other imaging tests such as MRI magnetic may be required. After diagnosis, given the fact that it is so mild, in most cases the normal approach taken is conservative, surgery being reserved for younger or obviously symptomatic patients.

***Key words**: Diverticulum. Trachea. Tomography.*

P060. LARGE PULMONARY CONDROMATOUS HAMARTOMA – A CLINICAL CASE

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Introduction: Pulmonary hamartomas are relatively common tumors (occurring in 0.3% of the general population), clinical benign and with slow growth. Their diameter is generally between 1 and 5 cm, however larger lesion can be observed.
Case report: We describe a case of a 61-years-old male patient, who was a metallurgic, born in Curacao and resident in Portugal since the age of 7, with a history of ischemic heart disease, type 2 diabetes mellitus and peripheral arterial disease (followed by Vascular Surgery). He denied having pets. The patient was a smoker (with smoking history of 42 pack-years). In 2011, during a routine consultation, the patient performed a chest radiography that revealed a round mass, with poorly defined boundaries in the lower half of the right lung field. That mass was subsequently confirmed by chest CT. The patient underwent transthoracic needle biopsy which was inconclusive. Despite several contacts, the patient abandoned follow-up. In April 2014 he was admitted to the hospital with dyspnea, back pain and fever with 24 hours of evolution. The examination allowed confirmation of fever and pulmonary auscultation revealed abolished vesicular murmur on the right hemithorax. Diagnostic tests were performed and showed hypoxemia and elevated inflammation parameters in analytical procedures. The chest radiograph showed homogenous rounded opacity in the lower half of the right lung field and blunted ipsilateral costophrenic sulcus. Subsequently the patient performed chest CT that revealed massive right pleural effusion and well-defined rounded mass in the right lung field, with solid nature and multiple calcifications inside, with 8 cm in diameter. Serology for Echinococcus granulosus was negative. Empirical antibiotic therapy was initiated after harvesting hemocultures (negative). The patient underwent ultrasound guided thoracentesis and chest tube insertion. The pleural fluid was suggestive of exudate with neutrophil predominance and pH was 6.9. The bacteriological and cytological examinations were negative. The patient was then transferred to the Thoracic Surgery Unit, in Hospital Pulido Valente and underwent lobectomy of the right lower lobe, decortication and pleurectomy, without complications and with favorable outcome. Pathological examination of the surgical specimen was consistent with 8.5 × 8 × 8 cm condromatoushamartoma.

***Key words**: Hamartoma. Tumor. Benign.*

P061. A CASE REPORT OF PULMONARY SEQUESTRATION

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Hospital Geral-CHUC.

Introduction: The pulmonary sequestration corresponds to an uncommon congenital malformation of the lower respiratory system, consisting of a portion of lung tissue that has not the usual communication with the tracheobronchial tree, and receives the arterial blood supply from an abnormal systemic artery.
Case report: We report the case of a 42 year-old man, a mason, ex-smoker. Past history of polycystic kidney disease (on hemodialysis), hypertensive heart disease, pulmonary hypertension and alcohol abuse (abstinent since 19 months ago). No history of respiratory disease. He went to the emergency room with a complaint of posterior basal pleuritic chest pain with anterior irradiation, exercise induced dyspnea, productive cough and fever with two days of evolution. Physical examination revealed normal respiration at room air, peripheral arterial saturation of 94%, fever, lung auscultation with decreased breath sounds in the bases and wheezing in the right base. Arterial blood gases with partial respiratory insufficiency. The complete blood count was normal, the C-reactive protein was elevated, the HIV serology was negative. On the chest X-ray an oval opacity with an air-fluid level on the right lung. A chest CT was performed and showed a round opacity with well-defined limits (10 × 8 × 7 cm) on the right lower lobe, containing liquid and gaz, suggestive of pulmonary abscess. The patient was hospitalized and treated with piperacillin and tazobactam, for 57 days, with clinical improvement and reduction of inflammatory parameters. However, in the image revaluation, the opacity had less liquid but had similar dimensions. Thus, the patient was proposed for surgery. He underwent a thoracotomy with excision of the lesion of liquid content in the right lower lobe that hinted into the parietal pleura, the cavity was drained and the capsule was removed. The pathology features were consistent with intra-lobar sequestration.
Discussion: We hereby present a case of intra-lobar pulmonary sequestration, in which a lung abscess was the presenting sign. It should be noted that the diagnosis of this malformation is a challenge and that an early surgical treatment prevents the development of complications, as recurrent respiratory infections, bleeding and heart failure.

Key words: *Pulmonary sequestration. Pulmonary abscess.*

P062. LEFT SUPERIOR LOBECTOMY WITH SLEEVE BRONCHOPLASTY IN A 12 YEAR-OLD BOY

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Case report: 12 year-old boy, previously healthy, develops a complain of persistent dry cough that evolves into recurrent hemoptoic crisis. This clinical scenario motivates a complementary diagnostic study that identifies a lung carcinoid tumor in the left superior bronchus with invasion of the left main bronchus. The patient was submitted to the resection of the left superior lobe with sleeve bronchoplasty. The procedure went with no complicações. It was followed by a post-operatory free from complicações and the thoracic drainage was removed at the fifth day and the patient was released at the seventh day after surgery, without limitations. First follow-up appointment at the fifteenth day after surgery without any respiratory limitation, movement limitation or pain complain. Bronchoscopy performed one month after surgery showed good anastomosis patency and excellent cicatrization.
Discussion: The lobectomy with sleeve resection is an unusual surgery, mainly in the pediatric population, that has been gaining popularity because it allows the preservation of healthy lung parenquima avoiding unnecessary pneumectomy and its multiple long term complications. Even though the high complexity and the risks inerent to a bronchial anastomosis, it is demonstrated that pulmonary resections with sleeve bronchoplasty bring benefit to the patient, do not compromise R0 oncological resection and offer better long term results when compared to pneumectomy. This kind of procedure should be mandatory when there is indication, reflecting the specialization of a thoracic surgery department.

Key words: *Thoracic surgery. Bronchoplasty. Sleeve. Bronquial anastomosis. Pediatric.*

P063. WHEN THORACIC SURGERY IS NEEDED TO DIAGNOSE TUBERCULOSIS – IN THE CONTEXT OF A CASE REPORT

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Case report: JFCR, 35 years of age, male, natural and resident in Paços de Ferreira, referred to Pulmonology Consultation in 2012 because of radiographic abnormalities. He had no symptoms or signs – respiratory, gastrointestinal, urinary, etc. At physical exam he had good general state, normal oxygen saturations, normal blood pressure and normal cardiopulmonary auscultation, with no abnormality in the physical exam. As pathological background he had renal lithiasis, history of sacrococcygeal cyst with no other relevant pathologies; he mentioned a previous (10 years later) negative tuberculosis screening in the context of a relative with the disease – screening performed at Military Hospital of Oporto. He was ex-smoker for 10 years (5 packet-year), with mild alcohol consumption, without other habits. He had no allergies. In the systems review he had no abnormality. On chest X-ray it was evident 2 nodular hypo-transparent lesions on the left upper lobe with near 3 cm (the bigger one), with calcification, well defined borders, without cavitation or air-fluid level, without other parenchymal or mediastinal abnormalities, without pleural effusion. On chest CT we could see "multiple lung nodules in both sides, mainly on vertices (…) many with calcifications of residual nature. The bigger nodule, with near 30 mm showed an atypical calcification pattern (…)". On blood analysis, no abnormalities were found on CBC, renal and liver function, negative CRP and negative tumor markers. We performed video-bronchoscopy – the tracheobronchial tree showed no abnormality and the bronchial and bronchial-alveolar lavage had negative results on microbiology, mycobacteria and on cytology. He performed a PET-scan: "the pulmonary nodules show no avidity to FDG (…) the probability of malignancy is decreased; very subtle avidity on part of the bigger nodule (SUV max 1.3) – probable related to inflammatory pathology." The situation was discussed with the patient and he preferred to maintain imaging surveillance. At 3 and 6 months chest CT were performed without any change – eventual growing to 35 mm of the bigger nodule (CT scans performed on different places). The case was presented and discussed at Chest Oncology Group Reunion – because of the patient young age and of the uncertain behavior of the bigger nodule and in spite of the absence of symptoms and the apparent "innocent" calcified nodules it was decided to remove them with surgery. The proposal was discussed again with the patient and he agreed with the surgery. A VATS was performed to excise the bigger lesion on left upper lobe. The surgery report noticed "nodular lesion (…) very adherent to chest wall with iatrogenic opening – purulent exudate observed (…)". On pathological report it was noticed "2 cavitated lesions (…) chronic inflammatory infiltration with inner ne-

crosis (…) there were no granulomas identified neither malignant cells (…) Ziehl-Neelsen without mycobacteria". On the pus mycobacterial exam extracted from the nodule: mycobacteria observed (1-3 per camp); nucleic acid amplification for Bk positive.
Discussion: The current case-report confronts us with the problematic of the lung nodules on young ages without any symptoms and with the occasional need to perform surgery to diagnose a simple disease as pulmonary tuberculosis.

Key words: *Surgery. Thoracic. Nodules. Tuberculosis.*

P064. PULMONARY ALVEOLAR MICROLITHIASIS – A RARE DISEASE

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Introduction: Pulmonary alveolar microlithiasis (PAM) is a rare, chronic and idiopathic condition, characterized by multiple alveolar calculi (calcospherites), in the absence of phosphocalcic metabolism disorders. Characteristic radiological findings are well-defined calcified pulmonary nodules (< 1 mm), with diffuse distribution or predominantly in middle and lower lung zones, adopting a typical pattern described by some authors as a "sand-storm". Interlobular septa thickening, subpleural linear calcification, ground glass and subpleural cysts are other common radiological findings. The geographic clustering of patients and the detection of many familial links between most of cases strongly suggests a genetic etiology, with an autosomal recessive mode of inheritance (gene SLC34A2). Most patients are young adults and asymptomatic at diagnosis, which is usually made occasionally.
Objective: We present a case of PAM, observed in our outpatient Pulmonology consultation, associated to a review of the literature of this rare disease.
Case report: A 69-year-old man, former smoker (90 pack-year), retired (shopkeeper), with arterial hypertension, diabetes mellitus type 2 and left hemiplegia following cerebrovascular accident 15 years before, performed a chest X-ray after a fall with chest trauma, which reveled a diffuse reticulo-micronodular pattern. Patient reported only chronic dry cough and denied family history of lung disease. Physical examination showed basilar crackles on lungs auscultation. High resolution computed tomography revealed interlobular septal thickening and random calcified micronodules, with peripheral predominance, associated to significant architectural distortion. Pulmonary function tests were normal, as well as bronchoalveolar lavage cytological examination and differential cell count. Transbronchial biopsy showed calcospherites within the alveolar spaces suggestive of PAM. Serum levels of calcium and phosphorus were within normal ranges. Patient is currently under follow up in our consultation (about 1 year after diagnosis), without functional or radiological evolution.
Discussion: So far, less than 800 cases of PAM have been reported in the medical literature, mostly from Turkey, Japan and Italy. To the best of the present author's knowledge, this is the first case of PAM reported in Portugal. Diagnosis was made occasionally in the absence of symptoms despite extensive radiological findings, what is common in this disease. Although no genetic study have been performed, there was no evidence of family history of lung disease. Lung biopsy usually confirms the diagnosis although, according to some authors, may not be essential in the presence of typical radiologic changes. No effective medical treatment exists. Long term prognosis is guarded and evolution to respiratory failure occurs in most cases.

Key words: *Pulmonary alveolar microlithiasis. Pulmonary calcifications.*

P065. A CASE REPORT OF A CESAREAN SECTION COMPLICATED BY HEMOPTYSIS: DIAGNOSIS AND ENDOSCOPIC EVOLUTION OF A TRACHEAL LACERATION TREATED WITH CONSERVATIVE APPROACH

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Introduction: Tracheal injury is an uncommon but important condition, since it is traditionally associated with a high morbidity and mortality. The most common causes are head, neck or chest injuries, polytrauma, stab or firegun wounds and even iatrogenic injury during invasive medical procedures (tracheal intubation, tracheostomy, bronchoscopy, placement of prostheses, esophagectomy). The incidence of tracheobronchial lacerations after intubation is 1:20,000. However, some studies show an increased incidence in emergency situations - 15%.
Case report: The authors present a case of a young puerperal woman of 31 years, with no relevant personal history. The patient had a pregnancy of 38 weeks with good prenatal care, until entering the Emergency Department of Obstetrics due to malaise, abdominal pain, vomiting and fever. Due to fetal bradycardia, underwent urgent caesarean section on the same day, which revealed placental abruption, with expanding hematoma and significant blood loss during surgery. In the immediate postoperative period, the patient presented with dyspnea and hemoptysis, analytically there was a 3 g/L drop on haemoglobin levels, requiring two transfusions of erythrocyte concentrate. The chest CT revealed the presence of multiple bilateral alveolar infiltrates, mainly involving the left lower lobe and the right lower lobe, but also the middle lobe and right upper lobe. There were no obvious signs of central or segmental pulmonary thromboembolism. In the following hours, it was performed a bronchoscopy which showed bright blood in the naso and oropharynx from the tracheobronchial tree. The trachea presented with bright blood in large quantities and a large clot in the posterior wall of the trachea. Subsequently, we performed instillation of adrenalin followed by mechanical clot removal, evidencing a laceration in the distal third of the trachea which stretched for 6/7 cm long and 2-3 cm wide, with marked collapse/herniation of posterior tracheal wall on expiration. The patient remained hemodynamically stable, requiring only transfusion support, so we opted for a conservative approach to tracheal laceration. On endoscopic reassessment at 48h, active bleeding was no longer noted, with evident herniation of peritracheal mediastinal structures into the lumen during expiration. Two weeks after the episode, the lesion was already covered with reddish and slightly friable granulation tissue, with reduction of bulging on expiration, so the patient was discharged. We conducted a new endoscopic control one month after the initial episode, in which only a small area of granulation tissue was visible. The last endoscopic review was conducted seven months after admission, with malacia of the posterior tracheal wall at the site of previous laceration. On Inspiration was visible a depression at this location and, on expiration, a marked bulging, significantly reducing the tracheal lumen.
Discussion: The present case is intended to illustrate a rare complication of a common procedure, endotracheal intubation, and its endoscopic developments, in which we opted for a conservative approach.

Key words: *Tracheal laceration. Conservative approach. Puerperal.*

P066. BILATERAL TENSION PNEUMOTHORAX SECONDARY TO JET VENTILATION IN PREOCCLUSIVE TRACHEAL TUMOUR

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Introduction: Interventional pulmonology has evolved significantly in recent decades. Complications associated with various endoscopic techniques are however underreported. Barotrauma, although rare, is one of the potential complications of jet ventilation, often applied during rigid bronchoscopy (RB).
Case report: A 56 year-old-female, referred with a tracheal tumour, identified on thoracic CT, located in the middle third of the trachea and occluding 75-80% of the tracheal lumen. RB was scheduled for diagnostic and therapeutic procedures. Anaesthetic induction with manual ventilation was performed, followed by intubation with tracheoscope. The procedure was uneventfully. Jet ventilation was applied via the lateral port of the tracheoscope. A polypoidtumour, rounded and smooth, hyper vascularized, was seen in the trachea causing 80% luminal obstruction. Immediately after the onset of jet ventilation there was significant gastric distension that increased after each insufflation and was associated with reduced chest expansion. Nasogastric intubation was performed and gastric distension diminished. About two minutes after the beginning of the procedure, the patient progressed to cardiac asystole. The tracheoscope was removed and cardiac resuscitation manoeuvres were performed. Cervical subcutaneous emphysema and bilateral pneumothorax semiology were detected, leading to immediate decompression with large bore needle and syringe, followed by bilateral placement of rigid chest tubes, with hemodynamic recovery. A few days later, the patient was resubmitted to RB with modified ventilatory parameters (lower pressure of jet ventilation and lower respiratory rate), which allowed to performed mechanical and thermal debulking without complications. The histological diagnosis of neuroendocrine carcinoma, moderately differentiated, was made. In addition to the inherent risk of barotrauma induced by jet ventilation, we believe that the significant reduction of tracheal lumen was responsible for an increase in airway pressure and air trapping due to impaired passive exhalation, which resulted in bilateral tension pneumothorax, pneumomediastin, and cardiac arrest. Only immediate decompression of the pleural space along with resuscitation manoeuvres allowed recovery from this dramatic and unexpected complication.

Key words: *Barotrauma. Tension pneumothorax. Jet ventilation. Rigid bronchoscopy.*

P067. FOREIGN BODY ASPIRATION AS A CAUSE OF PSEUDO – HEMOPTYSIS

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Introduction: Foreign body (FB) aspiration can be a life-threatening situation. It has a low prevalence in adults (0.66 per 100,000), mostly occurring in the 6th and 7th decades of life when the airway protective mechanisms become ineffective. Aspiration risk factors are age over 75 years, neurological disease and/or decreased level of consciousness. Clinical presentation depends on the location of the foreign body in the airway. In adults it is usually sub-acute due to frequent distal location of the FB in the bronchial tree. Cough is the most common symptom (80%) followed by those from the related complications (pneumonia, bronchial stenosis, bronchiectasis). Although only 10% of the FB are radiopaque, chest radiograph may be useful in the diagnosis since there may be indirect signs of obstruction. However, bronchoscopy is usually required for diagnosis in addition of being a therapeutic method.
Case report: Authors present a case of a 66 year old woman, non-smoker, with a history of severe bipolar disease, hypertension, type 2 diabetes mellitus and dyslipidaemia. She had recent hospitalization because of septic shock with respiratory origin due to multiresistant *Pseudomonas aeruginosa*, being discharged 18 days before. Admitted to the emergency department with clinical manifestations suggestive of nosocomial respiratory infection, thus empirical antibiotic therapy was initiated. While in the emergency department the patient had a significant "hemoptysis" episode (not quantified) with analytical and haemodynamic repercussion, with spontaneous resolution. Later, she began having persistent productive cough. The patient performed chest CT that showed cotton-like bibasilar infiltrates and cylindrical bronchiectasis. She underwent bronchoscopy under general anaesthesiathat found a FB corresponding to a dental prosthesis with metal bridge anchored in the oropharynx. The remaining bronchoscopy showed no potentially bleeding lesions. Proceeded to the FB removal with the support of Otorhinolaryngology. She had satisfactory clinical outcome with resolution of the infection and disappearance of cough.
Discussion: Despite this is a rare clinical condition in adults, FB aspiration should be considered in patients with recurrent pulmonary infections, hemoptysis or lung abscess, especially if they have risk factors. Bronchoscopy represents not only a diagnostic technique but also a method to remove the FB with high success rates, avoiding complications and subsequent sequels.

Key words: *Foreign body. Pseudo-hemoptysis. Bronchofibroscopy.*

P068. RECURRENT PNEUMONIA BY FOREIGN BODY – CLINICAL CASE

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Introduction: The term recurrent pneumonia includes in its definition several episodes of pneumonia or prolonged evolution of persistent pneumonia. It may occur as a result of structural lung disease or extrinsic factors. In these cases it is necessary to conduct an early evaluation of the etiologic factors.
Case report: The authors report the case of an 82 year old man with a history of obstructive sleep apnea syndrome under CPAP, type 2 diabetes mellitus, arterial hypertension and atrial fibrillation under oral anticoagulation. The patient was admitted for acute on chronic renal failure in the context of diarrhea and dehydration, that, in the course of hospitalization developed cough, purulent sputum, and progressive worsening dysphagia. Laboratory tests showed elevated inflammatory parameters and the Chest X-ray showed left perihilar opacity. As the diagnosis of pneumonia was established the patient was treated sequentially with the following antibiotics: amoxicillin/clavulanic acid and azithromycin, levofloxacin, vancomycin and piperacillin/tazobactam, without improvement. The patient was submitted to a chest CT that showed a metal body density image along the posterior structures of the pharynx. After discontinuation of anticoagulation, he underwent a bronchoscopy, in which a metallic foreign body was identified in the epiglottis, fixed to the oro and laryngopharynx mucosa. After removal, it was found to be a dental prosthesis.
Discussion: The study of the etiology of this case was delayed because the patient had no risk factors for aspiration or suggestive clinical history of foreign body aspiration. The authors present it to reinforce the importance of initiating precociously the etiologic investigation in the case of pneumonia with a prolonged course.

Key words: *Pneumonia. Foreign body.*

P069. MEDIASTINITIS AS A COMPLICATION OF ENDOBRONCHIAL ULTRASOUND-GUIDED TRANSBRONCHIAL NEEDLE ASPIRATION

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Introduction: Endobronchial Ultrasound-Guided Transbronchial Needle Aspiration (EBUS-TBNA) is a minimally invasive technique frequently used for the evaluation of mediastinal adenopathy and lung cancer staging.
Case report: We report a case of a 68 years-old male, former smoker of 50 pack-years, with ischemic cardiomyopathy, high blood pressure, diabetes mellitus and COPD. In a routine thoracic CT scan a 10 mm spiculated pulmonary nodule was detected in the periphery of the right upper lobe. PET-scan showed a high uptake of the referred nodule (SUV 3.55) without any other abnormalities (cT1aN0M0). In November 2013, a right upper lobectomy with mediastinal lymphadenectomy (4R, 7 and right hilar lymph nodes) was performed. The pathology confirmed an adenocarcinoma (CK7 +; TTF1+; CK5 neg) pT1aN0Mx. The patient was on oncological follow-up without adjuvant treatment and in March 2014 a routine CT scan showed an increase of the mediastinal lymph nodes at stations 4R (22 × 15 mm) and 7 (30 × 19 mm). This situation was reported to the thoracic oncological board and it was decided to perform EBUS-TBNA. The final cytological result was granulomatous foreign body reaction (the Surgeon used Surgicel® as a bleeding controller on these stations). Ten days after the EBUS-TBNA the patient was admitted in the emergency department with an intense non-pleuritic thoracic pain, located in the anterior chest wall. He had no fever. CT scan diagnosed a mediastinitis and he underwent a cervical mediastinoscopy in order to drain two collections on the level of stations 4R and 7. There was extensive fibrosis and only station 4R could be drained. Two days after the procedure, the patient presented signs of septic shock and station 7 was drained by right posterior thoracotomy. Twenty days after the patient was discharged home, free of symptoms and without identification of the responsible microorganism.
Discussion: EBUS-TBNA is considered a safe procedure with extremely low rates of complications. Our case report alerts physicians to the risk of rare but life-threatening complications of this technique, such as mediastinitis.

***Key words**: Cancro do pulmão. Mediastinite. Punção aspirativa. Ecoendoscopia brônquica.*

P070. FOREIGN BODY ASPIRATION IN THE LEFT BRONCHIAL TREE: APROPOS OF TWO CASES

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Introduction: Foreign body aspiration (FBA) is a potentially life-threatening event. It is more common in children and has a lower rate in adults (0.66 per 100,000). The incidence appears to have no gender preference. Risk factors in adults include loss of consciousness due to trauma, drug or alcohol intoxication, or anesthesia. The most common site of aspiration is the right main bronchus.FBA in adults usually has a subtle presentation with a paucity of image findings, being crutial a high grade of clinical suspicion. Direct visualization of the foreign body by bronchoscopy is required for definitive diagnosis and treatment.
Case reports: In April of 2014 were hospitalized, in the Internal Medicine service, two young men with an history of intravenous drug abuse, both with FBA logded in the left upper lobar bronchus (ULB). Case 1: male, 32-year-old. Former iv drug user with a history of intravenous consumption. Patient with HIV infection in AIDS stage and HCV infection. Admitted for anorexia, prostration and fever with one month evolution. He reported having chronic cough. No other lung related symptoms relevant for this case. Chest radiograph presented left reticular infiltrate and computed tomography (CT) of the chest revealed the presence of an endoluminal image, in left ULB, favouring the presence of a foreign body. Bronchoscopy revealed the presence of an intravenous injection needle in the region of ULB, with granulation tissue around it. The object was removed by rigid bronchoscopy. Case 2: male, 47-year-old. Former iv drug user with an history of intravenous consumption. Patient with HIV infection in AIDS stage and HCV infection. Admitted for study of cough with hemoptoic sputum with two months of evolution with associated pleuritic pain and weight loss. Chest radiograph presented no significant alterations. Chest CT showed a foreign body in the main bronchus and left ULB. Bronchoscopy revealed a foreign body (intravenous injection needle) located in the ULB. Removal by rigid bronchoscopy was performed uneventfully. After reviewing the history we assume that the needles may have been aspirated during a period of unconsciousness, immediately after drug injection. Since the location of foreign body is often the right bronchial tree and, in both cases, the otherwise was found, led us to conclude that the position in which individuals injected is possibly related to the location of the object. Both patients preferentially used the left arm venous circulatory system for administration, bended to the left side and holding the needle with their mouth while applying the tourniquet on the arm, leaving the left bronchial tree more exposed during FBA.
Discussion: This explanatory two clinical cases with FBA observed in the same period of hospitalization, resulting in the same location and the same history of drug addiction and the same technique of administration of drugs, aims to highlight a rarity described in the literature and draw attention to a subtle clinical and imaging presentation, and therefore the crucial high grade of clinical suspicion needed.

***Key words**: Foreign body aspiration. Adult. Bronchoscopy. Needle.*

P071. NECROTIZING PNEUMONIA – WHEN SURGERY IS NECESSARY

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Introduction: Necrotizing pneumonia is a rare complication of bacterial pneumonia and it is characterized by the rise of necrotic foci in consolidated areas. Its severity as well as its morbi-mortality is either due to a virulence factor of the microorganism or a predisposing factor of the host. The treatment with broad-spectrum antibiotics and supportive care is successful in most cases but surgical approach may occasionally be required.
Case report: The authors report a case of 42-year-old female patient, with a history of smoking, drug addiction and chronic hepatitis C, who presented with altered state of consciousness, nausea, vomiting and diarrhea with 3 days of evolution. On physical examination the patient experienced disorientation, tachycardia, tachypnea, fever, hypotension, O_2 saturation of 84% (FiO_2 21%) and decreased breath sounds on the right hemithorax. Laboratory studies showed an increase in CRP, leukopenia and severe partial respiratory insufficiency. The chest radiograph showed an opacity of the two lower thirds of the right lung. Invasive ventilatory support was required due to deterioration of the clinical condition. The patient was started on empirical antibiotherapy that was subsequently di-

rected to *Klebsiella pneumoniae*, *Stenotrophomonas maltophilia* and *Candida tropicalis* isolated in the tracheal aspirate and *Candida tropicalis* in the blood culture. A chest CT scan was performed due to radiological aggravation and persistence of infection parameters, which revealed changes consistent with necrotizing pneumonia occupying the entire right lung. The patient then underwent right pneumonectomy, which was successful, with a favorable clinical outcome.
Discussion: Necrotizing pulmonary infections are rare but potentially fatal. Surgical therapy is an option, when medical treatment fails, and it aims to stabilize the patient and remove the necrotic lung. The type of resection depends on the extent of the necrotic process and it should always be as conservative as possible. However, pneumonectomy may be necessary, as it happened in this case.

Key words: *Necrotizing pneumonia. Pneumonectomy.*

P072. SPONTANEOUS PNEUMOMEDIASTINUM SECONDARY TO COCAINE NASAL INSUFFLATION

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Introduction: Chest pain is a common presenting symptom of cocaine users in the emergency department. Pneumomediastinum is an uncommon complication of cocaine abuse that occurs more commonly when cocaine is smoked, but can also occur when cocaine is nasally insufflated. By a case report, we present a spontaneous pneumomediastinum secondary to cocaine insufflation and review the necessary thorough work up and management.
Case report: A previously healthy 27 year-old male presented to the emergency department with chest pain and dyspnea. He was a chronic and habitual user of cocaine, heroin and tobacco. He admitted to have used about 5 grams of intranasal cocaine and several shots of vodka in the previous night. The pain awoke him from sleep and was constant, substernal and pressure-like, 10/10 in severity, exacerbated by movement and deep inspiration and alleviated with rest. There was no history of penetrating trauma or severe respiratory infection. Oh physical examination, his vital signs were stable and a subcutaneous emphysema on the neck and upper chest was palpable; pulmonary auscultation was clear, cardiac sound were rhythmic, without murmurs, but with mediastinal crunch (Hamman's sign), and abdomen was soft and non-tender. Blood analysis revealed no relevant alterations. Urine toxicology screening for cocaine proved positive. Electrocardiogram showed a normal sinus rhythm without arrhythmia or ST segment changes. The chest X-ray revealed pneumomediastinum and subcutaneous emphysema, which was confirmed by a thorax computed tomography. Esophageal rupture or bronchial tree laceration were ruled out. During hospitalization, the patient recovered rapidly without intervention other than oxygen and his chest radiograph returned to normal after 3 days.
Discussion: When evaluating a patient with chest pain and history of cocaine use, the physician should consider spontaneous pneumomediastinum in the differential diagnosis.

Key words: *Pneumomediastinum. Thoracic pain. Cocaine. Tobacco. Emergency.*

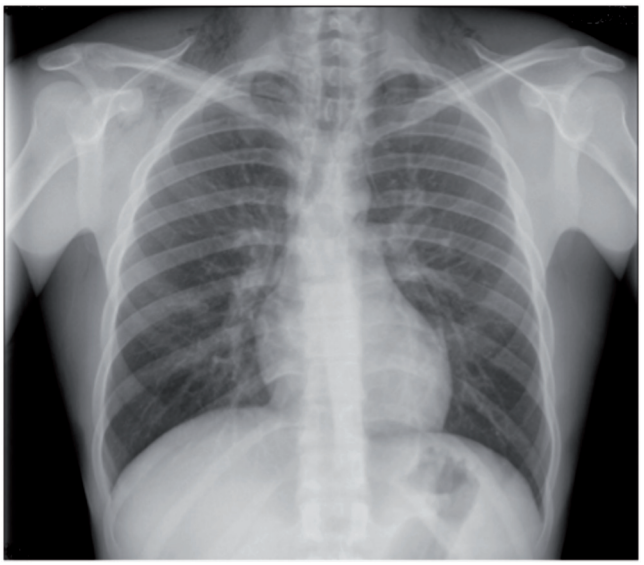

Fig. 1 - P072

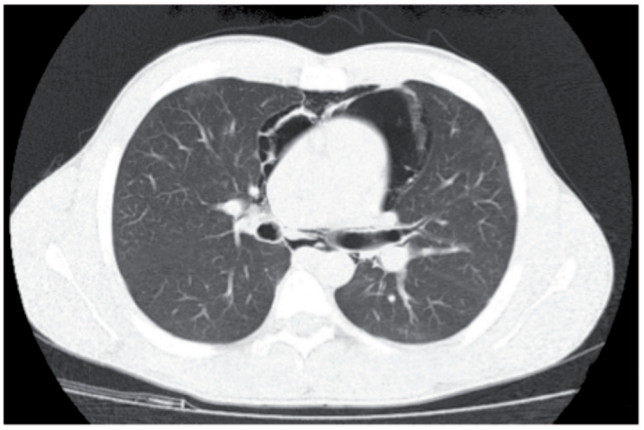

Fig. 2 - P072

P073. ONCE-DAILY TIOTROPIUM RESPIMAT® AS ADD-ON TO AT LEAST MEDIUM TO HIGH-DOSE ICS, WITH OR WITHOUT LABA, IMPROVES LUNG FUNCTION IN PATIENTS WITH SYMPTOMATIC ASTHMA, INDEPENDENT OF ALLERGIC STATUS

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Introduction: A substantial number of patients have symptomatic asthma despite treatment according to guidelines. Several studies have confirmed that tiotropium Respimat®, a once-daily long-acting anticholinergic bronchodilator, improves lung function in symptomatic patients receiving at least medium-dose ICS ± LABA (Kerstjens et al. NEJM 2012;367:1198-207; Bateman et al. JACI 2011;128:315-22). Here we examine whether the atopic and/or allergic status of patients in these trials influenced their response to tiotropium Respimat®.

Table - P073

Adjusted mean difference for tiotropium		IgE ≤/> 430μg/L	Interaction	Eosinophilis ≤/> 0,6 × 10^9/L	Interaçtion[a]	Clínical judgement no/yes	Interaction
Respimat® from placebo(mL)			p value[a]		p value		p value[a]
PrimoTinA-asma®	n[b]	336/377		654/175		335/516	
Tiotropium Respimat® 5 μg	PeakFEV_1 (0-3h)	148/102	0.742	115/58	0.7021	76/130	0.2114
	TroughFEV_1	127/89	0.6209	103/52	0.7542	94/91	0.4099
MezzoTinA-asma®	n[b]	356/610		769/201		349/624	
Tiotropium Respimat® 5 μg	Peak FEV_1 (0-3h)	168/193	0.9677	170/240	0.2375	180/189	0.6233
	TroughFEV_1	139/152	0.8437	137/182	0.5148	138/153	0.6727
MezzoTinA-asma®	n[b]	364/614		779/203		349/635	
Tiotropium Respimat® 2,5 μg	PeakFEV_1 (0-3h)	197/237	0.9677	236/176	0.2375	243/213	0.6233
	TroughFEV_1	167/188	0.8437	185/158	0.5148	209/164	0.6727

[a]Fortreatment × subgroup interaction; [b]Values for active and placebo groups combined. ICS: Inhaled corticosteroids. LABA: Long acting β2 agonist.

Methods: Two 48-week trials of tiotropium Respimat® 5 μg (PrimoTinA-asthma®: NCT00776984, NCT00772538) in patients (n = 912) on high-dose ICS+LABA; two 24-week trials of tiotropium Respimat® 5 μg and 2.5 μg (MezzoTinA-asthma®: NCT01172808, NCT01172821) in patients (n = 2,100) on moderate-dose ICS. Pre-planned analyses (pooled populations) were performed in two subgroups defined at baseline as total serum IgE ≤ or > 430 μg/L or blood eosinophils ≤ or > 0.6 × 10^9/L or clinical judgement of allergic status (no or yes).
Results: Tiotropium Respimat® 5 μg or 2.5 μg improved peak and trough FEV1 vs placebo (table) independent of IgE, eosinophil count and clinical judgement.
Conclusions: Once-daily tiotropium Respimat® as add-on to ICS or ICS+LABA in patients with moderate to severe symptomatic asthma reduces airflow obstruction, apparently independent of their atopic and/or allergic status.
Results presented at the annual Congress of the European Academy of Allergy and Clinical Immunology (EACCI), Copenhagen, Denmark, 7-11 June 2014.

***Key words**: Tiotropium. Respimat. Asthma. Lung function. ICS. LABA.*

P074. TIOTROPIUM RESPIMAT® ADD-ON THERAPY TO INHALED CORTICOSTEROIDS (ICS) + LONG-ACTING ß2-AGONISTS (LABAS) IN PATIENTS WITH SYMPTOMATIC SEVERE ASTHMA: EFFICACY BY LEVEL OF AIRWAY OBSTRUCTION

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Introduction: In two replicate Phase III trials (NCT00772538 and NCT00776984), once-daily tiotropium 5 μg delivered via the Respimat® inhaler (tiotropium Respimat®) improved lung function in patients with severe asthma who remained symptomatic despite treatment with ICS + LABA. Other studies have demonstrated the efficacy of tiotropium Respimat® 5 μg and 2.5 μg in patients with mild or moderate asthma. In our study of severe asthma we have analyzed the efficacy of tiotropium Respimat® 5 μg in patients with different degrees of airflow obstruction.
Methods: These were two replicate, double-blind, placebo-controlled, 48-week, parallel-group studies of once-daily tiotropium Respimat® 5 μg versus placebo. Inclusion criteria included: age 18-75 years; ≥5-year history of asthma diagnosed before age 40; seven-question Asthma Control Questionnaire score ≥ 1.5; ≥ 1 exacerbation during the previous year; post-bronchodilator forced expiratory volume in 1 second (FEV_1) ≤ 80%; life-long non-smoker or ex-smoker (< 10 pack-years). Patients must have been receiving treatment with high-dose ICS (≥ 800 μg/day budesonide or equivalent) and LABA for ≥4 weeks prior to screening. Exclusion criteria included diagnosis of chronic obstructive pulmonary disease or significant lung disease other than asthma. Primary lung function endpoints were peak FEV_1 (0-3h) and trough FEV1 response (difference from baseline) assessed at 24 weeks. Pre-specified analyses of the two trials (pooled population) were performed to evaluate the treatment effect at 24 weeks in subgroups defined by < 60% and ≥ 60- < 80% of predicted post-bronchodilator FEV1 values at screening.
Results: In total, 912 patients were randomized to once-daily tiotropium Respimat® 5 μg (n = 456) or placebo (n = 456). Baseline patient demographics were comparable across treatment groups. In the analysis of post-bronchodilator FEV_1 (percent predicted), statistically significant improvements in peak FEV_1 (0-3h) and trough FEV_1 responses, versus placebo, were observed with tiotropium Respimat® 5 μg in the < 60% subgroup (both p < 0.001) and the ≥60- < 80% subgroup (p = 0.015 and p = 0.022, respectively) (table). Overall, improvements in peak FEV_1(0-3h) response and trough

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		PeakFEV1 (0-3h)response (mL)		Trough FEV1response(mL)	
% predicted postbronchodilator FEV1	Treatment	Adjusted mean of difference (95%CI)	p value	Adjusted mean of difference (95%CI)	pValue
< 60%	Tiotropium Respimat® (n = 165)[a]	170 (86, 254)	< 0.001	139 (63, 215)	< 0.001
	Placebo (n = 171)[a]				
≥ 60% - < 80%	Tiotropium Respimat® (n = 255)[a]	70 (14, 127)	0.015	61 (9, 113)	0.022
	Placebo (n = 251)[a]				

Interaction p values: Peak FEV1 (0-3h) = 0,152; Trough FEV1 = 0.103. [a]Number of patients with measurements at week 24.

FEV_1 response with tiotropium Respimat® were numerically almost twice as high in the < 60% predicted post-bronchodilator FEV_1 subgroup as in the ≥ 60- < 80% subgroup. However, because of large overlapping confidence intervals (CIs), there was no statistically significant difference between subgroups (table).
Conclusions: Once-daily tiotropium Respimat® 5 μg is an effective bronchodilator when added to ICS + LABA in patients with symptomatic asthma. Although no statistically significant difference between subgroups was observed, tiotropium Respimat® may provide greater spirometric benefit in patients with more severe airflow obstruction.
Results presented at annual congress of American Thoracic Society (ATS), San Diego, USA EUA, 16-21 May, 2014.

Key words: *Tiotropium. Respimat. ICS. LABA. Severe asthma. Airway. Obstruction.*

P075. REAL-LIFE EFFICACY AND SAFETY OF OMALIZUMAB IN PORTUGUESE PATIENTS WITH PERSISTENT UNCONTROLLED ASTHMA

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Introduction: Real life effectiveness, safety and use of omalizumab in Portuguese patients with uncontrolled persistent allergic asthma are not entirely known. The objective of this report was to evaluated in a post-marketing, non-interventional, observational registry, of the Portuguese population included in the eXpeRience study.
Methods: The methods used in this report are the same as the global eXpeRience applied to Portuguese subpopulation. Patients with uncontrolled allergic asthma who initialized omalizumab within the previous 15 weeks were enrolled and received omalizumab add-on therapy for 24 months. Physician's global evaluation of treatment effectiveness (GETE), asthma symptoms and control (ACT score), quality of life (mini-AQLQ score), exacerbations, and serious adverse events (SAE) were reported.
Results: Of the 943 patients recruited in the eXpeRience registry, 62 patients were from Portugal. Of them 62.1% were observed to be responders with good/excellent GETE assessment at Week 16. Clinically meaningful improvements in asthma control (ACT score) and quality of life (mini-AQLQ score) were observed with omalizumab therapy at Months 12 (mean change: +7.7 [n = 35]; +2.1 [n = 20], respectively) and 24 (mean change: +7.0 [n = 26]; +2.7 [n = 13], respectively). Asthma symptoms and rescue medication usage were reduced to ≤1 day/week at Month 24 from a baseline of ≥3.5 days/week. Proportion of patients with no clinically significant exacerbations increased from 6.5% during pre-treatment (n = 62) to 50% at Month 12 (n = 54) and 60% at Month 24 (n = 45).
Conclusions: The findings from the Portugal subpopulation of eXpeRience registry confirm that omalizumab add-on therapy is efficacious and well tolerated in management of uncontrolled persistent allergic asthma. Another pertinent issue is the fact that the Portuguese subpopulation response is similar to the international population average of the study.

Key words: *Omalizumab. Allergic asthma. Anti-immunoglobulin E. Asthma control. Exacerbations. Observational study.*

P076. ASSESSMENT OF INHALATION TECHNIQUE IN CLINICAL AND FUNCTIONAL CONTROL OF ASTHMA AND COPD

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Introduction: COPD and asthma affect almost 300 million individuals worldwide. Inhaled therapy is often associated with technical errors that reduce efficacy and compliance.
Objective: To evaluate the inhalation technique and its relation with clinical and functional control in Asthma and COPD.
Methods: We conducted an analytical cross-sectional study using a convenience sample including patients with asthma and COPD and treated with any type of inhaler device. For each patient were collected demographic data, inquiry about previous teaching of inhaler technique and respiratory functional assessment (RFA) by spirometry. We evaluated the inhalation technique in: Step 1 - previous expiration; Step 2 - device activation; Step 3 - inspiration; Step 4 - final apnea. The clinical control was assessed from the questionnaires Asthma Control Test (ACT), Control of Allergic Rhinitis and Asthma Test (CARAT), modified Medical Research Council (mMRC) and COPD Assessment Test (CAT).
Results: From a total of 62 subjects, 74.19% made at least one error in inhalation technique mainly during step 1 (53.2%). History of previous education of inhalation was associated with lower number of present errors (p = 0.014). There was no association between the

number of errors and age (p = 0.321), years of diagnosis (p = 0.119) or RFA (p > 0.05). In asthma an association was found between lower number of errors and ACT (p = 0.032) and CARAT (p = 0.008).
Conclusions: Previous teaching of inhaler technique has a positive impact on its future performance. We found that most patients make mistakes in inhaler technique affecting clinical control in asthma, although there are not objective changes in RFA. In COPD we found no relation, neither with clinical control nor with RFA. This is an ongoing work that aims to enroll more patients and to reevaluate inhalation technique after patients' education, and its impact on clinical and functional control.

Key words: *Asthma. COPD. Inhaler device. Inhaler technique.*

P077. SPIROMETRY COLLABORATION IN ELDERLY PEOPLE IN ELDERLY CARE CENTER – GERIA STUDY

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Introduction: Spirometry is the selected method to identify ventilatory defects, nevertheless it is not frequently used in elderly due to the fact that it is common to consider that they are not able to collaborate.
Objective: To evaluate spirometry collaboration before and after the bronchodilatation test in elderly people in an elderly care center (ECC) in Lisbon.
Methods: Between January and February 2014, were evaluated through spirometry test 144 elderly center residents (of a total of 277 that were included in GERIA study), who consented to participate and showed cognitive capacity to understand the respiratory maneuvers. The exam was performed after arterial blood pressure, cardiac frequency and peripheral oxygen saturation measurements. A bronchodilation test was performed on those that did not have antiarrhythmic therapy. The quality criteria were evaluated according to ATS/ERS guidelines (2005). Beyond this criteria the PEF value were also studied. The spirometry and bronchodilatation test procedures were explained and demonstrated at the beginning, and if necessary, during the exam. A descriptive analysis of the data was performed.
Results: The sample was of 141 elderly that performed spirometry, of whom 62.4% were female. The mean age was 84.3 ± 6.4 years (minimum of 66 years and maximum 101 years). 72.3% and 74.5% spirometry tests fulfilled the quality criteria in basal and after bronchodilatation test. The reasons for not fulfilling the criteria were: exhalation duration less than 6 seconds or an inexistent plateau in the volume–time curve (46.2% in basal and 34.6% after bronchodilatation), Extrapolated volume/low effort (7.8% in basal and 20.0% after bronchodilatation) and overall weak collaboration/inconclusive spirometry (46.2% in basal 45.7% after bronchodilatation). From those 136 elderly (95.5%) that performed bronchodilation test, 3 (2.2%) had incorrect inhalation technique. The percentage of the predictive value of PEF, was higher than the percentage of the predictive value of FEV1 in 92.8% and 93.3% elderly´s spirometry in basal and after a bronchodilator.
Conclusions: The spirometry test with quality criteria was possible in a high number of elderly care center residents. This data shows that this exam is achievable in elderly even in advanced ages.
Granted by Fundação para a Ciência e Tecnologia – Projeto GERIA PTDC/SAU-SAP/116563/2010.

Key words: *Elderly. Spirometry. Collaboration..*

P078. ACOS, IS THIS A NEW REALITY?

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Introduction: Obstructive pulmonary diseases such as asthma and COPD are diseases of high prevalence in the Western world, whose distinction might be difficult, especially in smokers and older individuals. The ACOS (Asthma-COPD Overlap Syndrome), recognized by the last letter of GINA as a distinct and separate entity, is characterized by a permanent airflow limitation with multiple features simultaneously Asthma and COPD.
Objective: The aim of this study is demographic, clinical and functional characterization of patients with ACOS.
Methods: Retrospective study of a population of patients followed in consultation of Respiratory Allergology and General Pulmonology from January 1st to June 30th of 2014. Of the 431 patients seen, we selected the ones with Asthma and CPOD symptoms with spirometry evaluation and excluded patients younger than 40 years and absence of obstruction defined by spirometry. A telephone questionnaire was performed for the revision of anamnesis based on criteria defined by GINA.
Results: We selected 39 patients with a mean age of 66 ± 10.1 years, 35.9% were male. Smoking history was shown in 17.9% of patients, all were male. Exposure to biomass was represented in 25.6% of patients and in this group, 90% were female. Regarding comorbidities, 23% had hypertension, 15.4% dyslipidemia, 10.3% cardiac disease, 10.3% ethyl habits and 7.7% were diabetic. According to the questionnaire submitted in GINA, 41% had asthma profile (31.3% male and 12.5% with smoking habits), while 43.6% were suggestive of COPD (47% men and 29.4% smokers). The prevalence of smoking in men with asthma profile was 40% while in men with COPD profile was 62.5%. With clearly evocative ACOS we had only 15.4% (16.7% males and no smokers). Family history of atopy was affirmed in 43.5% and 58.8% of patients reported having a previous diagnosis of asthma (13% of these had smoking habits and 56.5% had symptoms before age of 20). When asked about exertional dyspnea, 46.2% confirmed and of these, 16.6% had concomitant cardiac pathology and 11.1% reported smoking habits. In spirometric study, 53.8% had FEV1 greater or equal to 80% and 25.6% had FEV1 lower to 50%. Positive bronchodilator response was seen in 41% of patients. Regarding the imaging study, 76.9% had abnormalities suggestive of hyperinflation.
Conclusions: Although this is a small sample, the present study translates the real hard work to distinguish between Asthma and COPD, especially when it comes to smoking and adults exposed to biomass. The ACOS appears as a way to bridge this gap, presenting both features of COPD and Asthma and should be considered whenever there isn´t a clear predominance of a single profile, assuming great importance in new treatment options, which should have inhaled corticosteroid therapy as a foundation stone.

Key words: *Overlap Asthma-COPD. ACOS. Asthma phenotypes.*

P079. SEVERE ALLERGIC ASTHMA AND OMALIZUMAB – EXPERIENCE IN HOSPITAL DE SANTAREM

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Introduction: With the introduction of omalizumab approved by the Food and Drug Administration in 2003, the treatment of severe allergic asthma now has an important therapeutic tool, indicated in the complementary treatment of asthma not controlled with other measures proposed by GINA. This work aims to show the experience with omalizumab in the Santarem Hospital (HS) since 2009.

Methods: A retrospective study evaluated a total of 8 patients undergoing treatment with omalizumab; 4 patients completed the treatment, and 4 are still under treatment. Their effects in terms of clinical asthma control were lung function, need to rescue in health services and clinical evolution.
Results: Of the 8 patients studied, 4 completed treatment: 2 had a treatment period of 5 years, one of 3 years and one of 1 year. The other 4 patients, are on their third (2 patients), second (2 patients) and first (1 patient) year of treatment. The mean age of the patients was 50 years (minimum 20 and maximum 68), with no sex predominance (female:male 4:4). Pulmonary function before starting treatment had a mean FEV1 of 57% minimum of 36%,maximum of 89%, and an average resistance of 5.87cm H2OL/s, with a maximum of 15.7 and a minimum of 2.4. The mean values of IgE was 568.8 U/L maximum 1,675; minimum of 50. All patients were treated with fixed doses of ICS, LABA and LAMA. The 3 patients who completed the treatment at 3 and 5 years had good clinical and functional results. The patient that suspended the treatment at 12 months had little clinical and functional improvement. The 4 patients who are still undergoing treatment, have presented a favorable clinical evolution. In all patients there was improvement in FEV1, from 57% to 69%, after the first 12 months of treatment. All patients maintained throughout the periods referred the initial inhalation therapy.
Conclusions: Beyond a positive lung function evolution, the benefits observed in patients treated with omalizumab revealed a significant reduction in asthma attacks.

Key words: *IgE. Severe asthma. Omalizumab.*

P080. SUBCUTANEOUS IMMUNOTHERAPY TEN YEARS LATER: ANALYSIS OF PREDICTIVE FACTORS AND CLINICAL RESPONSE

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Introduction: Immunotherapy is currently the only treatment that alters the natural history of allergic disease. The benefits of subcutaneous immunotherapy (SCIT) in asthma and rhinitis is proven in several studies but symptoms relapse is a common finding.
Objective: Evaluate the predictive factors of SCIT and variables associated with clinical response and disease severity 10 years later.
Methods: Retrospective analysis of outpatients followed in a respiratory unit of a District Hospital who were started on SCIT in 2003 (n = 31). The authors compared SCIT for house dust mites vs pollens and rhinitis vs asthma plus rhinitis patients. A logistic regression model was built to determine the predictive factors associated with clinical response and disease severity: age of starting symptoms, IgE, eosinophil count, skin test allergen and clinical forms.
Results: The mean age was 16.9 years. Most patients were diagnosed with asthma plus rhinitis (71%). 87.1% of patients were treated with SCIT for house dust mites. Before SCIT no patients had controlled disease, whereas 10 years after SCIT 64.5% had controlled disease (70.4% post-SCIT for house dust mites vs 25% post-SCIT for pollens) and 20 patients had no need for inhaled therapy. The age of starting SCIT had a tendency to influence disease severity and was lower in asthma plus rhinitis patients ($p < 0.002$).The age of starting symptoms was significantly higher in rhinitis patients ($p < 0.009$). The logistic regression model didn't identify any predictors of good clinical response nor of disease severity.
Conclusions: Our results were similar to other studies concerning the efficacy of SCIT. No predictive factors of clinical response or disease severity were found.

Key words: *Immunotherapy. Asthma. Allergy.*

P081. IS THERE A RELATION BETWEEN THE ISOLATED INCREASE OF RESISTANCE IN A METHACHOLINE CHALLENGE TEST AND ASTHMA DIAGNOSIS?

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Introduction: The suspicion of asthma should come with a medical history that includes symptoms such as wheezing, dyspnea, cough, and chest pain. The methacoline challenge test (MCT), which assesses the airway hyperresponsiveness, is used to confirm this diagnosis. The existing information in the literature about the diagnostic implications of resistance increase in this test, and the diagnosis of asthma, is scarce.
Objective: Characterize patients who underwent MCT and evaluate patients with positive MCT and the subgroup of patients with isolated increased of the resistance.
Methods: Retrospective study of patients who underwent MCT in aerosol provocation system, in a pulmonary function laboratory, between 01/12/2012 and 01/12/2013. Sociodemographic variables, smoking history, atopy, baseline respiratory function test (tiffeneau index, FEV1 and FVC), fraction exhaled nitric oxide (FeNO), result of the MCT and isolated increased of resistance in the MCT, were analyzed.
Results: Were included 195 patients, of whom 105 (53.8%) were men. The mean age was 41 ± 17 years. Had documented atopy 54 (27.7%), smoking history 57 (29.2%) with mean smoking pack year (SPY) of 13.2. Did treatment with inhaled corticosteroids 82 (42.1%). The mean FeNO was 28.9 ppb. The MCT was positive in 83 patients (42.6%), being significantly more positive in patients with higher FeNO ($p = 0.001$; 39 vs 21). In patients with positive MCT, bronchial hiperrreatividade was mild in 20 (24.1%), moderate in 19 (22.9%) and severe in 44 patients (53.0%). The resistances were increased in 90 patients (46.2%). In 39 patients was observed an isolated increase of the resistance (with no fall in FEV1). There was a significant increase of resistance in patients with higher mean SPY ($p = 0.015$) and higher FeNO ($p = 0.009$), although there was no significant association between isolated increased of resistance and asthma diagnosis.
Conclusions: In this sample was confirmed the relation between positive MCT, the diagnosis of asthma and increased FeNO. Regarding the isolated increase of resistance in MCT, there was no statistically significant relation between this and asthma diagnosis.

Key words: *Methacholine Challenge Test. Asthma. Resistance.*

P082. A SPIROMETRY NET IN SANTARÉM

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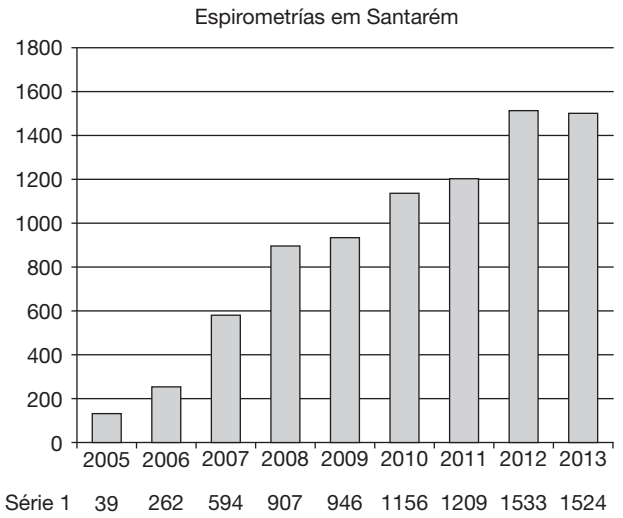
The authors present data from a spirometry net organized in the daily activity of ambulatory health units in the region of Santarém. In this region there is a pulmonology service in the hospital and a chest clinic (CDP). In clinical sessions organized in the health centres we promote the interest in the use of spirometry as an important tool to diagnose and control patients with bronchial pathology, mainly COPD and bronchial asthma. With this interest from general practitioners, with cardiopulmonary technicians in peripheral services, with spirometers donated by the pharmaceutical in-



dustry and the CDP Santarém making the reports, this spirometry net began his work and progressively expanded to nine centers. We began this work in 2005 and the movement is represented in the table. In recent years we have more than 1,500 annual spirometries. Are presented data from the movement by concelho: Almeirim (18%), Alpiarça (1%), Benavente (12%), Cartaxo (32%), Coruche (8%), Chamusca (6%), Rio Maior (0.3%), Salvaterra de Magos (15%), Santarém (8%). In a total of 8,170 spirometries done in these nine years, 2,477 (30.3%) had also broncodilatation test.

Key words: *Spirometry. COPD.*

P083. SPIROMETRIC CRITERIA OF OBSTRUCTION AND CLINICAL CORRELATION: PRELIMINARY RESULTS OF A PROSPECTIVE STUDY

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Introduction: Chronic Obstructive Pulmonary Disease (COPD) is a common cause of morbidity and mortality, and spirometry is fundamental for diagnosis. However, the defining spirometric obstruction criteria differ between the various recommendations. These differences can significantly over or underestimate the true prevalence of the disease in different populations; there is no consensus on the best definition of obstruction.
Objective and methods: Prospective, longitudinal, observational and controlled study, with estimated one year duration, having the following main objectives: 1) Compare spirometric criteria of obstruction defined by the two most important recommendations (ATS/ERS versus GOLD) in a sample of patients; 2) Establish which spirometric obstruction criterion correlates best with symptoms, measured through questionnaires (respiratory symptoms "cough, expectoration and breathlessness", mMRC and CAT). The present abstract reflects the preliminary results of the first three months of the study.
Results: The patients included in the study underwent pulmonary function tests (PFT) and were over 35 years old, without asthma, bronchiectasis or restrictive pattern on the PFT. A total of 67 individuals were identified (44 men), average age of 58.8 years, average BMI of 28.8 kgm^{-2} and average tobacco load of 43.2 year pack unit. Out of the total, 28 (42%) patients had no criteria of obstruction; 11 patients (16%) had obstruction only according to GOLD; 2 patients (3%) presented obstruction only by ATS/ERS definition and 26 patients (39%) met both criteria (ATS/ERS and GOLD). Regarding chronic respiratory symptomatic patients, 24 (36%) had obstruction in accordance with GOLD and only 17 (25%) with the ATS/ERS criteria. Considering mildly symptomatic patients, those with mMRC ≤ 1 were more often categorized as obstructive according to the GOLD criteria (36% vs 25%); in relation to patients with CAT ≤ 20, 45% met GOLD criteria and 39% ATS/ERS. Concerning the distribution by degree of severity, there is also a trend towards a higher frequency of less severe patients (FEV1 > 50%) according to the GOLD criteria (42% vs 30%). These differences were, however, not statistically significant.
Conclusions: These preliminary results allow us to observe a trend for increased diagnosis of obstructive patients using the GOLD criterion with a higher rate of less severe and less symptomatic patients. However, the small sample size does not yet permit establishing differences with statistical significance.

Key words: *Obstructive syndrome. Spirometry. Chronic obstructive pulmonary disease (COPD). Criteria.*

P084. EVALUATION BETWEEN THE PAO2 AT REST AND EXERCISE DESATURATION WITH MAXIMAL EXERCISE CAPACITY IN PULMONARY TRANSPLANT CANDIDATES

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Introduction: Organ failure in lung transplant candidates reflects the end-stage of a wide range of pulmonary diseases. Typically, when this point is reached, patients have respiratory failure and frequently exercise intolerance. However, other factors might also contribute to the exercise performance.
Objective: Evaluation of the relationship between the arterial partial pressure of oxygen (PaO_2) at rest and desaturation while exercising in a cycle ergometer (cardiopulmonary exercise test), with both maximum work rate (Wmax) and maximal oxygen uptake (VO_2max).
Methods: Retrospective evaluation of pulmonary transplant candidates clinical data. Patients who had arterial blood gases at rest (while breading room air) and cardiopulmonary exercise test at the beginning of a pulmonary rehabilitation program were included. The Spearman's rank correlation coefficient was used to measure correlations.
Results: Thirty five patients met the inclusion criteria, the median age was 57 years old (20-68 years old) and 26 were male. Eleven patients had pneumoconiosis, 7 COPD, 5 interstitial lung disease, 5 bronchiectasis, 2 asthma, 2 alpha 1-antitrypsin deficiency, 1 hypersensitivity pneumonitis, 1 Sjögren syndrome and one sequelae of *Staphylococcus aureus* pneumonia. Regarding all patients, the median PaO_2 at rest was 62.9 mmHg (interquartile range 26, 5 mmHg) and the median variation of the peripheral capillary oxygen saturation (SpO_2) was -9.0% (interquartile range: 6%). The median Wmax was 48 Watts (interquartile range: 35 Watts) and the median VO_2max was 11.9 ml/min/kg (interquartile range: 5.8 ml/min/kg). A significant positive correlation between the PaO_2 at rest and the VO_2max was observed ($r = 0.35$, $p = 0.03$), but not between the PaO_2 at rest and the Wmax ($r = 0.28$, $p = 0.09$). No correlation between SpO_2 variation during the cardiopulmonary exercise test and the VO_2max ($r = -0.14$, $p = 0.40$) or the Wmax ($r = -0.26$, $p = 0.11$) was found.
Conclusions: A more severe hypoxemia at rest predicts a lower maximal oxygen uptake in this group of patients. Desaturation magnitude "per se" may not be as important to exercise capacity or may be compensated by other factors.

Key words: *Lung transplant. Exercise capacity. PaO_2. SpO_2.*

P085. EFFICACY AND SAFETY OF NINTEDANIB IN PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS: RESULTS OF TWO 52-WEEK, PHASE III, RANDOMIZED, PLACEBO-CONTROLLED TRIALS (INPULSIS™)

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Introduction: Nintedanib, a potent intracellular inhibitor of tyrosine kinases, specific for vascular endothelial growth factor receptor (VEGFR), platelet-derived growth factor receptor (PDGFR) and fibroblast growth factor receptor (FGFR), is in clinical development as a treatment for idiopathic pulmonary fibrosis (IPF). Following the Phase II TOMORROW study, two identical in design Phase III, multinational, randomized, placebo-controlled, parallel-group trials (INPULSIS™-1 and -2) investigated the efficacy and safety of nintedanib in patients with IPF.
Methods: Patients aged ≥ 40 years with a diagnosis of IPF ≤ 5 years before randomization who had undergone a chest high-resolution computed tomography (HRCT) scan ≤ 12 months before screening were recruited in 24 countries in the Americas, Europe, Asia and Australia. Participants were required to have a forced vital capacity (FVC) ≥ 50% predicted and carbon monoxide diffusion capacity (DLCO) of 30-79% predicted. Participants were randomized (3:2) to receive nintedanib 150 mg twice daily or placebo for 52 weeks. The primary endpoint was the annual rate of decline in FVC (mL/year). Key secondary endpoints were change from baseline in St. George's Respiratory Questionnaire (SGRQ) total score over 52 weeks and time to first acute exacerbation over 52 weeks.
Results: A total of 513 and 548 patients were treated in INPULSIS™-1 and INPULSIS™-2, respectively. Baseline characteristics were balanced between treatment groups in each trial. The primary endpoint, the annual rate of decline in FVC, was significantly reduced in the nintedanib group compared to placebo in both trials. Both key secondary endpoints were met in INPULSIS™-2: there was significantly less deterioration in SGRQ total score and reduced risk of acute exacerbation over time in the nintedanib group compared to placebo. In INPULSIS™-1, there was no difference between the groups in deterioration in SGRQ total score or risk of acute exacerbation. The most frequent adverse event in the nintedanib groups was diarrhea, which was reported in 61.5% vs 18.6% (INPULSIS™-1) and 63.2% vs 18.3% (INPULSIS™-2) of patients in the nintedanib and placebo groups, respectively. The proportion of patients with serious adverse events was similar in the nintedanib and placebo groups (31.1% vs 27.0% in INPULSIS™-1; 29.8% vs 32.9% in INPULSIS™-2, respectively).
Conclusions: In two replicate Phase III trials in patients with IPF, nintedanib 150 mg twice daily slowed disease progression by significantly reducing rate of decline in FVC and was associated with an acceptable side-effect profile.
Results presented in Annual Congress of American Thoracic Society (ATS), San Diego, USA, 16-21 May, 2014.

Key words: *Idiopathic pulmonary fibrosis (IPF). Nintedanib. Placebo. Efficacy. Safety.*

P086. THE IMPORTANCE OF INSPIRATORY CAPACITY FOR THE DETECTION OF PULMONARY HYPERINFLATION

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Introduction: Pulmonary hyperinflation correlates with dyspnea, exercise performance and mortality and as a result is recognized as an important characteristic of obstructive airway disease. Hyperinflation can be measure directly by body plethysmography, using lung volumes as TLC, RV and RV/TLC, but its definition is not consensual. In addition, body plethymography requires sophisticated and expensive equipments. By contrast, spirometry is a much less expensive test, and the vast majority of the commercial available equipment can determine the inspiratory capacity (IC), which has been proposed in the literature as an indirect measure of hyperinflation.
Objective: To test the efficacy of inspiratory capacity as a measure of hyperinflation.
Methods: A transversal study was performed, using lung function tests (LFT) obtained in June 2014. All LFT with obstructive parameters in addition to the ATS/ERS 2005 acceptability and reproducibility criteria were included. We used 2 different criteria for hyperinflation: A) ITGV > 120% and RV > 140% of predicted value, B) ITGV > 130% and RV > 140% of predicted value. Statistic analyses was made with SPSS® v17 (test one-way ANOVA; Pearson Correlation).
Results: One hundred and eight LFT were included. Using criterion A, 53.7% of the study population had pulmonary hyperinflation, and as expected the subjects with hyperinflation had statistically significant differences in the parameters related to obstruction, FEV1, MMEF 75/25, FEV1/VC, FEV1/FVC, FEV3/FVC and FEV1/FEV6

Table 1 - P086

Measurements	With hyperinflation N = 58	Without hyperinflation N = 50
FEV1, L	1.7642 ± 0.75	2.22 ± 0.67
FEV1, %	71.3 ± 23.4	84.59 ± 15.53
MMEF 75/25, L	0.82 ± 0.57	1.21 ± 0.51
MMEF 75/25, %	25.68 ± 15.54	39.19 ± 15.1
FEV1/VC	57 ± 11	66.62 ± 5.73
FEV1/FVC	60 ± 11	67.99 ± 5.83
FEV3/FVC	82 ± 9.26	86.42 ± 5.02
FEV1/FEV6	63.63 ± 11.2	71.67 ± 5.42
IC ,L	2.29 ± 0.75	2.52 ± 0.8
IC, %	104.11 ± 27.38	103.90 ± 25.62

Table 2 - P086

Measures	With hyperinflation N = 46	Without hyperinflation N = 62
FEV1, L	1.6 ± 0.7	2.25 ± 0.65
FEV1, %	68.11 ± 23.93	84.38 ± 15.71
MMEF 75/25, L	0.693 ± 0.52	1.22 ± 0.50
MMEF 75/25, %	22.26 ± 14.61	39.05 ± 14.48
FEV1/VC	54.58 ± 10.99	66.56 ± 5.42
FEV1/FVC	57.85 ± 11.09	68.24 ± 5.48
FEV3/FVC	80.39 ± 9.67	86.75 ± 4.75
FEV1/FEV6	61.37 ± 11.47	71.79 ± 5.03
IC, L	2.11 ± 0.65	2.60 ± 0.79
IC, %	101.83 ± 26.64	105.63 ± 26.43

(table 1). However, we did not find statistically significant differences between the subjects with hyperinflation and the subjects without hyperinflation in what concerns IC, in absolute value or in predicted value. With Pearson Correlation we only found a negative correlation between RV (%) and IC (%) ($r = -0.265$; $p < 0.05$). Using Criterion B, 43% of the study population had hyperinflation, and we also found statistically significant differences between the subjects with and without hyperinflation in what concernsobstruction measurements, FEV1, MMEF 75/25, FEV1/VC, FEV1/FVC, FEV3/FVC e FEV1/FEV6 (table 2). Using this criterion we found statistically significant differences in the IC absolute value ($p = 0.001$). As with the other criterion, the only negative correlation was between the IC (%) and RV (%) ($r = -0.265$; $p < 0.05$).

Conclusions: This study demonstrates that spirometry using IC is a less efficient way to determine the pulmonary hyperinflation in comparison to body plethysmography.

Key words: *Pulmonary hyperinflation. Inspiratory capacity. Residual volume.*

P087. CARBON MONOXIDE DIFFUSING CAPACITY (DLCO) AND THE ROLE OF THE HEMOGLOBIN IN THIS MEASUREMENT

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Introduction: The capacity of the lung to exchange gas across the alveolar capillary interface has been made in clinical practice almost 100 years. However, there exist divergent results concerning its utility as a predictive value of the presence and/or severity of some pathologies. These divergent results have been the base for several research.

Objective: Evaluate the value of the adjustment of the DLCO for hemoglobin concentration (Hb) regarding the DLCO SB absolute values as well as its clinic impact.

Methods: Were analyzed 39 lung function tests (LFT) performed at our department. All of the patients performed a single-breath DLCO maneuver (according the ATS/ERS 2005 guidelines) and was obtained the absolute and percentual value. Was performed an arterial gasometry in order to obtain the Hb value, subsequently used in the determination of the absolut and percentual Hb adjusted value. Statistical analysis was performed by using SPSS® software (20 version). Data of descriptive statistics are presented as mean ± standard deviation. t test for paired samples was used for comparative studies and a $p < 0.05$ was considered statistically significant.

Results: The group of individuals has a mean age of 59.77 (± 14.38) years and body mass index of 28.49 (± 5.76) kg/m^2. The descriptive results are presented on table 1. The comparative results are presented on table 2.

Conclusions: In our preliminary analysis was found that Hb influences the DLCO determination. Taking in account the Hb value could be important on the early diagnosis in some pathologies, or, when the diagnosis has already been made, could be helpful in pharmacological decisions. These results are according with other studies hypothesis's, who claim that, the lack of Hb-DLCO adjustment could be one of the reasons of the divergent results when is studied the role of the DLCO determination in some pathologies and its following.

Key words: *Carbon-monoxide diffusing capacity. Hemoglobin. Lung function tests.*

P088. COMPARISON BETWEEN ALVEOLAR-ARTERIAL O_2 GRADIENT AND DIFFUSION CAPACITY FOR CARBON MONOXIDE

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Table 2 - P087

	DCLO SB/Hb (%)	DLCO SB/Hb (mmol/min/kPa)
DLCO SB	t = 3.24 (p = 0.003)	t = 2.96 (p = 0.005)

Table 1 - P087

	FEV1/FVC (%)	FEV1 (%)	pH	$PaCO_2$ (mmHg)	PaO_2 (mmHg)	Hb g/dL	DLCO SB (%)	DLCO SB (mmol/ min/kPa)	DLCO SB/ Hb (%)	DLCO sb/Hb (mmol/ min/kPa)
LFT	71.13 ± 14.67	82.59 ± 27.72	7.41 ± 0.26	38.99 ± 3.71	77.82 ± 10.26	14.75 ± 174	74.93 ± 23.17	6.05 ± 2.33	72.81 ± 22.90	5.92 ± 2.24

LFT – Lung Function Test; FVC – forced vital capacity; FEV1 – Forced expiratory volume in one second; FEV1/FVC –FEV1/FVC ratio; $PaCO_2$ – carbon dioxide partial pressure; PaO_2 – oxygen partial pressure; Hb – hemoglobyne; DLCO SB – Diffusing capacity for the lungs measured using carbon monoxide; DLCO SB/Hb –Hb adjustment on the diffusing capacity for the lungs measured using carbon monoxide.

Introduction: Gas exchange occurs by diffusion across the alveolar–capillary barrier. There are several techniques that indirectly evaluate this function, namely the diffusion capacity for carbon monoxide (DLCO) and the alveolar-arterial O_2 gradient (PA-aO_2).
Objective: To evaluate the correlation betweenPA-aO2andDLCO in patients without acute illness.
Methods: Across-sectional study in a Respiratory Pathophysiology Unit of a General Hospital for 2 months was conducted. We included all patients who performed, in the same day, blood gas analysis (FiO_2 = 21%) and DLCO (Single-Breath method, corrected for hemoglobin and carboxyhemoglobin). Demographic, anthropometric and clinical data were collected. Correlation between PA-aO_2 and the percentage of predicted DLCO (DLCO%) was evaluated. DLCO% was considered decreased if it was less than 80% and PA-aO_2 increased if it was greater than 20 mmHg; the level of agreement (kappa) between these two methodologies was accessed. The values of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of PA-aO_2 to predict DLCO% were calculated.
Results: We included 95 patients, 62% men, aged between 29 and 87years old (mean age: 62 ± 13 years, median: 62 years). Twenty percent of patients were smokers and 37% were former smokers. Mean DLCO% value was 77 ± 20 and PA-aO_2 was 20 ± 10. There was a moderate negative correlation between DLCO% and PA-aO_2 ($r = -0.398$, $p < 0.001$), that is, the higher the value of PA-aO_2, the lower the DLCO%. However, the level of agreement between a decreased DLCO% and an increased PA-aO_2 was poor ($k = 0.139$). In 43% of cases, patients showed a reduced DLCO% but a normal PA-aO_2 or vice versa. PA-aO_2 and DLCO% were both normal in 28% of patients and in 29% PA-aO_2 and DLCO% were simultaneously abnormal (increased PA-aO_2 and decreased DLCO%). The sensitivity of PA-aO_2 >20 mmHg was 55%, specificity 59%, PPV 61% and NPV 53%. Using ROC curve analysis, a value of PA-aO_2 = 23 mmHg was the best cut-off value to predict and to exclude a moderate or severe reduction in DLCO%. With this cut-off value, the sensitivity is 76%, specificity 62%, PPV 30% and NPV 92%.
Conclusions: The PA-aO_2 and DLCO are two techniques used to evaluate the alveolar–capillary membrane. This study showed that PA-aO_2 and DLCO% had a significantly inverse correlation. However, the specificity and sensitivity of PA-aO_2 > 20 mmHg are low to predict a decreased DLCO%. Nevertheless, we highlight that a PA-aO_2 lower than 23 mmHg excludes the presence of a moderate or severe reduction in DLCO% in 92% of patients. There may be other factors not identified in this study that could explain the disagreement between DLCO% and the PA-aO_2 observed in some patients. Furthermore, the normal value of PA-aO_2 is not consensually established yet, which may influence the results.

Key words: *Alveolar-capillary barrier. DLCO. Alveolar-arterial gradient.*

P089. THORACIC EMPYEMA – REALITY OF A THORACIC SURGERY UNIT

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Introduction: Empyema is defined as infection of pleural space which represents a severe illness associated with pulmonary and pleural disease of several origins: infectious, traumatic and iatrogenic. It constitutes a serious complication in about 5-10% of pleural effusion complicated pneumonia and in 2-8% of patients submitted to thoracic surgery. This entity is also related to an increased morbidity and mortality, as well as a longer hospital stay. Recent evidence shows an increasing number of hospital admissions for empyema in paediatric and adult patients, common to all countries, regardless of development level. According to Observatório Nacional das Doenças Respiratórias (2003-2013) report, there is an increasing number of hospital admissions for respiratory disease, including infectious lung disease and pleural disease. Therapeutic approach should include timely recognition of pleural effusion, antibiotic therapy and drainage (phase I empyema). Surgical drainage and debridement should be considered in patients with loculated effusions (phase II), who fail to improve despite optimal therapy or those in which infection site isn't contained. Failure to deliver treatment in a timely fashion is related to progression of disease and development of organized empyema and trapped lung (phase III), which results in higher complication rate and longer hospital stay.
Objective: To study and characterize our cohort of empyema patients in a 4.5 years.
Methods: A retrospective analysis was performed including all patients with empyema diagnosis admitted on Serviço de Cirurgia-Torácica, Hospital Pulido Valente, CHLN, between January/2010 and June/2014. Demographic, disease related, therapeutic approach and length of stay variables were considered.
Results: 108 patients were identified, and diagnosis were divided according to etiology: complicated metapneumonic effusion (54%), chronic empyema/pleural thickening (12%), post thoracic surgery empyema (17%), post abdominal surgery empyema (6.5%), post-pneumonectomy empyema (4.6%), post invasive procedure pleural infection (2.8%) and complicated hemothorax (3.7%). The number of cases per year was evenly distributed, except for the great increase registered on the 1st trimester of 2014 (22 cases). 98 patients (91%) were submitted to invasive procedures: pulmonary decortication (n = 47), surgical drainage/debridment (n = 34), drainage (n = 16) and 1 pleurpneumonectomy. Infectious agent couldn't be identified in 63% of cases, and the most common isolated pathogens were *Staphylococcus aureus* and *Pseudomonas aeruginosa*. Median pleural drainage time was 10 days (max. 86) and median hospital stay was 18 days (max. 87).
Conclusions: Empyema is a serious and expectable, growing in incidence, pleural disease, that demands clinical surveillance and early therapeutic institution. Clinical awareness and early diagnosis may allow the timely referral to a Thoracic Surgery Unit for surgical treatment.

Key words: *Empyema. Pleura. Infection. Surgery.*

P090. COMPARATIVE STUDY OF PRIMARY VS SECONDARY SPONTANEOUS PNEUMOTHORAX

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Pneumothorax is defined as air in the pleural space. Spontaneous means there is no traumatic injury to the chest or lung. Primary spontaneous pneumothorax (PSP) occurs in absence of underlying lung disease. Secondary spontaneous pneumothorax (SSP) is a complication of an underlying pulmonary disease. The aim of this retrospective study was characterize our population of patients hospitalized with the diagnosis of spontaneous pneumothorax and analyze differences between PSP and SSP. We analyzed 119 episodes corresponding to 110 patients admitted in our ward between 2008 and 2013. PSP was reported in 104 (87.4%) episodes. Chronic obstructive pulmonary disease (COPD) (n = 8) and lung cancer (n = 4) were the most common coexisting diseases in patients with SSP. Mean age (34.2 years) and length of stay in hospital (7.9 days) in PSP were lower than SSP. Chest pain was the most frequent symptom in PSP as dyspnea and cough were dominant in the SSP. Chest tube drainage was initial treatment method most often used (98.1%

and 100% at PSP and SSP) being complemented by thoracoscopic pleurodesis in one patient. However 23.1% and 33.4% of the events PSP and SSP respectively were referred for surgery. Rate of recurrence of pneumothorax was 19.2% and 26.7%, in PSP and SSP, respectively. Major complication was respiratory infection (PSP 13.4% vs SSP 26.7%). Mortality rate in the SSP was 13.2% without deaths on the PSP. SSP occurs in older people, requires longer hospital stay and involves more complications and higher mortality than PSP. Highlight increasing importance of lung cancer as underlying pathology in SSP, appearing soon after COPD, probably justified by smoking present in 64.7% of patients.

Key words: *Primary spontaneous pneumothorax. Secondary spontaneous pneumothorax.*

P091. MALIGNANT PLEURAL MESOTHELIOMA SUBMITTED TO EXTRAPLEURAL PNEUMECTOMY – 10 YEARS OF EXPERIENCE

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Introduction: Malignant pleural mesothelioma (MPM) is an aggressive neoplasm arising from the surface serosal cells of the pleural cavity. Previously considered to be rare, has become a very important issue over recent years. Asbestos exposure is the main factor involved in pathogenesis; witch can explain the rise in the incidence of MPM since 1960. The diagnosis of MPM is difficult because the disease may occur up to 30-40 years after asbestos exposure, and even the histological diagnosis using immunohistochemistry techniques, settled on pleural biopsy, may not be straightforward due to the overlapping with other entities such as pleural benign disease or metastasis of adenocarcinoma.
Objective: We aim to analyse our personal experience on the surgical treatment of MPM, describing the perioperative outcomes and overall survival.
Methods: This is a retrospective study, which involved 7 consecutive patients with the diagnosis of diffuse MPM, submitted to extrapleural pneumectomy between January 2004 and January 2014. Radical resection was performed in all abovementioned patients, comprising total pleurectomy with en bloc pneumectomy and ipsilateral diaphragm and pericardium excision. Patients were predominantly male (57%) and with a mean age of 55 years (40-66 years.
Results: The most frequent presenting symptom was dyspnea in 5 patients, followed by chest pain in 4 patients, cough and asthenia in 3 cases, anorexia in 1 patient and 1 patient was completely asymptomatic. Kwon asbestos exposure was present in 29% patients and 57% were smokers. Associated chronic disease was present in 71%, mainly hypertension and diabetes. The majority of the patients were submitted to induction chemotherapy or radiotherapy. Postoperative complications were rare, only one patient required reintervention for persistent bleeding and another had a pulmonary embolism which resulted in his death in the second postoperative day. The mean length of hospital stay was 8 days. All patients had postoperative chemotherapy or radiotherapy. The mean time of survival was 21 months (0-47.7 months). Overall actuarial survival at 6, 24 and 48 months was 83.3 ± 15.2%, 44.4 ± 22.2% and 22.2 ± 19.2%.
Conclusions: There is limited evidence of the efficacy of radical surgery for mesothelioma. Perioperative mortality and morbidity is acceptable and the adopted trimodality treatment, consisting of induction chemotherapy followed by extrapleural resection and post-operative radiotherapy/chemotherapy, seemed to produce comparable results with other series.

Key words: *Malignant mesothelioma. Radical extrapleural pneumectomy. Overall survival.*

P092. CLOSED PLEURAL BIOPSY: LIMITED INTEREST OR A BENEFIT IN THE EVALUATION OF PLEURAL EFFUSIONS?

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Introduction: A diagnostic thoracentesis is usually the initial procedure of pleural effusions (PE) of unknown etiology. The diagnosis is not always possible with the thoracocentesis, especially in suspicion of tuberculosis or malignancy, where closed pleural biopsy (PB) may have an important role.
Objective: Evaluate the biochemical, cytological and histopathological features of exudative PE, as well as the diagnostic yield of the techniques.
Methods: Retrospective analysis of medical records of patients undergoing diagnostic thoracentesis only or in combination with closed PB in a Respiratory Department of an hospital for a period of 30 months (January 2012 to June 2014). The biochemical, microbiological and cytological studies of PE as well as the clinical pathology and microbiological results of pleural fragments were analyzed.
Results: Were selected 51 patients with exudative PE according to Light criteria, 25 (49%) were male and 26 (51%) were female, with a mean age of 71 ± 11.6 years. Were performed 51 diagnostic thoracocentesis. The diagnostic yield for thoracocentesis was 43% (22/51), with 82% of malignant PE, mainly adenocarcinoma (32%), and 18% of tuberculosis. In 37 cases were performed closed PB. The diagnostic yield for closed PB was 49% (18/37), with 78% of malignant disease with pleural metastasis (lymphoma, breast and lung) and 22% of tuberculosis. By closed PB 17% (n = 5) of undiagnosed PE by cytological and or microbiological analysis could be diagnosed. The diagnostic yield for the combination of thoracentesis with closed PB was 54%.
Conclusions: In this study the diagnostic yield for the combination of thoracentesis with closed PB was 54% compared to 49% for closed BP only. By this technique 17% of undiagnosed PE by cytological and/or microbiological analysis could be diagnosed, so it continues to play a key role in the evaluation of unknown PE etiology.

Key words: *Exudative pleural effusion. Thoracocentesis. Closed pleural biopsy.*

P093. HOW ARE PLEURAL EFFUSIONS APPROACHED IN AN INTERNAL MEDICINE WARD

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Introduction: Pleural effusion (PE) is a common medical problem with a wide differential diagnosis, making a systematic and careful approach needed. The aim is to establish a quick diagnosis, minimizing invasive procedures.
Objective: Evaluate how PE is investigated in an Internal Medicine Ward.
Methods: This was a retrospective study that included patients with PE admitted to the Internal Medicine B Ward of the CHUC-HG between March/2012 and December/2013. Patient demographic profile, admission diagnosis, medical history, symptoms, location and volume of PE and how it was approached, were evaluated. In the investigation of PE imaging and serum exams, thoracocentesis, type of PE (transudative vs exudative), pH, microbiological examination, cytology, ADA and pleural biopsies were evaluated. The causes of PE were identified and the results were compared with international guidelines.

Results: During the study period, 168/4,638 patients admitted to the Ward had PE (3.6%), with an average age of 80.9Y, 55% of which were male. The most common admission diagnosis was Acute Heart Failure (AHF), followed by respiratory infections. The most common symptoms were dyspnoea, oedema, chest pain, cough and fever. Past medical history included heart failure, kidney failure and cancer. In 99% of the cases, a chest radiograph was performed, 60% had ultrasound and in 17.7% a CT. PE were more often bilateral and a small volume was found in 45.8%. Only 21.4% (36/168) of PE were sampled (54% with ultrasonography guidance): 26 were transudates and 10 exudates. The main reasons not to sample the PE were its small volume and the clinical evidence of AHF associated with a good response to therapy. Despite having indication, PE wasn't studied in 4 patients. 3 thoracocentesis were performed in 27 patients who had AHF and they were all transudates. In the PE that were sampled, only 15/36 had ADA measurement, 23/36 pH measurement, 31/36 microbiological examination and 15/36 cytology. 6 patients had a pleural fluid pH < 7.20 but none had a chest tube inserted. No patients did pleural biopsy. The main cause of PE was AHF (44.6%), followed by PE associated with respiratory infections (35.7%). The majority of transudative PE was associated with AHF (18/26). The majority of the exudative PE was associated with respiratory infections (6/10), none of which was secondary to AHF.
Conclusions: PE was an infrequent diagnosis and AHF was the main cause. The majority of PE weren't sampled either due to their small volume or to its association with AHF. Some PE were not investigated, despite having indication. Sampling of the PE was not made systematically under ultrasound guidance. The majority were transudates and the pleural fluid recommended tests were not always done. Although, some cases had a pleural fluid pH < 7.2, pleural cavity drainage was never performed. No pleural biopsies were made. Based on international guidelines, some aspects of PE investigation could be improved.

Key words: *Pleural effusion. Approach.*

P094. USE OF INDWELLING PLEURAL CATHETER IN THE MANAGEMENT OF RECURRENT MALIGNANT PLEURAL EFFUSION – STATISTICS OF A PULMONOLOGY DEPARTMENT

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The authors have performed a retrospective study of 20 consecutive patients diagnosed with recurrent malignant pleural effusion, that between 2009 and 2014 have been treated with the use of an ondwelling pleural catheter (PleurX®, Denver Biomedical, USA) to permanently drain pleural fluid. Throughout this period 22 catheters were placed (in two of the patients 2 catheters were inserted), corresponding to a total of 11 women (55%) and 9 men (45%), with a median age of 61.4 (± 14.6) years. Twelve patients had repeated therapeutic thoracocentesis, 4 patients organized pleural effusion and 4 other patients previously ineffective pleurodesis. In 18 patients the insertion was done in outpatients and the other 2 patients were already admitted to the hospital for pneumonia. Concerning smoking habits, 8 patients were non-smokers, 6 former or current smokers, being the habits of the remaining ones unknown. Patients primary tumours were lung (5 patients), breast (3 patients), melanoma (2 patients), ovary (2 patients), spermatic cord (1 patient), larynx (1 patient), stomach (1 patient), duodenum (1 patient), colon (1 patient), liver (1 patient) and thyroid (2 patients). In 16 cases (80%) the pleural effusion was located on the right and in 2 patients on the left side; as far as the size of the effusion it was massive in 4 cases (20%), it took between one third up to half of the hemithorax in 10 patients (50%) and one third in 6 patients (30%). In most of the patients the effusion had a sero-fibrinous appearance (13 patients, 65%), being serohematic in 3 patients (15%), hematic in 2 patients (10%) and chylous in 2 patients (10%). The average amount of thoracentesis previous to the catheter use was of 3.5 with an average amount of drained pleural liquid of 1,380 mL. Regarding ECOG performance status (PS), 9 patients (45%) had an ECOG PS of 1, 9 patients (45%) had an ECOG PS of 2 and 2 patients and ECOG PS of 3 (10%). Only 2 patients were not undergoing chemotherapy or targeted therapy. During monitoring immediate complications were reported in only 3 patients (15%) with 3 small volume pneumothoraces. Regarding late complications there was the need to remove 5 catheters: 2 due to catheter valve incompetence with pneumothorax, 2 due do dislocation of the catheter and one due to development of empyema. In most of the patients there was a partial or total symptomatic benefit (14 patients – 70%). The average number of drainages were of 5, with an average amount of drained fluid of 810 mL. Spontaneous pleurodesis was achieved in 2 patients (10%). The average drainage duration was of 92.0 ± 120 days, being 3 patients alive to our knowledge. The study that was performed in our Department showed, similar to other data in the literature, that the use of an indwelling pleural catheter remains an effective and safe palliative treatment in the recurrent malignant pleural effusion in outpatients, with symptomatic relief, allowing a greater comfort to the patient with a low complication rate associated.

Key words: *Indwelling catheter. Malignant pleural effusion.*

P095. PLEURAL MESOTHELIOMA – A DIFFICULT HISTOLOGICAL DIAGNOSIS

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Introduction: Mesothelioma is a rare aggressive malignant tumour, which originates in the serous membranes of the coelomic cavities (pleura, peritoneum, pericardium and tunica vaginalis); the neoplastic cells can exhibit an epithelial, sarcomatoid and/or biphasic differentiation. Its heterogeneity makes it difficult to establish the differential diagnosis with other tumours, as observed with the desmoplastic tumour of the lung. Diagnosis is based on immunochemistry, although there is still no diagnostic gold standard panel of markers and no consistency in the methods used in different institutions.
Case report: 49 year-old-female, non smoker, with no known exposure to asbestos, complained of right thoracic pain and dyspnoea. A chest X-ray showed a nodular opacity in the medium third of the right hemithorax and a homolateral pleural retraction. The chest CT revealed a right nodular pleural thickening. The patient then underwent a pleural surgical biopsy in April/2013 which produced a diagnosis compatible with desmoplastic small-round-cell tumour of the lung. She was referred to the Bone Tumour Unit, where she started chemotherapy with vincristine, doxorubicin and dacarbazine. The progression of the disease after the first treatment led to the request for a diagnostic reassessment at another centre, which produced a histological diagnosis of biphasic mesothelioma. The patient was then referred to the Pulmonology Oncology Unit and started chemotherapy with cisplatin/permetrexed which produced a good clinical and radiological response after 6 cycles of treatment. As she had a good *Performance Status* (1) and the tumour was at a stage for surgery, a pleuropneumonectomy was carried out in December/2013. As there was a lack of consensus about the histological diagnosis, a third opinion was requested from an international referral centre, which confirmed the diagnosis of mesothelioma, but with an epithelial pattern. Now, 6 months after the surgery, the patient is clinically stable and with no signs of relapse.

Discussion: In this case report, the authors would like to stress that this is a very rare disease in young females who have not been exposed to asbestos, and to underline the difficulty of obtaining a correct histological diagnosis. The clinical and radiological response to the treatment with cisplatin/pemetrexed, which provided conditions for the pleuropneumonectomy, is consistent with the diagnosis of epithelial mesothelioma, the histological type associated with a better prognosis.

***Key words**: Mesothelioma. Difficult diagnosis.*

P096. RELAPSING PLEURAL EFFUSION SECONDARY TO ASBESTOS

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Introduction: Asbestos, or amianthus, are a mineral fiber, abundant in natural environment. Until recently was used with many different functions, exposing a large number of workers to its effects. The first clinical reports linking exposure to these fibers to the deleterious effects on health were published at the beginning of the last century. There are several pleural and parenchymal changes related to asbestos exposure, including pleural effusion, pleural thickening or circumscribed pleural plaques, diffuse pleural thickening, rounded atelectasis, asbestosis, lung cancer and malignant pleural mesothelioma. Pleural effusion is generally benign and doesn´t requires specific treatment.
Case report: We report a clinical case of an 80-year-old nonsmokerman, that have worked for a few years in the cement industry, without significant pulmonary disease. In ER,this patient presented fatigue and dyspnea on exertion. Chest radiography was compatible with left pleural effusion. Thoracentesis revealed a sero-hematic exudate and pleural biopsy was consistent with nonspecific pleuritis. During bronchofibroscopy, itwas evident swelling on the spur of left lower lobar bronchus' apical segment, whose biopsy was inconclusive. Computed tomography scan of the thorax showed pleural plaques and diffuse pleural thickening regions. The patient showed a favorable clinical outcome after drainage of the fluid and he was discharged with programmed follow-up. He was back to ER seven months later and presented similar complaints. Chest radiography showed right pleural effusion, whose study revealed similar characteristics to the previous one. The existence of pleural plaques and recurrent pleural effusion, in addition to negative microbiological and cytological studies, without imagiologic or histopathological evidence of neoplastic origin, supported the diagnosis of benign asbestos pleural effusion. In follow-up, the patient didn't present any pleural effusion recurrence, remaining only a slight decrease in transparency inferior pulmonary fields on chest radiograph.
Discussion: The benign asbestos pleural effusion, although rare, may be the primary manifestation of the health commitment related to asbestos exposure. Usually happens in the first ten years after exposure and have complete resolution in about 3-4 months after conservative treatment, but recurrences may occur. This diagnosis is usually retrospective and based on asbestos exposure and exclusion of other causes.

***Key words**: Pleural effusion. Asbestos. Lung.*

P097. DESMOID TUMOR OF THE PLEURA – A RARE DIAGNOSIS

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Case report: The authors present the case of a Caucasian male that worked as a prison guard. He was an obese patient with smoking habits (16 packs/year) and was diagnosed with obstructive sleep apnea (OSA) at 2011. In the preoperative assessment to uvulopalatopharyngoplasty he held a chest X-ray that revealed a pleural nodular image at the anterior aspect of left superior lobe. The patient was asymptomatic and the examination was normal. For characterization of this lesion the patient held trans-thoracic needle aspiration whose cytology was suspicious for malignancy. For definitive diagnosis and treatment the patient was sent to the thoracic surgery consultation having been proposed for excision of the lesion by VATS. The procedure took place at January of 2012, having the surgery and post-operative period elapsed without complications. The anatomopathological examination of the removed pleura showed a solitary fibrous tumor of the pleura. The tumor expressed positivity for CD34 and bcl2 (focal) and negativity for AE17AE3 and calretina. The patient remained in surveillance. In January of 2013 he held a new chest x-ray where were detected a new lesion with similar location to the previous one. He done a chest CT that revealed a nodular image with approximately 46 × 15 mm, with soft tissue density and large pleural base located between the 4th and the 5th left intercostal spaces. The patient remained asymptomatic and local recurrence of solitary fibrous tumor of the pleura was admitted. Once again he was proposed for excision of the parietal pleura lesion that was made by video-assisted thoracotomy. In the intraoperative period it was found the presence of adhesions between the lung and the chest wall, especially at the previous surgery area and at the tumor localization in the middle third of the 4th and 5th left costal arches. Macroscopically the piece was resected with free margins. The postoperative period was uneventful, and he was discharged at the 5th day with radiological evidence of complete pulmonary expansion. The anatomopathological examination of the surgical specimen revealed a lesion with infiltrative limits and involvement of skeletal muscle, with no evidence of necrosis, mitosis or cytological atypia. The immunohistochemical examination showed nuclear positivity for beta-catenin, focal positivity for actin and negativity for Demina, S100, CD34 and BCL-2. These aspects were compatible with the diagnosis of desmoid tumor. Microscopically it was not possible to define surgical margins.
Discussion: The desmoid tumors are rare neoplasms with benign behavior, but locally invasive and with a tendency to recurrence, that originate from musculoaponeurotic structures. They correspond to 0.03% of all neoplasms and can occur in any location, however they are more frequent in the abdominal and retroperitoneal region. About 20% of patients present with involvement of the chest wall, and the pleural localization is even more rare. In approximately 25% of all recorded cases, a trauma to the site of the tumor, which is often surgical in nature, has been detected. The survival as well as the local recurrence rate at 5 years is 93% and 29%, respectively.

***Key words**: Desmoid tumor. pleura.*

P098. POST PNEUMONECTOMY TUBERCULOUS EMPYEMA – 5 DECADES LATER

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Introduction: Post-pneumonectomy empyema (PPE) is a rare complication, with significant morbidity and mortality. With an incidence of 2 to 15%, it usually appears in the first weeks after surgery, although it can occur years later.
Case report: We refer to a 76 year-old man, non-smoker for 50 years, with a history of right pneumonectomy for tuberculosis in

1962, chronic global respiratory insufficiency on LTOT and NIV and a previous episode of severe MRSA pneumonia with the need for mechanical ventilation in 2012. Other comorbidities were hypertension, congestive heart failure, dyslipidemia, hyperuricemia and depression. Usual medication was aminophylline, lisinopril, simvastatin, allopurinol and fluoxetine. He was admitted to the ER with symptoms of dyspnea and productive cough, with no fever, for a week. At the physical examination, he had a mass in the right chest wall, which was tender and displayed no signs of inflammation or fluctuation. He presented respiratory acidosis, elevated C-reactive protein (2.9 mg/dL), no leukocytosis and hyponatremia (124 mEq/L). The chest X-ray showed an opacificed right hemithorax (post-pneumonectomy) and increased bronchovascular markings on the left. He was started on NIV in the ER with rapid improvement of the arterial blood gases and was then admitted to the pulmonary medicine department where the NIV was maintained and antibiotics (piperacillin-tazobactam and amikacin) were started. A thoracic CT-scan was performed, showing a post-pneumonectomy space filled with a non-homogeneous fluid and signs of anterior and lateral thoracic wall invasion with a multiloculated fluid collection within the pectoral muscles, fractures of the 3rd and 4th ribs and of the transverse process of the 3rd thoracic vertebra. The patient was evaluated by a thoracic surgeon. A chest drain was inserted to collect the mass content. The mycobacteriological direct staining of this material was negative. As the drain became ineffective on day 10 and because there was additional growth to the chest wall mass, the patient was transferred to the Thoracic Surgery department. A thoracotomy with biopsies of the chest wall (inflammatory infiltrate of limphocytes and numerous histiocytes) and pleura (inflammatory infiltrate with abcedation foci) were performed. There was no evidence of neoplastic tissue. The definitive diagnosis was obtained by the mycobacteriological culture exam of the material from the chest wall mass, which was positive to *Mycobacterium tuberculosis*. The patient was started on isoniazid, rifampicin, pyrazinamid and ethambutol. The chest CT-scan 2 months after treatment, displayed a dimensional decrease to the mass. After 4 months of treatment, the medication was changed to isoniazid and rifampicin. A high index of suspicion is required for the diagnosis of PPE, especially if it has a late onset. It is confirmed by the microbiological analysis of the pneumonectomy space fluid. The tuberculous etiology is unexpected, as 5 decades have passed since the primary infection. Although the original site of infection in the pneumonectomy space, there was an exterior sign (thoracic mass) of its local spread. This case represents a tuberculosis reactivation, as a PPE, a diagnosis to consider, even after 52 years.

Key words: *Tuberculosis. Post-pneumonectomy empyema.*

P099. A RARE ETIOLOGY OF RECURRENT PLEURAL EFFUSION

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Introduction: Inflammatory myofibroblastic tumor (also known as inflammatory pseudotumor, plasma cell granuloma, xanthogranuloma, fibroxanthoma and fibrous histiocytoma) is a rare and benign entity, which mimics malignant processes and can affect virtually any organ system and is more frequently found in the lung (representing < 1% of all lung tumors). It usually presents with nonspecific symptoms of cough, fever, dyspnea and hemoptysis, and on imaging assessment with a solitary mass with > 3 cm in size, located in lower lung lobes. The definitive diagnosis is made by biopsy. Despite the reported spontaneous healing, treatment involves complete surgical resection, usually with excellent prognosis.

Case report: The authors present the case of a non-smoker 77-year-old man with a history of ischemic heart disease, permanent atrial fibrilation, arterial hypertension and dyslipidemia. He was admitted to the ER for symptoms of dyspnea on exertion and non-productive cough with 15 days of evolution, without fever or other symptoms. The blood work showed no major changes. He performed a chest X-ray that revealed a moderate left pleural effusion and a chest CT scan additionally showed a nodular lesion of 40 mm in the left lower lobe (LLL) with punctate calcifications, probably being a passive atelectasis. He underwent thoracentesis that drained 1,500 cc of serohematic fluid with a predominance of lymphocytes, without identification of neoplastic cells or microorganisms. He started diuretics with clinical and radiological improvement, for which it was assumed congestive heart failure. About 1 month after discharge, he was readmitted for worsening of the dyspnea and cough, this time associated with low-grade vespertine fever. New imaging assessment showed recurrence of the pleural effusion, maintaining the LLL nodule seen earlier. He was submitted to a new thoracentesis, which drained 400 mL of serohematic fluid whose cytochemical and cytological examination revealed many lymphocytes without other changes, negative immunophenotyping and negative direct and cultural assay for mycobacterias. He also underwent bronchoscopy with brush and bronchoalveolar lavage without identification of neoplastic cells. The pleural biopsy showed lymphocytes infiltrate compatible with nonspecific chronic pleuritis. The blood work, again showed no major changes beyond ESR of 120 mm/h. Because of the recurring pleural effusion associated with fever, tuberculostatic therapy was empirically started, assuming a potential pulmonary tuberculosis. About two months later the patient maintained the same symptoms, the pleural effusion and the 40 mm LLL nodule. The case was brought to discussion with imagiology and it was decided to readmit the patient to perform a CT guided transthoracic fine needle aspiration biopsy. The histopathologic results revealed a fibrovascular tissue with hyalinization and an inflammatory infiltrate composed predominantly by lymphocytes and plasma cells. The immunocytochemistry testingrevealed to be compatible with an inflammatory myofibroblastic tumor. The patient was referred to Cardiothoracic Surgery, and is scheduled for atypical resection of the LLL.

Discussion: In addition to the clinical challenge, which went through an interesting diagnostic path, we intend to present a very rare etiology for a recurrent pleural effusion, which should be considered.

Key words: *Inflammatory pseudotumor. Inflammatory myofibroblastic tumor. Pleural effusion.*

P100. PSYCHOGENIC COUGH – THE DIAGNOSIS OF EXCLUSION SHOULD BE INCLUDED

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Introduction: Chronic cough (> 2 months) is a common symptom in a pulmonology outpatient clinic. The etiological study is often a complex challenge, essential for an effective treatment.

Case report: A 32 year-old businesswoman, married, resident in Vila Nova de Gaia, non-smoker, with no known diseases and no chronic medication. In March 2013, she was admitted in the emergency department due to non-productive cough with laryngeal tone, which had started two months before. The cough restricted her daily activities, worsened in the evening, and stopped during the sleep. The patient reported that the cough was caused by a sensation of foreign body in the oropharynx, but she did not identify a choking episode. She denied other symptoms like wheezing,

nasal congestion, postnasal drip, heartburn and fever. She had no history of relevant environmental exposure or allergies. The patient had already been observed by her general practitioner and medicated with clarithromycin, levocetirizine and budesonide without improvement. On examination she had an uninterrupted cough with no respiratory distress, SpO_2 (21%): 100%, normal cardiopulmonary auscultation and no peripheral edema. She had normal laryngoscopy, chest radiograph and blood analysis. Given the stability of the patient, further study was conducted in our outpatient clinic. She performed a chest CT, plethysmography, endoscopy and a bronchoscopy with bronchoalveolar lavage, which was sent to microbiology and micobacteriology analysis but no abnormalities were found. The patient started esomeprazole, inhaled formoterol/budesonide and an antitussive with no improvement of symptoms. Given the persistence of the cough which only disappeared during sleep, despite the prescribed medication, and given a normal medical examination and diagnostic procedures, the possibility of being a psychogenic cough was considered and the patient was referred to Psychiatric consultation. The psychiatrist prescribed citalopram 40 mg, trazodone 50 mg, diazepam 10 mg 3id and relaxation techniques, which decreased the frequency of cough. In October 2013 she became pregnant and in the next consultation she did not cough even once and she said she rarely coughed. Medication was changed to venlafaxine 75 mg, trazodone 100 mg, and diazepam 5 mg SOS. The pregnancy proceeded without complications, with clear improvement of mood and anxiety. Cough was rare and the patient associated it with peaks of anxiety. The diagnosis of psychogenic cough was assumed and she currently maintains follow-up in Psychiatry consultation, weaning from antidepressant medication.

Discussion: This case describes a rare cause of cough. Chronic cough is a symptom that often worries patients and that leads to performing various diagnostic procedures. In this case report, the absence of cough during sleep pointed to the possibility of being psychogenic. However, this is a diagnosis of exclusion and it is extremely important to rule out organic causes, particularly asthma, gastroesophageal reflux and posterior nasal drip syndrome. In this case, a careful assessment of the patient didn't identify any organic cause of cough and the improvement of symptoms after taking anxiolytics, antidepressives, relaxation techniques and pregnancy strengthened the hypothesis of being a psychogenic cough.

***Key words**: Chronic cough. Psychogenic cough.*

P101. SYNDROME OF INAPPROPRIATE SECRETION OF ANTIDIURETIC HORMONE ALONGSIDE WITH RESPIRATORY FAILURE

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Introduction: Hyponatremia is tipically observed in the final stages of chronic pulmonary obstructive disease (COPD). In hospitalized patients, hyponatremia is commonly caused by syndrome of inappropriate antidiuretic hormone secretion (SIADH), with an incidence as high as 30%. While there are several causes for SIADH, most of the cases are due to malignancy, mainly small-cell lung carcinoma. By a case report, we review the differential diagnosis of hyponatremia and management of SIADH in a hospitalized COPD patient.

Case report: We report a case of a 58-year old male that presented to the emergency department with symptoms of confusion, unsteadiness, headaches and worsening of usual dyspnea, with no history of fluid loss. He had a previous history of 30-pack year smoking, COPD and respiratory failure, already under oxygen therapy and non-invasive ventilation. He used no medication other than 4-daily nebulized ipratropium bromide and salbutamol. On physical examination, he had polypnea (25 cpm), tachycardia (120 bpm) and low periphery oxygen saturation (88% with 35% Venturi-Mask). Further physical examination was unremarkable. Laboratory results revealed hyponatremia (122 mmol/L), low serum osmolality, normal serum creatinine concentration, normal acid-base and potassium balance, low blood urea nitrogen and serum uric acid concentration and no signs of inflammatory response. Common causes of hyponatremia were excluded, such as medications, pain, respiratory infections, including tuberculosis, hypothyroidism, adrenal insufficiency and HIV infection. The urine analysis revealed elevation of osmolality and sodium concentration. A head-thorax-abdomen computed tomography was performed, with no signs of malignancies or central nervous system disease. Therefore, based on clinical euvolaemia and the biochemical data, the working diagnosis was SIADH possibly secondary to respiratory failure or idiopathic. He was placed on fluid restriction and furosemide, which increased serum sodium to 136 mmol/L in 8 days.

Discussion: Although already described, the mechanism of SIADH in respiratory failure is still unclear. It probably shares features with other pulmonary diseases that can cause hyponatremia, such as asthma, cystic fibrosis, pneumonia and COPD. Nevertheless, in a COPD patient, hyponatremia should get proper attention and SIADH etiology, including malignant causes, such as lung carcinoma, should be studied.

***Key words**: SIADH. Hyponatremia. Respiratory failure. COPD.*

P102. ADAPTIVE SERVO VENTILATION – NEW APPROACH TO THE PATIENT WITH PERIODIC BREATHING AND CENTRAL APNEA

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Introduction: Periodic breathing and Central apnea is the most prevalent form of Sleep-disorders breathing in patients with decompensated congestive heart failure. It is estimated that approximately 50% of ICC patients suffering from breathing disorders during sleep CSR and/or obstructive sleep apnea syndrome (OSAS). The Cheyne-Stokes breathing is defined as an abnormal respiratory pattern in which periods of hyperventilation with increasing/decreasing tidal volume alternated with periods of central apnea/hypopnea. In most patients, the symptoms of this respiratory pattern are camouflaged by heart disease. The CSR may accelerate the progression of heart failure by intermittent hypoxemia (low blood oxygen concentration), increased afterload, increased sympathetic activity and fluctuations in heart rate and blood pressure.

Case report: Male patient, 82 A, with a history of congestive heart failure, DM type II, HTA, SOAS and background of EAM, cardiac surgery and adenocarcinoma of the sigmoid. Performed polysomnography in 1999 diagnosed with severe OSA (AHI 38/h). Fixed CPAP therapy began in 1999 with average adherence 4h43min and AHI average of 25/h. Had change to Auto-CPAP with pressure 5-15 cmH_2O verifying a mean adherence of 4h36min and AHI reduction to 16/h. In 2012 performed pulmonary function tests showing the presence of moderate obstructive ventilatory changes and proof of negative bronchodilation. Arterial blood gases showed normoxemia, normocapnia and the normal acid-base balance. The mean oxygen saturation measured by overnight oximetry was 92%. Echocardiogram verified the existence of mild aortic and mitral insufficiency with left ventricular hypertrophy and reduced global systolic function. Sends up new change in ventilation mode to Auto-bilevel being that the response was equally positive AHI 12.3/h and 20% of periodic breathing. Underwent polysomnography new in 2012 for measuring the parame-

ters change to the ventilatory mode Auto-SV. Changing the equipment allowed the reduction of AHI to 5.1/h and reducing the percentage of periodic breathing pattern to 1.8%.
Discussion: The CPAP therapy and auto-CPAP subsequently proved effective in solving the obstructive component maintaining the increased average hypopnea index, and the % of periodic breathing. With auto-bilevel was able to correct the hypopnea index but no positive response from the % of periodic breathing. The servoadaptive ventilation was considered more effective in correcting the apnea hypopnea index acting on all types of respiratory disorders, including central apneas and periodic breathing unlike other ventilation modes. Non invasive ventilation – Auto SV is considered the first-line treatment in patients with standard CSR.

Key words: *Cheyne-Stokes respiration. Central sleep apnea. Auto servo ventilation. Congestive heart failure.*

P103. BODY POSITION INFLUENCE IN A CASE OF MIXED SLEEP APNEA

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CHTMAD.

Objective: Describe the study complexity of a patient with mixed sleep apnea in which the therapeutic solution was only obtained after use of several different diagnostic and therapeutic methods.
Case report: Male patient with 56 years old, engineer, sent to CHTMAD sleep consultation, already diagnosed with Sleep Apnea 10 years before, in another health institution. The patient was being treated with APAP (Virtuoso LX). In the first consultation he refered anginal pain, having been medicated for it. He was great adherence to APAP (use > 4h = 93%); however, the physician decides to exchange the equipment for not providing data on the residual apnea/hypopnea index (IAH). The following card registration revealed a mild to moderate residual AHI, accompanied by some adaptation issues. It was decided to perform a therapeutic polissonography, which result in 8 cmH_2O of CPAP. In the following records of CPAP memory card, residual AHI remained at about 10/h and large discrepancies were observed in the specifically day-to-day readings. In this situation the choice was performing a cardiorespiratory sleep study (CSS) associated with ventilation for 3 nights, which showed disparity directly associated with body position. It was also observed that the respiratory events in the supine position were predominantly central type. It was proposed positional therapy associated with CPAP. In the following consultation, even with the measures adopted so far, there was also the presence of residual events in significant number, predominantly central type. To clarify this situation and to exclude the presence of complex sleep apnea and positional dominance, it was decided to perform new CSS (3 nights), through which it was possible to verify the presence of central apneas. The patient could not avoid the supine position, even with the use of positional therapy. It was then decided to adapt the patient to servoventilation, in which we obtained effective correction of obstructive respiratory events and central type in subsequent memory card readings.
Discussion: This case suggests the importance of positional changes in the severity of central sleep apnea. The memory card registration given by the CPAP equipment must be analyzed carefully, taking into account all aspects (central apnea index registration and day to day residual AHI). A CSS associated with ventilation or therapeutic polissonography should be considered if any doubt remains in memory card reading. In cases of central sleep apnea, the 1st line treatment is servoventilation, however, other options may be explored first.

Key words: *Body position. Mixed sleep apnea. Servoventilation.*

P104. CHRONIC COUGH AND RESPIRATORY FAILURE. WHY?

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Case report: Female patient, 59 years old, non-smoker with diagnoses of arterial hypertension, diabetes *mellitus* and "chronic rhinitis", since 20 years, characterized by dry cough without improvement with inhaled or antihistaminic therapy. Patient denies previous investigation with chest computed tomography (CT scan) or respiratory function tests. Admitted in Emergency Department with worsening of cough, dyspnea and chest pain. Arterial blood gas (ABG) (FiO_2: 40%) showed type 1 respiratory failure (PaO_2: 52 mmHg) and the chest X-ray showed pulmonary infiltrates in right base. Hospitalized with diagnosis of community-acquired pneumonia and empirically antibiotherapy was initiated with levofloxacin. New Rx chest X-ray revealed atelectasis in the right lower lobe and chest CT scan showed pneumonia caused by an endobronchial foreign body with a 13 mm compatible with tooth impacted in the emergence of the right lower lobe bronchus". The bronchoscopy (BC) that was performed confirmed the presence of a tooth, which was removed. After BC, there was clinical improvement and ABG normalized. One month later, the patient remained asymptomatic and spirometric functional assessment was normal.
Discussion: Chronic symptoms should be investigated, especially if the complaints do not improve with standard medication. A small number of foreign bodies are found incidentally in bronchoscopic inspection. Most commonly mentioned are food, nails and pieces of toys.

Key words: *Respiratory failure. Pneumonia. Chronic cough.*

P105. THE HOSPITALIZED SMOKER: THE IMPORTANCE OF THE HEALTHCARE PROFESSIONAL INTERVENTION

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Introduction: Hospitalization can be an important opportunity for smoking cessation interventions. Medically ill, smokers may require intensive efforts to assist them in quitting. However, they often do not receive adequate treatment for tobacco dependence. We report a case regarding the initiation of smoking cessation treatment during hospitalization and abstinence at 24 weeks following discharge.
Case report: 46-year old male, current smoker, with a history of 30 packs per year, without known diseases, hospitalized for pneumothorax. Without any previous attempt to quit smoking, he was smoking 20 cigarettes per day and his first cigarette within 30 minutes of waking and his Fagerström Test for Nicotine Dependence scored 7. As he was highly motivated to quit his smoking habits, he was referred to a tobacco dependence visit. During hospitalization, a personalized quit message was given, tailored to his admitting condition. Benefits and side effects of varenicline were discussed and he initiated treatment. He also received a printed information sheet on behavioral changes, helpful tips for smoking cessation, and outpatient quit resources. Daily counseling was provided, with report of minimal nausea, and he was discharged on the 10^{th} day of hospitalization. Following discharge, he attended 4-week, 12-week and 24-week follow-up tobacco dependence visits, with a mean measure of motivation of 8 (in a scale from 0 to 10) and remained adherent to medication and tobacco abstinent. He reported minimally significant nausea and no craving.

Discussion: It is essential to identify smokers during hospitalization and to provide them with counseling, treatment, and post-discharge follow-up support. Due to their acute medical illness, it is possible that hospitalized smokers may be less tolerant of adverse effects, and thus less able to successfully initiate a medication regimen. However, this was a successful case of tobacco withdrawal during the hospitalization period and following discharge, with personalized behaviour counseling and pharmacological treatment with varenicline.

***Key words**: Hospitalization. Smoker. Cessation. Varenicline. Intervention.*

P106. A SINGULARITY IN A STAGE IV NON-SMALL CELL LUNG CANCER

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Case report: 65-year non-smoker male with a history of a squamous-cell carcinoma of right maxillary sinus (biopsy, July, 2012) treated with chemo-radiotherapy until October 2012, with no evidence of recurrence until now. In June, 2013, he was referred to our Pulmonology Department for investigation of persistent chest pain and a large left lung mass detected on chest X-ray. The chest computed tomography (CT) scan showed a 5 cm mass in left lower lobe eroding the 5th, 6th and 7th ribs. A Tru-cut CT-scan guided biopsy revealed a squamous-cell carcinoma. The fluorine-18 fluorodeoxyglucose positron emission tomography (F18-FDG PET)-CT identified uptake of F-18 FDG in the mass located at posterior middle third of left lung (SUV_{max} 13,25) with chest wall invasion and concomitant uptake in the right adrenal gland (SUV_{max}11,67), suggesting a second primary stage IV lung cancer. On the 15th August, 2013 the patient developed septic shock due to tumor necrosis and pneumonia, treated with ciprofloxacin and piperacillin/tazobactam. It was decided, before *performance status* (PS) ECOG. 3 and septic shock, to maintain this patient only in palliation and best supportive care. However, patient's clinical condition gradually improved with antibiotics and he was discharged 12 days later on oral antibiotics. A one week later the patient developed jaundice and worsening of back chest pain but the abdominal ultrasound disclosed a normal liver and a non-dilated biliary ducts pointing to drug toxicity. Oral antibiotics and non-steroidal anti-inflammatory drugs were stopped, with progressive disappearance of jaundice. The intensity of pain led to transitory increase of transdermal fentanyl until full pain control. Two weeks later patient had full control of pain so analgesic schedule was lowered and the patient progressively abandoned analgesic treatment. Due to significant clinical improvement, the patient only returned for the follow-up on the 18th March 2014 when chest X-ray unexpectedly showed a complete disappearance of the former left lung tumor mass. On the 26th March, 2014 a chest CT-Scan confirmed an almost total disappearance of tumor mass, with a remaining local sub-pleural thickening, with subtle irregularity of posterior costal wall, maintaining the 5th to 7th rib erosion. Also remarkable was the complete disappearance of the left adrenal gland mass. A further F18-FDG PET-CT on April 2014, revealed absence of significant uptake of F18-FDG and on the last every three month follow-up, on May 2014, the patient remained clinically well, with no pain and no analgesia.
Discussion: Although no apparent reason for this very rare and unexpected clinical phenomena without specific oncologic treatment, the life-threatening lung infection with high fever and unspecific immunostimulation seems to be the only known mechanism explaining the spontaneous tumor regression. Other possible explanations are discussed.

***Key words**: Cancer. Lung. Singularity. Regression. Sepsis.*

P107. A RARE CASE OF SPONTANEOUS REGRESSION OF NON-SMALL CELL LUNG CANCER

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Introduction: It is generally recognized that the growth rate of different types of cancer varies greatly and that also the growth rate of a specific type of cancer varies widely in different patients. The spontaneous regression of cancer is defined as the partial or complete disappearance of a malignant tumor in the absence of all treatment or in the presence of therapy which is considered inadequate to exert a significant influence on neoplastic disease. It's a rare phenomenon, with incidence estimated to be < 0.001%. Locally advanced lung cancer, if untreated, typically progresses although the rapidity of progression may vary. It has one of the lowest survival outcomes of any cancer, with an overall 5-year survival of just 14%. Stage specific 5-year survival has been reported to be 42% for stage 1 non-small cell lung cancer decreasing to < 5% in stage IV.
Case report: We report a rare case of a 84 year-old male with stage T3N2Mx biopsy proven poorly differentiated adenocarcinoma of the lung in 2008, with hilar and infracarinal lymph node metastasis. For multiple comorbidities presented by the patient (hematological, cardiovascular, gastrointestinal and renal), it was concluded that he wouldn't benefit from treatment with chemotherapy, radiotherapy, or surgery. It was decided biological treatment with erlotinib. While waiting for authorization to begin therapy, the tumor mass and lymph node metastasis has spontaneously regressed with no active medical or surgical treatment. We sought further analysis of the Pathology slides with histological confirmation of the diagnosis. The patient remained in follow-up for 61 months without documentation of recurrence of pulmonary lesion or appearance of new lesions. He is currently without respiratory complaints.

***Key words**: Malignant tumor. Lung adenocarcinoma. Spontaneous regression.*

P108. ECTOMESENCHYMAL CHONDROMYXOID TUMOUR OF THE TRACHEA, A CASE REPOST OF AN UNIQUE TUMOUR

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Introduction: Ectomesenchymal chondromyxoid tumour (ECT) is a rare, benign neoplasm of uncertain histogenesis. To our knowledge there are only 45 cases reported in the English literature. We present a case of a patient with an ECT in the trachea. We found no description of this type of tumour outside of the oral cavity.
Case report: A 37 year old female patient was referred to the outpatient clinic due to a history of breathlessness and worsening dyspnoea on exertion. Her complaints were going on for three years and were getting progressively worse. She had a 7 pack-year smoking history until the age of 30 years. On examination the patient had a low BMI, a slight stridor and an expiratory whistle. Pulmonary sounds were very light. Lung function tests revealed very severe bronchial obstruction with hyperinsuflation (FVC-3,4 8 ml, FEV1-0,71 ml, FEV/FVC-20.4%, FEF25/75-0,31 L/seg, FEF 50-0,37 L/seg). The patient underwent a computed tomography scan of the neck and chest that showed an endotracheal nodular polylobuled image, just above the carina, causing obstruction of about 80-90% of the trachea. The patient was submitted to a rigid bronchoscopy with total excision of the mass. The histological study showed a multilobuled mesenchymal lesion, localized in fragments of respiratory

submucosa, occasionally entrapping acins and ducts of the respiratory glands. It was composed of fusiform cells with uniform small nuclei with no atypic cells. Immunohistochemistry was positive for CD 34 and protein S-100. The morphological characteristics associated with the immunohistochemistry profile were consistent with ECT. After excision of the mass the patient was free from any respiratory symptoms, she gained weight and there has been no recurrence after 12 months' follow-up bronchoscopy.
Discussion: ECT is a rare benign neoplasm arising in the oral cavity, most frequently in the tongue. At the microscopic level, it is recognizable as a well-circumscribed unencapsulated proliferation of uniform round to fusiform cells embedded in a chondromyxoid matrix. Lastly, the immunohistochemistry profile is characterised by positivity for glial fibrillary acidic protein and frequent positivity for S-100 and cytokeratins. To our knowledge this is the first case of this type of tumour in the trachea.

Key words: *Ectomesenchymal chondromyxoid tumour. Trachea.*

P109. SUPERIOR VENA CAVA SYNDROME SECONDARY TO FOLLICULAR LYMPHOMA: ATYPICAL PRESENTATION

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Introduction: Follicular lymphoma (FL) is the second most common lymphoma worldwide. It is equally common in women and men and it has an indolent behaviour. non-Hoghkin lymphomas can present as superior vena cava syndrome (SVCS) but diffuse large cells B lymphoma is the most frequent. The authors describe a case report of a SVCS as the first presentation of FL from anterior mediastinum.
Case report: A 77-year-old women, Caucasian, former smoker (75 pack-year), with history of myelodysplastic syndrome and obesity. The patient was admitted with one-month history of face and neck swelling associated with fatigue. She mentioned left breast and left upper extremity swelling during the day before admission, with no fever, dyspnoea, cough, hemoptysis, chest pain, dysphagia, dysfonia or weight lost. Physical examination showed facial plethora; face, neck, upper left extremity and breast swelling; left jugular ingurgitation, but no lymphadenopathy. A chest X-ray showed superior mediastinum enlargement, and the thorax scan showed a large expansive lesion occupying the anterior mediastinum, with obliteration of superior vena cava and venous thrombosis of left braquiocephalic vein. A second right central/para-hilar lesion was also detected. The abdominal scan showed hepatomegaly and retrocrural lymph nodes. With this information, the differential diagnosis was between the four "Ts" of anterior mediastinal masses. The "terrible" lymphoma and lung tumor were the most probable causes, and tymoma (given the thorax imaging) and teratoma (considering the patient's age) less probable. The bronchoscopy yielded direct signs of tumoral lesion on the anterior wall of the bronchium and indirect signs of tumor on trachea and carina. The bronchium biopsy revealed epithelium without atypia, with lymphocytic infiltration of the stroma (CD 45+, CD 56-), but was inconclusive. We brought the case to the multidisciplinary meeting for discussion. The revaluation of the biopsies with immunohystochemistry yielded the definitive diagnosis: Non-Hodgkin B cells lymphoma–follicular lymphoma. The patient started chemotherapy with R-CHOP (rituximab–cyclofosfamid, doxirubicine, vincristine, prednisone). She evolved with pancytopenia and died after going into severe neutropenia and septic shock.
Discussion: The FL usually presents with peripheral, mediastinal, and retroperitoneal nodes, but large mediastinal masses are rare. This case represents an atypical presentation of FL as SCVS It was a challenging diagnosis which illustrated the importance of multidisciplinary approaches.

Key words: *Superior vena cava syndrome. Follicular lymphoma. Multidisciplinary approach.*

P110. SOLITARY PULMONARYNODULE-ADIAGNOSTIC CHALLENGE!

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Introduction: The solitary pulmonary nodule is a frequent imaging entity, with multiple etiologies, which is why it is such a diagnostic challenge in clinical practice. Diagnosis involves a detailed history and appropriate follow-up study. This entity can be divided into two major groups, malignant or benign. Pulmonary hamartoma, is included in the benign set. It is a mesenchymal tumor in which malignant potential is debatable and occurs in approximately 0.3% of the general population. This tumor is composed of cartilage tissue, respiratory epithelium, coexisting with other components such as adipose tissue or areas of calcification in varying proportions and with a disorganized cell growth. It can be classified as intraparenchymal or endobronchial and can be present in asymptomatic patients or may cause obstructive symptoms, depending on its location and its size. Pulmonary hamartoma tends to have a slow but steady growth and its malignant transformation is an unusual phenomenon. The treatment depends on the presence or absence of symptoms or associated complications, including bleeding or respiratory infections.
Case report: The authors report a case of a 79-year-old man, a heavy smoker (70 pack-year), with a history of pulmonary tuberculosis 40 years earlier, acute myocardial infarction, hypertension and atrial fibrillation admitted to the Department of Neurology for ischemic stroke with good evolution. On further study, chest radiography revealed a nodular lesion with major axis of 1.5 cm in the right lower lobe (RLL). The CT scan revealed the presence of centrilobular emphysema in the upper lobes and a well-defined lobulated nodule in RLL with about 12 mm. In order to better characterize this lung nodule, a positron emission tomography was carried out which showed a 14.2 × 13.8 mm nodule in the posterior basal segment of the LID with no anomalous uptake metabolic pattern. However, given the medical and smoking history and this "recent" nodular formation, the patient underwent a transthoracic lung biopsy. Pathology showed a pulmonary hamartoma. The functional respiratory study contraindicated surgery. Currently he remains asymptomatic, and is in follow up in the outpatient clinic of the Pulmonology Department.
Discussion: Pulmonary hamartoma is a focal malformation. Etiology remains unknown. Most are incidental imaging findings and histological diagnosis is generally obtained by using invasive procedures. Radiological suspicion of a solitary pulmonary nodule requires various diagnostic hypotheses, among which a pulmonary hamartoma should be included.

Key words: *Pulmonary nodule. Pulmonary hamartoma.*

P111. PLEUROPULMONARY METASTASIS OF BASAL CELL CARCINOMA – A CASE REPORT

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Introduction: Basal Cell Carcinoma (BCC) is a common skin cancer with extremely rare systemic involvement, with low metastatic potential (0.05 to 0.1%). This risk is higher with the number of recur-

rences and the time evolution of the tumor. The risk is also increased in large lesions (more than 10 cm^2) which invade adjacent deep structures (cartilage, bone or muscle) or when histopathology shows perineural invasion. The most common sites of distance metastasis are the regional lymph nodes, lung, bone, skin and liver.
Case report: 66 year-old woman, farmer, non-smoker, with no chronic medication, admitted to the Emergency Department in January 2014 with dyspnea, dry cough, right posterior chest pain and anorexia with a two-week history. The patient was in good general state, eupneic, sub-febrile (37.7 ºC), and peripheral O_2 saturation on room air was 94%. Cardiac auscultation was rhythmic and pulmonary auscultation showed decreased breath sounds in the lower two thirds of the left hemithorax. The chest X-ray showed a heterogeneous opacity on the left lung and occlusion of the right costophrenic angle. The patient had a history of recurrent BCCs since 2003 having undergone adjuvant radiotherapy in 2006. Laboratory tests showed C-reactive protein of 3.84 mg/dL and LDH 256 U/L, with no other significant changes. Chest computed tomography showed a hypodense oval area with ill-defined borders, 4.2 × 3.5 cm in the left upper lobe (LUL) with total collapse of this lobe, pleural effusion collected on the upper left lung ling and visible free right pleural effusion. Pleural effusion increased during the hospitalization, and its analysis showed biochemical parameters of an exudate and presence of neoplastic cells consistent with carcinoma. Blind pleural biopsies were inconclusive. The PET-CT showed two nodular formations, one in the LUL and another one in the small fissure, with a high metabolic rate suggestive of tumor lesions, and imaging and metabolic changes consistent with mediastinal lymph node and multiple bone metastasis. Bronchoscopy showed obstruction of the apical-posterior and lingular, left segmental bronchi, with apparent mucosal integrity. Biopsies were performed and histological study showed features of a basaloid tumor. The immunohistochemical study was suggestive of metastatic BCC. For recurrence of effusion, talc pleurodesis was performed. After the diagnosis of BCC with lymph node, lung, pleural and bone metastases the patient was included in the STEVIE study, a multicenter phase II study assessing the efficacy of Vismodegib in patients with advanced or metastatic BCC.
Discussion: In this case, the patient had a history of CBCs with characteristics that are most frequently associated with the occurrence of distant metastasis (recurrent CBC, long evolution, perineural involvement). Despite initial suspicion of lung cancer, stage IV skin cancer was confirmed. In these situations, when standardized therapy has been exceeded, clinical trials are an alternative for these patients.

***Key words**: Basal cell carcinoma. Metastasis. Clinical trials.*

P112. RARE IS RARE, BUT IT HAPPENS

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Introduction: Pulmonary hamartomas are the most common benign lung tumours and account for up to 75% of the cases. They are usually composed of fat, epithelial tissue, fibrous tissue, and cartilage. Hamartomas have a differential diagnosis with of lung cancer. They can be either parenchymal nodules or endobronchial tumours. The latter are rarely seen and can present as an endobronchial obstructive lesion with atelectasis, obstructive pneumonia or hemoptysis.
Case report: A 53-year-old male, office clerk with a 30 pack-years history of smoking was seen by his family doctor with chest pain, productive cough, fever and light headiness. A diagnosis of pneumonia was made and he was started on amoxicillin/clavulanate. His past medical history included obstructive sleep apnoea on CPAP, hypercholesterolaemia controlled with a statin, lower limb venous insufficiency and liver steatosis. After failing to improve he was admitted to the emergency department with worsening symptoms on examination. His examination was unremarkable with a clear chest. Admission blood tests showed leucocytosis (12,980) with neutrophilia (74.5%), raised CRP of 16.2 mg/dl and LDH 637. His chest x-ray revealed an irregular opacity in the apex of the left lung. Arterial blood gas analysis on FiO_2 21% showed type 1 respiratory failure with pH 7.44, pCO_2 35.5 mmHg, pO_2 53.7 mmHg; HCO_3 25.1 mmol/L. Patient was admitted with community acquired pneumonia with type 1 respiratory failure and started on levofloxacin. He made a clinical improvement together with an improvement of his inflammatory markers (7,880 leukocytes, 73.5% neutrophil, CRP 13.4 mg/dl). Chest computer tomography revealed an obstructive pneumonia with atelectasis due to an obliterative lesion at the apical posterior bronchus on the left upper lobe. Bronchoscopy showed a pedunculated endobronchial mass with total occlusion of the apical posterior bronchus. Bacteriological, mycological and cytological examination of bronchoalveolar lavage was negative as well as a Ziehl Neelsen stain of his sputum. Biopsy revealed a chondroid endobronchial hamartoma. Ablation with argon plasma coagulation was successful with complete patency of the airway.
Discussion: This case report illustrates an unusual presentation of a pulmonary hamartoma. Smokers with endobronchial masses are usually assumed to have a malignant lesion. Luckily our patient presented with a very rare type of hamartoma instead of a lung cancer, which carries a far better prognosis.

***Key words**: Endobronchial hamartoma. Obstructive pneumonia.*

P113. A RARE INITIAL PRESENTATION OF LUNG CANCER

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Lung cancers are the most common tumors associated with paraneoplastic syndromes. They can be classified into endocrine, hematologic, or neurologic syndromes, for example. The endocrine syndromes are characterized by the ectopic production of biologically active peptide hormones by tumor cells that bind to receptors, giving rise to a clinical syndrome. Ectopic secretion of adrenocorticotropin (ACTH) by non-pituitary tumors is a rare cause of ACTH-dependent Cushing's syndrome, accounting for approximately 10-15% of all cases. Although lung cancers, specially small-cell carcinoma (80-90% of all cases), cause one-half of all cases of ectopic ACTH production, fewer than 3 percent of patients with small-cell lung cancer have Cushing's syndrome at the time of diagnosis. We report a 43-year-old male, a smoker with no other relevant past history, who presented to the emergency department with phenotypic features of Cushing's syndrome, 2-week history of chest pain, associated with hypertension difficult to control, metabolic alkalosis, and severe hypokalemia refractory to potassium supplements. Blood and urine tests detected an increase in the values of urinary and serum cortisol and ACTH. CT thorax demonstrated a left-sided hilar mass with irregular bronchial infiltration. Bronchoscopy biopsy confirmed a diagnosis of small-cell lung cancer (SCLC). It was also detected lymph nodes, lung, adrenocortical, liver and bone metastasis. Antihypertensive therapy, potassium replacement, metyrapone, and chemotherapy with carboplatino, etoposide and zolendronic acid was started. It was also performed prophylactic cranial radiotherapy. There was an initial good response with partial remission of the disease, and greater control of hypertension and electrolyte abnormalities. Currently, the patient maintains follow-up, refers dyspnea on effort and keeps Cushing's phenotypic features, but presents controlled blood pressure and plasma potassium and improved values of ACTH and cortisol. While

maintaining excellent general condition and performance status 1, he is in progression of neoplastic disease, with increase in size of the primary tumor and size and number of lymph nodes and liver metastasis, and so started chemotherapy again.

Key words: *Small cell carcinoma. Cushing's syndrome. Ectopic ACTH production.*

P114. PRIMARY PLEOMORPHIC SARCOMA OF THE LUNG – A CASE REPORT

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The lung cancer is the most frequent worldwide tumor, has the higher mortality and encompasses a wide variety of histological subtypes. Primary pulmonary sarcomas, unlike carcinomas are rare tumors. Comprise about 0.013-0.04% of all lung tumors and about 9% of all sarcomas. The pleomorphic sarcoma occurs predominantly in males, with about 60 years of age and who have heavy smoking habits. Typically have an aggressive behavior and a large percentage of local recurrence. The treatment of choice is surgical removal. The authors describe a case of a male subject, 64 years of age, Caucasian race, smoker with smoking history of 50 pack units/year, with no previous pathological conditions with a clinical complaints of cough with hemoptysis sputum, right chest pain associated with anorexia and weight loss unquantified. The patient performed a thorax CT, which revealed the presence of a mass in the posterior segment of the right upper lobe (9 × 6.6 cm) in contact with the parietal pleura, which has bone invasion and destruction of a rib with consequent pathological fracture. Subsequently, the patient realizes fiberoptic bronchoscopy, transbronchial aspiration, transbronchial biopsy and transthoracic biopsy, the last of which showed lung pleomorphic sarcoma. Was also performed PET-CT that proved we are facing an injury with primary pulmonary origin, and also showed a change on left adrenal gland compatible with metastatic lesion (Stage IV-T3N1M1). By not having surgery conditions, the patient began therapy with chemotherapy with paclitaxel and carboplatino which still performs.

Key words: *Pulmonary pleomorphic sarcoma. Pulmonary tumor.*

P115. HEMOPERITONEUM AND HEMOTHORAX WITH HEMORRHAGIC SHOCK – ATYPICAL PRESENTATION OF A RARE TUMOR

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Introduction: NUT midline carcinoma (NMC) is a rare neoplastic disease with an incidence between15-20 cases per year. I tis caused by a rearrangement in the NUT gene and it can manifest in different organs and tissues: typically in head/neck, mediastinum and aerodigestive epithelium. Histologically, it presents as an undifferentiated and highly aggressive carcinoma. It affects manly children and young adults, has no targeted therapy and it is invariably fatal.
Objective: To describe a patient diagnosed with NMC, with devastating clinical presentation and evolution.
Results: A 15 years old female student, born in Azores, non-smoker, with unremarkable medical history, presented in the HDES (Ponta Delgada) E.R. due to left upper quadrant pain that progressed to left thoraco-abdominal pain, fever and unproductive cough. She was then admitted for investigation. In the next days the patient developed haemoptysis and rapid progression to haemorrhagic shock. The thoraco-abdominal CT revealed hemothorax, hemoperitoneum and a thoracic mass located in the left hilum, with 9.5 cm involving the left main bronchus, pulmonary artery and inferior lobe. The thoracocentesis confirmed the hemothorax. The patient was transferred by plane to the UCIMC, with the purpose of Thoracic and General Surgery simultaneous approach. The laparotomy showed an extensive hemoperitoneum, despite no evidence of acute haemorrhage. The thoracotomy revealed a mass of indefinite limits, with cisural involvement, as well as a left inferior lobe hepatisation. During surgery the patient underwent bronchoscopy that showed a left main bronchus infiltrative lesionand purulent secretions. The extemporary histologic bronchial biopsy examination revealed an "undifferentiated malignant tumour". The patient was transferred to the UCIMC. No other haemorrhagic episodes occurred. The definitive exam showed an "epitheliod like tumor, CK8/18+, focal CK 7+ and EMA+". Material was sent for further genetic study to the Instituto Português de Oncologia in Lisbon (IPO). Eleven days after surgery CT was repeated, revealing tumours growth, occupying the left hemithorax, reaching the carina and leading to left upper lobe atelectasis. Given the clinical stability, rapid progression and inoperability of the lesion, the patient was transferred to the IPO Pediatric Unit, which confirmed the diagnosis of CLMN. She was irresponsive to chemotherapy and died 2 months after onset of complaints, due to disease progression.
Conclusions: The rarity of this tumour and the age group that reaches; the index event and the high aggressiveness are relevant aspects of this clinical case.

Key words: *Midline carcinoma. Hemorrhagic shock.*

P116. PRIMARY PULMONARY MALT LYMPHOMA

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Introduction: Primary pulmonary lymphoma is a rare disease (represents about 0.5 to 1% of malign pulmonary tumours) being more frequent the secondary lung involvement by extrathoracic or nodal lymphoma. MALT lymphoma of the lung (extra nodal lymphoma of b cells of marginal zone of MALT origin (mucosal associated lymphoid tissue) is one of the rare histologic types that can develop primarily in the lung. It is more frequent on the 6th to 7th decade of life, and at the date of the diagnosis about 50% of the patients are asymptomatic. The reported radiologic presentations can vary a lot.
Case report: 74-year-old female patient, non smoker, with history of pulmonary tuberculosis on youth. Asymptomatic, namely without respiratory complains, but that for suspicion of abdominal mass at the clinical examination, performs abdominal TAC and, posteriorly, Thoracic TC with the identification of: grossly rounded pulmonary opacity (4 × 3,4 cm) at the level of the right inferior lobe (RIL) suspected of atypical lesion but without being possible to exclude a rounded atelectasis; discrete cicatricial changes at the same lobe; small calcified mediastinum adenopathies and multiple calcified millimetric residual hepato-splenic foci in the probable context of granulomatous disease; calcified adenopathies next to hepatic hilum and porta vein. For the etiologic study, bronchial fibroscopy has been performed, with the identification of diffusely hyperemiated mucosa without other endoscopic changes, and pulmonary biopsies, bronchial brushing and respiratory secretions were collected, whose results were inconclusive. The patient was subjected to positron emission tomography and it has been registered: abnormal captation of FDG - F18 at the lesion of the RIL (SUV 4.7) being suspected of neoplastic involvement of this lobe;

diffuse captation at the level of the spleen (SUV 3.9) and lung (SUV 4) suggestive of diffuse disease of inflammatory nature. Because of the suspicion of neoplastic disease, an atypical surgical pulmonary resection with extemporaneous examination was proposed. An apical segmentectomy of the RIL was performed and, on the anatomopathological examination, it has been identified a nodule of 3.5 cm of diameter, that correspond to small lymphocytes proliferation, with lymphoplasmocitary differentiation focally, with numerous lymphoepithelial lesions. The histological aspect and immunohistochemical examination were compatible with B cell lymphoma, mucosal associated lymphoid tissue (MALT). The patient has been referred to the haematology consultation and is actually being followed in the Portuguese Institute of Oncology of Lisbon.
Discussion: The authors present this case because of the low incidence of this entity and the very variable radiological presentation. They stress out the difficulty to obtain the diagnosis on many of the cases reported, being necessary a surgical approach for getting it. Positron emission tomography (PET), despite having few reports on these situations and the indolent nature of this type of lymphoma, may have a role in the march to obtain the diagnosis.

***Key words**: Lymphoma. bronchofibroscopy. Positron emission tomography.*

P117. MUCOEPIDERMOID CARCINOMA OF THE LUNG – THE REALITY OF RARITIES: A CLINICAL CASE

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Introduction: Mucoepidermoid carcinoma of the lung is a tumor of low malignant potential; we believe it is indolent, but little is known about its clinical features because of the low incidence rate (incidence of 0.2% of all lung cancers).
Case report: We report the clinical case of a 67 years old, non-smoker woman, with a medical history of epilepsy, hypertension and depression, that went to the ER with dyspnea, cough, right anterior chest pain and nonselective anorexia for the past 6 months. Blood samples showed: normochromic normocytic anemia, positive D-dimer test (10.4 μg/mL), LDH 245 U/L, PCR 1.43 mg/dL. Arterial blood gas showed hypoxia and hypocapnia. Chest radiography showed a right para-hilar mass and small, bilateral pleural effusion. Chest CT showed "bilateral pleural effusion; large pericardial effusion; peribronchial thickening of LPB and RIL and obliteration of the apical segment of RIL; large mass on RSL, 30 mm, with pleural contact; some bilateral micronodules; hilar and mediastinal lymph nodes; signs of pulmonary thromboembolism involving segmental arteries of RIL". The patient refused the bronchoscopy. The TT echocardiogram confirmed the pericardial effusion and was performed pericardiocentesis (fluid cytology: neoplastic cells, corresponding to carcinoma metastasis). It was performed a transthoracic biopsy of the lung mass whose histology was compatible with mucoepidermoid carcinoma of the lung. Tumor markers: CEA 66.9 ng/mL, CA 125 1,550 U/mL, CA 19.9 > 10,000 U/mL, Cyfra-21 4.3 ng/mL. Tumor staging: brain CT showed multiple nodular formations compatible with secondary deposits. The patient underwent treatment with warfarin, long-term supplemental oxygen therapy (2 L/min) and dexamethasone. PET-CT confirmed the evidence of malignancy of the thoracic mass and supraclavicular, mediastinal and bilateral hilar nodes. The search for mutations in the EGFR gene was negative. The patient had a performance status 0/1. She started holocranean radiotherapy and chemotherapy (QT) with carboplatin + vinorelbine. She completed 3 cycles of chemotherapy, with anemia, thrombocytopenia and vomiting becoming intolerant to the side effects of chemotherapy. We decided to do a revaluation: tumor markers: CEA 109 ng/mL, CA 125 1,770 U/mL, CA 19.9 > 15,000 U/mL, CA 15.3 45.2 U/mL, NSE 16.8 ng/mL, Cyfra-21 3.6 ng/mL, Chest CT showed "reappearance of right pleural effusion; slight reduction of the dimensions of the proliferative lesion; without change of nodal involvement", Brain CT showed no secondary lesions", TT Echocardiogram showed "slight pericardial effusion". In view of the apparent stability of the disease and the patient performance status, it was decided to start maintenance chemotherapy with oral vinorelbine, which currently holds.
Discussion: We present a clinical case of a high degree CMP, which corresponds to a higher risk of metastasis, tumor recurrence and death, with a worse prognosis than those of low degree. It is highlighted in this case the exuberant metastases (pleural, pericardial, cerebral, lymph nodes), contrasting with the relatively indolent course of the disease since the diagnosis (10 months ago). The rarity of the diagnosis and the lack of studies in the literature affect the systemic approach to these patients, becoming a challenge for the scientific community.

***Key words**: Mucoepidermoid carcinoma of the lung. Treatment. Survival.*

P118. NODULAR VASCULITIS – A RARE CUTANEOUS SYNDROME OF A LUNG CANCER

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Introduction: The existence of a paraneoplastic syndrome is a frequent finding in lung cancer and may even be the first manifestation of the disease or its recurrence. The erithema induratum or nodular vasculitis, is a panniculitis that results from a hypersensitivity reaction to endogenous or exogenous antigens. The literature is sparse with regard to its causes, but it has been described primarily in association with infection by *Mycobacterium tuberculosis* and more rarely, in relation to drugs or paraneoplastic etiology.
Case report: We report the case of a 63 years old Caucasian and non-smoking woman, with history of cerebrovascular disease, hypertension and depressive syndrome. She was evaluated by Dermatology of our hospital because of the emergence of nodular, firm and painful erythematous skin lesions, scattered throughout the length of the lower limbs. A skin biopsy was consistent with erythema induratum/nodular vasculitis. The patient was referred to our Pneumology outpatient clinic after performing a chest X-ray that showed a rounded hypotransparency image at the right lung field. She had no respiratory symptoms, referring only mild asthenia and weight loss poorly quantified. Laboratory tests were all normal (HIV negative) and the tuberculin tests were negative. A thoracic-CT confirmed the presence of a lobulated mass located at the middle lobe, with some satellites nodular lesions, two well-defined contralateral lesions at the level of the lingula and left lower lobe and some adenopathy with right lateral-trachea and precarinal location. A transthoracic needle aspiration biopsy of the primary lesion was performed, which was consistent with lung adenocarcinoma (CK7 +, TTF1 +); it was staged in T3N2M1a - stage IV. The patient started chemotherapy evolving to stable disease and with progressive regression of the skin lesions.
Discussion: Although mostly related to latent tuberculosis, nodular vasculitis may be the first manifestation of other underlying conditions. Despite the cutaneous paraneoplastic syndromes are rare and nonspecific in lung cancer, we emphasize the importance of maintaining high suspicion, since they may represent an opportunity for early diagnosis and treatment.

***Key words**: Paraneoplastic syndrome. Lung cancer. Nodular vasculitis.*

P119. CHALLENGING TASK IN DIAGNOSING A PULMONARY

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Introduction: Primary malignant melanoma of the lung (PMML) is a rare and aggressive condition, responsible for 0.01% of all lung neoplasms.
Case reports: Case 1. The first case was reported in 1888. In 1967, Jensem proposed the following widely accepted criteria: 1) No prior history of melanoma or excision of a cutaneous, ocular or mucous membrane lesion unless the pathologic examination ruled out melanoma; 2) A solitary lung mass or nodule; 3) Typical histopathology confirmed by immunohistochemistry; 4) No demonstrable tumour elsewhere at the time of diagnosis; 5) Autopsy, without primary malignant melanoma being detected elsewhere, if performed. As these criteria were defined long time ago, and include only clinical criteria, some authors have proposed a positron emission tomography-computed tomography (PET-TC) showing no metastatic nor node increased uptake as a valid criterion. The major difficulty in diagnosing these tumours is the possibility of spontaneous regression of the cutaneous lesion in a pulmonary metastatic melanoma. Case 2. A 79-year-oldwoman with 4 months of dry cough, progressive dyspnea and chest pain. History of hypertension, pacemaker, gastroesophageal reflux and cutaneous lesion on the left hemiface biopsied 14 months ago, suggesting solar lentigo. Rebiopsy recommended in the case of a persistent lesion but refused by the patient. No progression 6 months after. Antihypertensive and gastric protection medication. No history of allergy. Physical examination reveals reduced breath sounds and decreased vocal resonance on the lower half of the left hemithorax. Analytical study with no changes. Chest radiograph with opacity of all the left side with mediastinal shift on the right side. The patient was admitted for investigation of pleural effusion. Thoracentesis was performed with orange fluid drainage of 2,250 ml that revealed to be an exudate ADA 27.7 (reference value < 45); Bacteriological, mycological and micobacteriological culture negative. Pleural biopsy compatible with unspecific pleurisy. Thoracoabdominal-pelvic TC revealed an heterogeneous mass with liquid and solid components measuring 16 × 13 cm on the left hemithorax, causing ipsilateral lung collapse with abundant pleural effusion, lowered hemidiafragm and contralateral mediastinal shift, without node involvement. Transbronchial biopsy revealing neoplasm compatible with malignant melanoma. PET with increased uptake in left lung. No alteration in the brain TC. Under the assumption of malignant melanoma without other increased uptake in PET and due to the history of an inconclusive cutaneous lesion on the left hemiface, we reviewed the biopsy blade and a solar lentigo without malignancy was confirmed.
Discussion: After reviewing the biopsy of the cutaneous lesion performed the year before, we concluded that our case is a PMML, as it fulfilled the Jensem criteria.

Key words: *Melanoma. Lung neoplasms.*

P120. METASTATIC PRIMARY PULMONARY SYNOVIAL SARCOMA

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Introduction: Synovial sarcoma (SS) is a malignant tumour of soft tissues that occurs mainly in young adults and more commonly in males. Primary pulmonary SS are very rare. Primary pulmonary SS are usually peripheral, well-circumscribed but non-encapsulated, solid tumours that may present with cough, haemoptysis, and chest pain. These tumours can also present as incidental tumours on chest X-ray. Primary pulmonary SS mainly spreads regionally and systemic metastases to liver, bone, brain and lung occur in almost a quarter of patients. The diagnosis of primary pulmonary SS is challenging due to its rarity and metastatic SS to the lung always needs to be excluded. The diagnosis is usually made on the basis of histologic, immunohistochemical features and by the detection of the specific translocation t(X; 18)(p11; q11), that is found in over 90% of the cases. The differential diagnosis is wide and includes both more common epithelial and other rare mesenchymal tumours. Prognosis is generally poor, with a high mortality rate (50%).
Case report: The authors report a case of a 43-year-old man who complained of right-sided chest pain. Chest CT scan revealed a large solid mass in the apical segment of the right lower lobe and a homolateral hilar adenopatic conglomerate, later confirmed by PET-CT scan that also showed a single hepatic metastasis. The diagnosis was made by biopsy of the endobronchial lesion with rigid bronchoscopy and confirmed by immunohistochemistry and detection of translocation t(X; 18) - SYT disruption by FISH analysis. Later on, a bone metastasis (rib) and a meningeal one, were detected. Due to the advanced stage of the disease associated with a low performance status, the patient was only submitted to palliative radiotherapy targeting the lung mass and died eight months after the initial complaints.

Key words: *Soft tissue neoplasms. Synovial sarcoma. Lung neoplasms. Bronchoscopy. Immunohistochemistry. Fluorescent in situ hybridization.*

P121. MENINGEAL CARCINOMATOSIS AS THE INITIAL MANIFESTATION OF LUNG ADENOCARCINOMA

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Introduction: The meningeal carcinomatosis (MC) is an uncommon entity characterized by neoplastic infiltration of leptomeninges and subarachnoid space, appearing, rarely as presentation of neoplastic disease.
Case report: Woman, 71 years, nonsmoker and without relevant medical history. She presented with decreased visual acuity, hearing loss and ataxia, with approximately two months of evolution, reason why she is hospitalized. The physical examination showed pain and neck stiffness, bilateral amaurosis, marked hypoacusis, postural instability and wide-based gait. The study with computed tomography (CT) and brain magnetic resonance imaging (MRI) was innocent. Lumbar puncture was performed and cerebrospinal fluid (CSF) analysis showed monocytic pleocytosis, normal glucose and protein values and pathological analysis revealed TTF-1 positive neoplastic cells. Tumor markers, immunological study and serology were irrelevant. The chest CT showed a mass on the right lower lobe, with 3 cm and lobulated contour. Transthoracic biopsy showed the presence of acinar adenocarcinoma with immunohistochemical analysis consistent with a primary lung tumor. During the study, systemic corticosteroid therapy was initiated with improvement of neck stiffness and hypoacusis. Cranial radiotherapy (RT) was scheduled and later suspended for clinical worsening, with instability of wakefulness and infectious complications. The patient died after 41 days of hospitalization as a result of aspiration pneumonia.
Discussion: Being a rare disease, meningeal carcinomatosis occurs mainly in hematologic tumors, breast cancer, lung cancer and melanoma. Clinical manifestations vary according to the degree of in-

volvement of the central and peripheral nervous system. The diagnosis is defined with the identification of neoplastic cells in the CSF, with neuro-imaging exams being a complementary tool in diagnosis, particularly MRI which reveals changes in 70% of patients. The associated prognosis is poor, with mean survival rate of 3-6 months, being the treatment goals the stabilization or improvement of neurologic symptoms and to extend survival. The decision to initiate radiotherapy or chemotherapy, systemic or intrathecal should be based on the general condition of the patient and control of the primary tumor, and given the rarity of this entity there is no formal recommendation of the ideal therapeutic approach. The case described is a rare and particular case of meningeal carcinomatosis, for being the initial manifestation of lung cancer, by the marked involvement of the optic and vestibulocochlear nerves, and the absence of imaging changes in the nervous system, illustrating the difficulty in diagnostic and therapeutic approach of these entities. In conclusion, the MC is rarely the initial manifestation of disseminated cancer and its clinical manifestations are highly variable which makes the difficult diagnostic approach. An early diagnosis is essential since the prognosis is poor and treatment responses are limited.

***Key words**: Lung cancer. Meningeal carcinomatosis. Clinical diagnosis. Clinical presentation.*

P122. PARANEOPLASTIC SCLERODERMA AS THE INITIAL MANIFESTATION OF LUNG ADENOCARCINOMA

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Introduction: Occasionally rheumatic diseases may precede the clinical manifestations of several hematological and solid tumors appearing as paraneoplastic syndromes. The polymyositis/dermatomyositis, seronegative rheumatoid arthritis and some atypical vasculitis are the most frequently observed paraneoplastic rheumatic disorders. Rarely, paraneoplastic scleroderma is diagnosed.
Case report: Man, 81 years, nonsmoker, with a history of hypertension and chronic myeloid leukemia diagnosed in 2006 with complete remission. He presented with rapidly progressive skin sclerosis of the hands and, associately, pain and joint stiffness, with approximately three months of evolution. The physical examination revealed skin thickening of the hands, sclerodactyly, discrete depigmented lesions in the anterior chest wall and microstomy. The immunologic study was negative. Chest computed tomography (CT) revealed a spiculated nodular lesion with 27 mm on the right lower lobe (RLL), suspicious of malignancy, and two densifications, one with 8 mm in LID and another with 9 mm in the left lower lobe, suggestive of secondary lesions. A transthoracic biopsy of the LID mass identified adenocarcinoma cells with lepidic pattern and the immunohistochemical analysis was consistent with a primary lung tumor. A stage IV lung adenocarcinoma was diagnosed and palliative chemotherapy was started with improvement of skin changes.
Discussion: Paraneoplastic scleroderma is rarely diagnosed. The clinical manifestations may coincide with the diagnosis of the primary tumor or start during the follow-up. More rarely, they may precede the diagnosis in two years. The distinction between idiopathic and paraneoplastic form is difficult being important the identification of atypical clinical manifestations suspicious of paraneoplastic etiology such as presence of sclerodactyly, age at onset over 50 years and rapidly progressive skin sclerosis. In this case, the patient had all the characteristics described earlier, which raised the suspicion of possible paraneoplastic syndrome. The lung cancer is one type of tumor associated with paraneoplastic scleroderma, together with breast, colon and ovarian cancer and non-Hodgkin lymphoma. Most cases of paraneoplastic scleroderma have negative immunologic study, as described in this case. The development of paraneoplastic syndromes is related with tumor activity so that the removal or control of cancer leads to a decrease or resolution of clinical manifestations, such as in the case described where there was an improvement of skin changes after chemotherapy was started. The case described represents a rare case of paraneoplastic scleroderma for being the initial manifestation of lung cancer. In conclusion, scleroderma is rarely the initial manifestation of disseminated cancer. The presence of atypical clinical manifestations allows suspecting of paraneoplastic etiology and guiding diagnose. Treatment is directed at the tumor with improvement of clinical manifestations with cancer control.

***Key words**: Paraneoplastic scleroderma. Atypical clinical manifestations. Lung adenocarcinoma.*

P123. GASTROINTESTINAL FISTULA AS FIRST PRESENTATION OF LUNG CANCER

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Introduction: Lung cancer is the major cause of cancer-related death worldwide. Most patients are diagnosed at advanced stages and more than half are inoperable due to metastasis. Gastrointestinal (GI) metastasis is rarely reported, ranging from 0.2% to 1.7%. However, autopsy reports state that the prevalence of GI metastasis in lung cancer patients can be up to 14%.
Case report: We report a case of a 43 years-old male, former smoker (30 UMA) admitted to hospital with profuse diarrhea, vomiting and weigh loss (> 10% of body weight). Total colonoscopy showed an extensive ulcerated lesion in the transverse colon. Biopsy was suspicious of an undifferentiated carcinoma with probable metastatic origin. Upper GI endoscopy showed no relevant changes. Abdominal ultrasonography visualized a high debit fistula from the distal duodenum to the transverse colon. A thoraco-abdominal CT scan revealed a 2 cm lung nodule on the right upper lobe (RUL) and a likely jejunum tumor with invasion and fistulation to the splenic angle of the transverse colon. A PET-CT showed only a hypermetabolic lesion at the level of the RUL of the lung (SUV 8.9). Bronchoscopy with bronchial brushing and washing was inconclusive. He was submitted to distal duodenectomy, proximal jejunectomy and left hemicolectomy. Histology was compatible with metastatic carcinoma (of probable pulmonary origin). Four months after the patient´s abdominal surgery he was submitted to a right upper lobectomy and lymphadenectomy. The definitive histology was adenoesquamous carcinoma of the lung (T2aN0M1b – Stage IV). Five months after lung surgery, he complained of dizziness and vomiting. A CE-MRI showed a metastasis in the cerebellum and he was submitted to metastasectomy and holocranial radiotherapy. Three months after this last surgery he complained of pain in both knees. Bone scintigraphy showed bilateral distal femoral metastasis. Currently he is under systemic chemotherapy 31 months after diagnosis.
Discussion: GI metastasis as initial presentation of lung cancer, are rarely reported. Surgical treatment is commonly required when these metastasis lead to perforation, obstruction and hemorrhage. Although the prognosis is considered to be poor, in selected patients relatively long-term survival can be expected through aggressive surgical treatment of both primary and metastatic tumors.

***Key words**: Lung cancer. Gastrointestinal metastasis.*

P124. THYPICAL CARCINOID TUMORS – ARE THEY ALWAYS INDOLENT?

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Introduction: Primary bronchopulmonary carcinoid tumors (BP-CT) constitute 0.4% to 3% of resected lung cancers and about 25% of all carcinoids tumors. They are classified by pathology as typical (TC) or atypical carcinoid tumors (Ac) with different prognosis. Both are considered to be malignant, because despite an indolent behavior, they can invade and metastasize.
Case report: We report a case of a 76 years old woman, non-smoker, referenced due to increasing ground glass opacity (GGO) in the right lung. Thoracic-TC showed a GGO of 1.7 cm in the posterior segment of the right upper lobe and a 7mm lesion in the upper segment and a diffuse pattern of opacities. Only the lesion of the posterior segment was hypermetabolic in PET-CT scan (SUV 3.5). Bronchoscopy and transbronchial pulmonary biopsy were inconclusive. After a positive intraoperative pathologic examination of the lesion (compatible with adenocarcinoma) she was submitted to a right upper lobectomy and lymphadenectomy. The definitive pathologic exam confirmed lung adenocarcinoma (TaN0Mx) and identified the infracentimetric nodule as a TC tumor with metastasis in the 4R and 11R lymph nodes (T1aN2Mx). The patient was submitted to systemic chemotherapy. Fourteen months after surgery the patient is under surveillance without signs of recurrence.
Discussion: Although TC tumors are considered to be indolent they can metastasize to mediastinal lymph nodes. Still, these patients have an excellent prognosis when they are submitted to surgery. Much has to be done in order to correctly distinguish different histological subtypes of CT with different clinical behaviors.

Key words: *Lung cancer. Carcinoid tumor. Metastasis.*

P125. A RARE TUMOR: PRIMARY PULMONARY SYNOVIAL SARCOMA

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Introduction: Primary pulmonary synovial sarcoma is a rare tumour, which accounts for less than 0.5% of lung neoplasms. The symptoms are nonspecific and they include cough, chest pain, shortness of breath and hemoptysis. Most of these tumours present as a well-circumscribed parenchymal mass usually with ipsilateral pleural effusion. Primary pulmonary synovial sarcoma is characterized by chromosomal translocation resulting in the expression of a SYT-SSX chimeric transcript, usually SYT-SSX1 or SYT-SSX2.
Case report: Sixty-nine-year-old man, smoker (100 pack-years) and rural worker, presented dyspnea during last month. Chest CT showed upper right lobe atelectasis and ipsilateral pleural effusion. The bronchoscopy documented total occlusion of upper right lobe and lumen reduction of main bronchial by a mass. Rigid bronchoscopy and endoscopic therapy were performed. The morphological and immunohistochemical study was compatible with poorly differentiated monophasic synovial sarcoma. The PET-CT showed right upper lobe and middle lobe atelectasis, right lower lobe partial atelectasis and high metabolic activity lesion (6.8 × 5.2 cm) inside atelectasis (SUV19). Chemotherapy was proposed.
Discussion: We report a case of a rare lung cancer, primary pulmonary synovial sarcoma. Sometimes, the diagnosis of this neoplasm is a challenge. The morphological examination is frequently complemented with immunohistochemical and, more recently, with cytogenetic study. Complete surgical excision is the mainstay of the treatment, although chemotherapy and radiotherapy are other options. Prognosis of pulmonary synovial sarcoma is poor with an overall 5-year survival rate of 50%.

Key words: *Lung cancer. Pulmonary synovial sarcoma.*

P126. A RARE CASE OF PULMONARY METASTASIS

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Introduction: Solitary pulmonary nodules (SPN) are a diagnostic challenge, being of utmost importance to exclude malignancy. Most SPN are benign, nevertheless about 25% correspond to metastasis when there is a history of extrathoracic cancer. The most frequent origins are melanoma, sarcoma, and carcinoma of the colon, breast, kidney and testis.
Case report: The authors present the case of a 75 years old non-smoker woman, with a history of arterial hypertension, pulmonary tuberculosis in adolescence and right breast cancer 22 years earlier who underwent modified radical mastectomy without adjuvant therapy. The patient was sent to pulmonology consultation in the context of recurrent respiratory infections and a visible nodule in the right middle lobe on chest X-ray. Subsequent investigation demonstrated, on chest-CT, the presence of a spiculated SPN in the right middle lobe with 15mm (presenting heterogeneous contrast enhancement) and a solid left paracardiac formation in the anterior mediastinum. Bronchoscopy did not reveal any abnormality and the pathological results were negative for malignancy. For functional characterization, PET-CT was performed and documented an abnormal uptake of the SPN with SUV = 6.9 and an uptake in anterior mediastinum of SUV = 2.3. No evidence was found of abnormal uptake in mediastinum ganglia. The patient was sent to the thoracic surgery department of the Santa Marta's hospital and was submitted to thymectomy and right middle lobectomy. The histological examination of the pulmonary lesion revealed metastasis of breast adenocarcinoma with positive estrogenic receptors. It was also ranked thymoma type AB totally excised. The patient was referred to medical oncology consultation and is currently on hormone therapy.
Discussion: Isolated lung metastases occur in 10 to 25% of breast cancers. Usual follow-up of this neoplasm comprises a period which can be variable between 5-15 years. This case comes to rethinking the biology of tumors with secondary deposits presenting decades after the removal of the primary tumor as well as the long-term approach that is necessary to provide to cancer patients.

Key words: *Cancer. Breast. Solitary pulmonary nodule.*

P127. ENDOBRONCHIAL LIPOMA

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Introduction: Benign tumors represent 2-5% of lung tumor pathology. Endobronchial lipoma is an extremely rare benign tumor, accounting for only 0.1-0.5% of all lung tumors.
Case report: A 59-year-old man, woodcutter, non-smoker and without daily medication or relevant medical history. Initially admitted to the hospital with traumatic spinal cord injury at cervical level (C4-C5) and consequent tetraplegia. The patient had no indication for surgery, so he started physiatric treatment in 9thday after admission. Concurrently, in the context of neurogenic bladder and prolonged catheterization, he developed repeated urinary tract infections (UTI) associated with pyuria and were treated with several antibiotics with progressively broader spectrum. Despite the apparent clinical and analytic resolution of the UTI, the patient developed a febrile syndrome with mild productive cough, dyspnoea and increased inflammatory parameters. Chest radiography (CR) was performed, which revealed a left perihilar opacity, and after a CT scan of the chest, which showed a nodular densification

with 4.5 cm of larger diameter in the upper left lobe (ULL), without obvious air bronchogram and some nodes (< 1 cm) in pre-vascular space. Fiberoptic bronchoscopy was performed which revealed mucopurulent secretions mainly from ULL and a endobronchial tumor, lobed, with smooth and regular surface and soft consistency, causing almost complete obstruction of the anterior segment of the ULL; The biopsy completely resected the endobronchial component of the lesion and, simultaneously, a intrabronchial component, characterized by a yellowish soft, lobed and large material, leaving the segment completely patent and practically without bleeding. The microbiological analysis of the bronchoalveolar lavage was negative and the cytology showed inflammation. A biopsy of the tumor revealed an endobronchial lipoma. The imaging revaluation with new CR showed total resolution of the opacity in the ULL, corresponding to the condensation/atelectasis area distal to bronchial obstruction.
Discussion: The authors present an extremely rare case of endobronchial lipoma, which despite its benign character, may lead to endobronchial obstruction and consequent lesion of the pulmonary parenchyma.

***Key words**: Endobronchial lipoma. Benign lung tumor.*

P128. ADENOCARCINOMA OF THE LUNG – WHEN THE CLINIC SPEAKS LOUDER

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Case report: The authors present the case of a 58 year old woman, retired public employee, non-smoker, with history of right hemithiroidectomy, isthmectomy and left subtotal hemithyroidectomy (in 1986) for papillary thyroid carcinoma and hysterectomy with anexectomy. In 2003, to perform an arthroscopy to the right knee, a chest X-ray was requested showing a nodular image in the right lung apex. The thoracic computed tomography (CT) revealed a 1.5 cm nodule and in the positron emission tomography (PET CT) the nodule had a maximum standardized uptake value of 1.39. The patient refused the proposed lobectomy, remaining on surveillance. In January 2010, due to an increase of the nodule size, she underwent a right superior lobectomy with bronchoplasty and mediastinal lymph node dissection. The anatomical pathology exam revealed "follicular thyroid carcinoma metastasis (CK7(+), TTF1(+), TS(+)), with margins with evidence of tumour and positive hilar and subcarinal lymph nodes". The patient was referred to an Endocrine Oncology appointment, undergoing treatment with radioactive iodine and surveillance. In are-evaluation CT (November 24th, 2011), the exam revealed pulmonary micronodules, right paratracheal, precarinal and subcarinal lymph nodes. The bronchoscopy performed (November 25th, 2011) showed "a carinal mucosal infiltration extending towards the left main bronchus". Bronchial biopsy revealed "bronchial mucosal infiltration by adenocarcinoma TTF1(+) and thyroglobuline (-)", so as the lymph node fine needle aspiration. Given the initial oncological context, a secondary thyroid carcinoma origin was considered. In February 2013, the patient began complaining of cephalalgia and right hemibody paresthesia. Brain magnetic resonance imaging (MRI) revealed left frontoparietal subcortical lesion and aspects compatible with a leptomeningeal dissemination. Cerebrospinal fluid (CSF) was positive for neoplasm cells, carcinoma NOS. Reviewing the biopsy material and considering the dominant acinar pattern of the tumour, as well as the immunohistochemical results (CK7(+), TTF 1(+), thyroglobulin (-)), a second primary lung tumour diagnosis accepted. The genetic study showed epidermal growth factor receptor (EGFR) exon 18 mutation. The patient underwent holocranial radiotherapy followed by erlotinib (May 20th, 2013), that remains to the present-day, with improvement in the neurological symptoms, partial thoracic response as well improvement of the cranial lesion.
Discussion: The authors discuss the clinical behaviour, the histopathological and the immunohistochemistry results and the EGFR mutations in this case, considering the precision of the differential diagnosis.

***Key words**: Adenocarcinoma. Lung. TTF1.*

P129. RARE METASTASES FROM LUNG CANCER: 4 CLINICAL CASES

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Introduction: Lung cancer (LC) is the most common cause of cancer death. About 50% of LC patients present distant metastasis at diagnosis.
Case reports: Case 1: a 59-year-old longshoreman and smoker man presented with chest pain, asthenia and weight loss. A chest X-ray was performed and showed a nodular image in the left upper lobe (LUL). Computed tomography (CT) showed lesions in the LUL and 2 nonspecific nodular lesions in the left kidney. A positron emission tomography (PET) scan revealed masses in the left lung and left kidney. A transthoracic needle biopsy (TNB) and renal biopsy were performed and a lung adenocarcinoma with renal metastases was diagnosed. He complained of headaches, visual changes, and vomiting and a magnetic resonance was requested and revealed pituitary gland lesion suspicious of adenoma. He underwent mass resection and the pathology specimen demonstrated lung metastasis. First line chemotherapy was started. Case 2: a 63-year-old retired fisherman and ex-smoker presented with constipation and rectorrhagias. Colonoscopy revealed a sigmoid mass and a biopsy was performed. The pathology specimen was consistent with extrinsic invasion by primary lung cancer. Chest CT showed two lesions in the right lower lobe. TNB was performed and pathology demonstrated squamous cell carcinoma of the lung. He started 1 line chemotherapy with disease progression (pericolic metastatic mass growth). Started 2 line chemotherapy, but he died during the 1st cycle. Case 3: a 54-year-old carpenter and ex-smoker man presented with chest pain and weight loss. TC (chest and abdominal) showed one lesion in LUL, 2 in spleen and one in left adrenal gland. Bronchofibroscopy (BFC) with transbronchial biopsy was performed and the pathology specimen was consistent with lung adenocarcinoma. PET showed caption lesions at the LUL, spleen and left adrenal gland. 1line chemotherapy was started with progression of disease (adrenal and splenic mass growth) after 2 cycles. Case 4: a 51-year-old gas station worker and ex-smoker man complained of cough and dyspnoea progressively worsening. Chest CT showed masses in the left lower lobe (LLL) and middle lobe. BFC was performed with no relevant results. He then underwent resection of the LLL nodule with pathology consistent with lung adenocarcinoma.1line chemotherapy was started. He developed acute cholecystitis and underwent cholecystectomy. Gallbladder histological analysis revealed metastasis from lung adenocarcinoma. He was treated with 2 line chemotherapy with progressive disease and later 3line chemotherapy was started with partial remission.
Discussion: The brain, liver, adrenal glands, and bone are the most likely sites of metastatic disease in patients with LC. Renal metastasis from lung cancer can affect up to 19% of the patients, usually being bilateral. The literature describes only a few cases of metastasis in the seal area, often diagnosed accidentally during autopsy. Colonic metastases are uncommon and exceptionally symptomatic. The prevalence of spleen metastasis varies between 2.3-7.1%. Usually they are diagnosed during autopsy and they are associated with other intra-abdominal metastasis. There are few cases of me-

tastasis in the gallbladder in literature and presenting by acute cholecystitis.

Key words: *Renal metastasis. Pituitary metastasis. Pericolic metastasis. Spleen metastasis. Gallbladder metastasis. Primary lung cancer.*

P130. STENT PLACEMENT IN SUPERIOR VENA CAVA SYNDROME – 5 YEAR EXPERIENCE IN GARCIA DE ORTA HOSPITAL

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The superior vena cava syndrome (SVCS) is a complication of lung cancer which means advanced disease and, therefore, significant morbidity and mortality. In these cases therapeutics is usually palliative and stenting the stenotic portions of SVC may be used to symptom relief. The aim of this study was to characterize hospitalized patients who underwent bronchial arteriography for SVCS at Garcia de Orta Hospital in the last 5 years. We studied 16 patients - 81.3% male, mean age 58.5 yrs, mean length of hospitalization 21.3 days (one patient was admitted to perform stent placement electively while the others were admitted through the Emergency Department). The most common histology was small cell carcinoma (56.2%), followed by adenocarcinoma and undifferentiated small cell carcinoma (18.8%) and the squamous cell carcinoma (12.5%). Only 1 patient (6.25%) presented in stage IIIa - the remaining presented in stage IV. Complications did not occur. One patient (6.25%) underwent through the procedure twice. The most common presentations of the disease were cervical edema (58.8%), facial edema (35.3%) and a collateral superficial venous circulation (29.4%, which was associated with 80% of monthly mortality rate). The Horner syndrome was the presentation in 2 patients (11.8%), with a 100% mortality rate at one month. Small cells carcinoma was the histology in 75% of the patients who did not survive longer than one month. Three patients underwent through the procedure in the absence of clinical manifestations of SVCS (radiological evidence of the disease), with one year survival rate of 66.6%. The overall survival rates are 73.3% at one month and 21.4% at one year. Despite the small sample the factors associated with poor prognosis (higher mortality rate at one month) are Horner syndrome, superficial collateral circulation and small cell carcinoma. The radiological evidence of SVC compression in the absence of symptoms is associated with better prognosis, with a higher survival rate at one year.

Key words: *Superior vena cava syndrome. Therapeutic bronchoarteriography. Small cell lung carcinoma. Horner syndrome.*

P131. MALNUTRITION RISK IN A RESPIRATORY MEDICINE WARD

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Introduction: Malnutrition is one of the most prevalent diseases in hospitalized patients. It appears that 20% to 60% of patients admitted to the hospital are undernourished or at malnutrition risk. Despite being a underrated and under diagnosed condition, it has a negative impact on prognosis and its morbidity and mortality are considerable.

Objective: The aims of this work were to determine the prevalence of malnutrition risk in patients hospitalized in the Respiratory Medicine ward of a secondary university hospital, to analyze its impact on hospitalization and to identify risk factors for its development.

Methods: through a convenience sample of patients admitted to the Respiratory Medicine ward during 4 months, a nutrition screening protocol, *Nutritional Risk Screening 2002 (NRS 2002)* was applied; patients considered to be at nutritional risk were referred to specialized dietetic and nutritional evaluation and support.

Results: with a sample of 67 patients (60% males, mean age 66 years old), 34 (51%) had an initial positive screening, mostly because of reduced dietary intake in the previous week. After specialized referral, 17 patients (25%) were considered to be at nutritional risk, with a mean score of 3.5 in *NRS 2002*. These patients were subjected to nutritional support, with adequate food intake plan and oral supplementation. None of these patients needed parenteral or enteric nutrition. Patients had a similar sociodemographic profile, however, those at nutritional risk had a higher prevalence of anemia, neoplasia and chronic obstructive pulmonary disease. Mean length of stay was also higher in patients at nutritional risk in respect to those not at risk. Predictive factors for the development of malnutrition were also analyzed.

Conclusions: Malnutrition and nutritional risk are common among patients hospitalized in Respiratory medicine wards and associated with poor outcomes; despite its magnitude, it is often underrated. Nutritional screening, with standard protocols, and specialist referral are, thus, essential approaches in order to improve nutritional care during hospitalization.

Key words: *Malnutrition. Risk. Hospitalization. Respiratory medicine.*

P132. THERAPEUTIC STRATEGY FOR NON-SMALL-CELL LUNG CANCER IN CLINICAL PRACTICE

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Introduction: A significant number of lung cancer patients have been diagnosed and treated at Centro Hospitalar de São João (CHSJ). It is important to understand the therapeutic choices made in clinical practice.

Objective: To describe the initial therapeutic options for patients with non-small-cell lung cancer (NSCLC) in CHSJ diagnosed between January 2012 and December 2013.

Methods: Retrospective analysis of NSCLC patients evaluated in CHSJ between January 2012 and December 2013. The initial therapeutic choice was analyzed (surgery/radiotherapy/chemotherapy isolated or combined treatment).

Results: Two hundred and eight patients, 164 (78.8%) males, with a mean age of 69.0 ± 9.7 years were analyzed. The performance status (PS) was evaluated in 206 patients, 28 (13.4%) had significant general condition compromise: 17 cases (8.2%) with PS 2 and 11 (5.3%) with PS 3 and 4. The main histological types were adenocarcinoma (n = 127, 61.1%) and squamous cell carcinoma (n = 60, 28.8%). Eighty one patients (38.9%) were diagnosed in an early stage of the disease (IA - 32 IB - 15, IIA - 8, IIB - 3, IIIA - 23). In these 81 patients, the first treatment choice was surgery alone in 29 cases (35.8%) or combined treatment in 28 (34.6%). The majority of patients were diagnosed in an advanced stage, 127 (61.1%) patients: 27 (13.0%) in stage IIIB and 100 (48.1%) in stage IV. In advanced cancers, chemotherapy (n = 87, 68.5%), combined treatment (n = 18, 14.2%) and best supportive care (n = 18, 14.2%) were the main therapeutic strategies adopted as the first option. During

the follow-up of advanced cancers: 45 patients received second line chemotherapy and 12 received third line chemotherapy.
Conclusions: The therapeutic strategy is according to the staging of the cancer, as well as the performance status of the patient. The majority of patients have been diagnosed in advanced stages, however this was not reflected, for most of them, in PS.

***Key words**: Therapy. Non-small-cell lung cancer.*

P133. MORTALITY IN HOSPITALIZED LUNG CANCER PATIENTS: EXPERIENCE IN A PULMONOLOGY DEPARTMENT

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Introduction: Lung cancer (LC) is the leading cause of cancer-related death worldwide. The cure rate is < 15% despite treatment improvement. Many patients have to be hospitalized throughout their illness.
Objective: To determine the mortality in hospitalized patients with lung cancer, the leading causes of death and associated prognostic factors.
Methods: Retrospective study of all LC patients admitted (including admissions where the diagnosis was made) in a period of 18 months. Admissions of patients with suspected cancer that died without confirmation, admission of patients who refused etiological study and of patients who continued study in another hospital were excluded.
Results: There were 182 admissions related to 135 patients. The median age was 65 (± 10) years with predominance of male gender (84.1%). The length of hospitalization was 15 days (± 13) and the 3 main reasons for admission were respiratory infection (31.3%), respiratory failure (18.7%) and pleural effusion (12.1%). Regarding histological type, adenocarcinoma was the most common (56.6%), followed by squamous cell carcinoma (SCC) (23.6%) and small cell lung carcinoma (SCLC) (17%). The predominant stage at admission was IV in 74.2% of cases and IIIB in 18,7% of cases. Chemotherapy treatment at time of hospitalization was present in 17.6% of cases and radiotherapy in 1.6%. Comorbidities analyzed were COPD, diabetes and heart disease, present in, respectively, 19.2%, 17.6% and 22% of cases. In 42.9% of cases there were one or more previous hospitalizations and after the diagnosis of LC. Of the 135 patients included, the in-hospital mortality was 27,5% (n= 50). Seventy eight patients died after discharge and 7 are still alive. As leading causes of death (alone or simultaneously) stand out respiratory infection, intrathoracic disease progression, extrathoracic disease progression and paraneoplastic syndrome in respectively 31, 13, 15 and 8 cases. When we compare the characteristics of the patients deceased during hospitalization with non-deceased, we found that::
Conclusions: Despite the high mortality rate during hospitalization, a greater number of patients eventually die outside the hospital. A higher rate of mortality appears to be associated with male sex, a longer hospitalization time and a more advanced stage of disease. There are few studies about the rate of mortality in hospitalized patients with LC and associated prognostic factors. Further studies are needed to make easier the clinical orientation of these type of patients.

***Key words**: Lung cancer. Hospitalization. Mortality.*

P134. MESENCHIMAL CELLS MAY OVERWHELM INFLAMMATION IN CARCINOGENESIS OF BRONCHIAL – PULMONARY CARCINOMA – MORPHOLOGICAL SUPPORT

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Attention has been focused on chronic degenerative diseases involving bronchial epithelium and pulmonary parenchyma to prevent bronchial – pulmonary carcinoma development. The main morphological patterns explored till now to support carcinogenesis spectrum relate with smoking pulmonary diseases, IPF and hypersensitivity pneumonias (HP). The known actual recognized morphological patterns of those diseases concern RB – ILD/DIP/clinically occult interstitial fibrosis in smokers (Anna-Luise Katzenstein 2010) in smokers, heterogeneous fibrosis/lobular remodelling in UIP/IPF and UIP – like patterns in HP respectively, without relevance to PMN/macrophages. In the three identified diseases, epithelial basal cells and *lamina propria* mesenchimal cells have progressively been related with carcinogenesis, mainly acting in epithelial – mesenchimal transition to understand pleomorphic/sarcomatoid and multidirectional carcinomas. Greater relevance might be pointed

Table - P133

	Deceased	Non-deceased	
Age (years)	64 (± 9)	65 (± 10)	p < 0.05
Gender	98% male (n = 49)	93.7% male (n = 104)	p < 0.05
Length of stay (days)	12 (± 10)	16 (± 14)	
Mean cause of admission	Respiratory infection (n = 21)	Respiratory infection (n = 60)	
Histological type	Adenocarcinoma (n = 25; 50%), SCC 28% (n = 14) e SCLC 16% (n = 8)	Adenocarcinoma (n = 78; 70.3%), SCC 26.1% (n = 29) e SCLC 20.7% (n = 23)	
Staging	IV 88%	IV 82%	p < 0.05
Chemotherapy/Radiotherapy	9 patients/1 patient	23 patients/2 patients	
Comorbidities	COPD 16%; diabetes 14%; heart disease 16%	DPOC 24,3%; diabetes 22.5%; heart disease 28.8%	
Previous hospitalizations	27 patients (51%)	51 patients (45.9%)	
Nosocomial respiratory infection	7 patients (14%)	12 patients (10.8%)	

to vimentine, p63, CK18, HHF35 and CD10 in classifying EMT bronchial – pulmonary carcinomas while smokers pulmonary diseases, UIP/IPF and HP run with orchestration of PMN, eosinophils, mast cells, macrophages and lymphocytes till extra-cellular matrix collagen synthesis stands as the final actor in bronchial – pulmonary parenchyma surrounding respective neoplasms, where molecular studies are needed to map the real carcinogenic spectrum.

Key words: *Mesenchial cells. Carcinogenesis. Bronchial-pulmonary carcinoma.*

P135. EMT EXPLORED IN BRONCHIAL CELL LINES AFTER CR(VI) STIMULATION AND IMMUNOCYTOCHEMICAL VALIDATION

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Carcinogenesis related with clone cell theory either in mature genetically altered cells and after epithelial – mesenchimal transition stimulation has been supported by morphological, immunocytochemical and molecular studies. Cell lines may help to stratify levels of carcinogenesis in particular subsets of neoplasms. Bronchial mesenchimal E2A cell line and bronchial epithelial BEAS – 2A cell line were separately stimulated with Cr(VI) at 0.25 μM and 0.5 μM concentrations and joined at particular standardized conditions to verify cellular adaptation, followed by immunocytochemical characterization. Stimulation of E2A cell line with Cr(VI) induced overexpression of vimentine and maintenance of α-sma expression and these stimulated mesenchimal cells induced vimentin and LP34 (high weight molecular keratin present in epithelial basal cells) expression in BEAS – 2B cell line. Under higher Cr(VI) stimulation, epithelial cells acquired also fusiform shape. This study emphasizes the EMT crosstalking between mesenchimal and epithelial cells to understand that contractile function (α-sma) is relevant and overtaken by vimentine after carcinogenic stimulation inducing epithelial adaptation to basal cell and mesenchimal characteristics, in the absence of inflammation.

Key words: *EMT. Cr(VI). Cell lines.*

P136. FGFR1 OVEREXPRESSION WAS VALIDATED IN ALL HISTOLOGICAL TYPES OF BRONCHIAL-PULMONARY CARCINOMAS

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FGFR1 is a tyrosine kinase receptor whose ligands belong to the fibroblast growth factor family. It became a therapeutic target in pulmonary carcinomas. The molecular pathways are complex with potential oncogenic and anti-oncogenic activities still completely unknown. To evaluate the significance of FGFR1 expression in bronchial-pulmonary carcinomas (BPC), ThermoFisher-CD331/FGFR1 clone was applied to a series of tumours selected according with immunohistochemical (IHC) profile. From formalin fixed paraffin embedded 75 cases of BPC corresponding to TTF1-/TTF1+ adenocarcinomas, CK7+/CK7- epidermoid carcinomas, 8 adenosquamous carcinomas and 10 pleomorphic carcinomas at least two sections were studied. FGFR1 expression was scored semi-quantitatively by a fourtier approach (0, 1, 2, 3). In general, the IHC scores were similar for adenocarcinoma (ADC) and squamous cell carcinomas (SCC), without correlation with immunohistochemical profile. High expression of FGFR1 (scores 2+3+) was observed in all histological types; 4 cases present score 1+ corresponding to 1 ADC; 5 SSC, and 1 adenosquamous carcinoma. Our results showed an overexpression of FGFR1 in bronchial-pulmonary carcinoma. It has been said that early overexpression of FGFR markers in BPC suggests activation of the *bFGF* pathway, and it is thought it facilitates the development of resistance to anti-angiogenic therapy targeting the *VEGF* pathway. While FISH stands as the gold method to evaluate *FGFR* amplification for target therapy, our data may help to define criteria for selecting patients that may benefit from anti-angiogenic therapy.

Key words: *FGFR1. Histological types. Bronchial-pulmonary carcinomas.*

P137. IMMUNOHISTOCHEMICAL (IHC) DETECTION OF ACTIVATING EGFR MUTATIONS IN SMALL SAMPLES

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Somatic mutations within the tyrosine kinase (TK) domain of the epidermal growth factor (EGFR) can predict response to EGFR TK inhibitors (TKIs) in non-small cell lung cancer patients. Among all mutations, 85-90% are exon 19 E746_A750 deletion or exon 21 L858R and are usually detected by a variety of direct DNA molecular analysis. These methods are complex, expensive and exclusive of some laboratories. Two specific antibodies, respectively, for L858R and E746_A750del are available and can be used for immunohistochemical (IHC) detection. Assays found high specificity but variable sensitivity. We aimed to determine the diagnostic accuracy of IHQ mutation detection in small biopsies with two referred antibodies. We tested a population with known mutational status determined by DNA sequencing. Twenty samples were tested with both antibodies, 9 exon 19, 7 exon 21, 2 exon 18 and 2 with exon 20. Among exon 19 deletion, 5 were considered positive with E746_A750del and 4 negative or inconclusive and one showed positivity for L858R. Among exon 21 mutation, all samples were positive with L858R antibody and none with E746. Exon 18 and 20 were negative with both antibodies. These results suggest that these specific antibodies for IHC analysis can obviate molecular detection, when IHC is positive. For definitive conclusions, a large sample that includes*wild type* samples shall be tested.

Key words: *Lung cancer. EGFR mutation. Immunohistochemistry.*

P138. LUNG CANCER IN WOMEN, EXPERIENCE OF A LOCAL HEALTHCARE UNIT

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ULS Guarda.

Introduction: Lung cancer is the leading cause of death from oncological disease. There are significant gender differences regarding the incidence of various histological subtypes, stage at the diagnosis and survival.
Objective: Characterization of clinical and histopathological variables, anatomical and physiological staging, treatment and survival of female patients with primary lung cancer followed in oncologic medical visit in a Local Healthcare Unit.
Methods: Retrospective study of female patients with a diagnosis of primary lung cancer and followed in oncologic medical visit from

01/01/2012 to 31/05/2014. We analyzed the clinical file, were evaluated clinical variables, histopathological, anatomical and physiological stages, treatment and survival. We defined as exclusion criteria: thoracic cancer not primary lung cancer. The statistical data treatment was performed using Microsoft Excel 2010 software.
Results: During the considered period were followed 97 patients in medical visit, 32 female and 65 male. From the initial sample we excluded 7 patients, being 25 patients the sample in analysis. The average age of patients was 73 years old (44 to 89 years). Only 4 patients reported a history of smoking or passive exposure. The Adenocarcinoma represented the most frequent histological type, being the surgical lung biopsy and CT-guided lung biopsy the main procedures to achieve diagnosis. Most patients were in advanced stage at diagnosis. 8% of patients were submitted to surgical therapy, 48% chemotherapy and/or radiotherapy and 40% to support therapeutic. The average survival was 9 months.
Conclusions: Our study reflects an elder population and less smoking habits than the population of other studies. The patients were in an advanced stage at diagnosis, which combined to advanced age and the higher number of comorbidities justifies the large number of patients submitted only supportive therapy.

Key words: *Lung cancer. Female.*

P139. BRAIN METASTASES AT PRESENTATION OF LUNG CANCER

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Introduction: Brain metastases are occasionally the initial manifestation of lung cancer. Their presence is a factor of poor prognosis. The aim of treatment is to reduce neurological signs and symptoms, improve quality of life and overall survival.
Objective: Characterize patients with lung cancer with brain metastases at diagnosis.
Methods: Retrospective study of patients with lung cancer with brain metastases at diagnosis, during a period of four years (2010-2013). Demographic data, histology, imaging, therapy and overall survival were evaluated.
Results: Included 44 patients, 31 (70.4%) male, mean age 63.7 years, 35 (79.5%) smokers or ex-smokers, 63.6% with a Performance Status of 1. In 45.4% patients neurological symptoms were the initial manifestation of unknown primary lesion. In the remaining 54.6% brain metastases were detected during the initial staging. The most frequent histology was non-small cell lung cancer in 88.6% (adenocarcinoma in 71.8%) and 11.4% with small cell lung cancer. The majority (59.1%) had metastases in other organs, with the most common site being lung (41.9%). Eighteen patients (40.9%) had only one brain lesion, 22.7% had 2 or 3 metastases and 34.1% had 4 or more lesions. Biggest brain lesion had on average 20.7 mm of diameter, with vasogenic edema in 70.5%. Nineteen patients (43.2%) received radiation therapy (RT), 8 surgery combined with RT, 3 surgical resection alone and 2 radiosurgery. The average time between diagnosis and therapeutic approach to metastatic lesions was 38.6 days. Thirty-four patients (77.3%) received 1st line chemotherapy, with a platinum-based duplet in 30, vinorelbine in 3 and pemetrexed in 1 patient. Second line therapy was done in 20 (45.4%) patients, 16 with erlotinib, 2 with docetaxel and 2 with pemetrexed. Six patients (13.6%) received 3rd line therapy (3 erlotinib, 2 vinorelbine and 1 pemetrexed). Three patients (6.8%) started 4th line therapy, 2 with afatinib and 1 with with vinorelbine. Overall survival (OS) was 8.9 months. Patients with a single metastasis had higher OS then those with multiple metastases (10.4 vs 7.6 months). OS of patients who underwent chemotherapy was superior compared to those who did not undergo chemotherapy (10.7 vs 2.8 months, $p < 0.01$). The group of patients who performed surgery combined with radiation therapy showed the greatest OS (15.0 months). There was no difference in OS according to the histologic type of the primary tumor.
Conclusions: Brain metastases were the first manifestation of lung cancer in a high percentage of patients. Overall survival was superior in patients with single brain metastasis, who underwent surgery combined with radiotherapy and with conditions for systemic chemotherapy.

Key words: *Brain metastasis. Lung cancer.*

P140. ADVANCED NON-SMALL CELL LUNG CANCER IN YOUNG PATIENTS

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Introduction: Non-small cell lung cancer (NSCLC) is diagnosed at an advanced stage in 40-50% of patients. The incidence of NSCLC in young patients increases annually. There are few published data on their behavior in this group.
Objective: Characterize NSCLC - advanced disease (AD) in young patients.
Methods: Retrospective study of patients under 50 years old, diagnosed with NSCLC-DA for a 12-year period (2001-2013). Demographic data, histology, Performance Status (PS), therapy and overall survival (OS) were evaluated.
Results: Included 72 patients, 70.8% male, mean age 45.1 years, most of them (70.8%) smokers or former smokers, with Performance Status of 1 in 89.1%. The most frequent histology was adenocarcinoma (61.1%), followed by squamous cell carcinoma (34.7%), large cell carcinoma (2.8%) and NSCLC-NOS (1.4%). Metastasis in 1, 2 or 3 organs were found in 47.2%, 37.5% and 15.3%, respectively. Four patients are still alive (between 10.1 and 63.1 months after initial diagnosis), all with PS 1. Overall survival (OS) was 16.7 months. In the PS 1 group, which included 60 patients, mean age 44.9 years, 34 (56.7%) had two or more sites of metastasis. Of these, 58 (96.6%) underwent 1st line chemotherapy, with a platinum-based doublet in 56 and erlotinib in 2 patients. Two patients died before starting chemotherapy. Second line therapy was done in 25 (41.7%) patients, with pemetrexed (11), erlotinib (8), docetaxel (5) and vinorelbine (1). Nine patients did 3rd line therapy, with erlotinib (6), pemetrexed (1), vinorelbine (1) and carboplatin plus vinorelbine (1). Two patients underwent 4th and 5th line therapy, one of them with pemetrexed followed by vinorelbine and the other with carboplatin + gemcitabine followed by pemetrexed. OS in this group was 15.7 months. Considering the number of therapy lines performed, OS for patients receiving 1, 2 or 3 or more lines was, respectively, 10.2, 21.5 and 26.2 months. In the PS 2 group, which included 8 patients, mean age 46 years, seven patients started 1st line chemotherapy with a platinum-based duplet. One patient died before starting therapy. No one started 2nd line therapy. OS of this group was 4.1 months. In the group with PS 3, including 4 patients, mean age 47 years, no patient started therapy, getting on best supportive care only. OS of this group was 0.7 months.
Conclusions: In our group, most patients had PS 1 with adenocarcinoma being the most common histologic type, which is in agreement with literature data. The overall survival in our group was higher than that described in the literature.

Key words: *Lung cancer. Young patients.*

P141. PULMONARY AND MEDIASTINAL SYNOVIAL SARCOMA – DESCRIPTION OF TWO CLINICAL CASES

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Introduction: Synovial sarcoma accounts for approximately 8% of soft tissue sarcomas. Typically, it has been identified in the extremities, but has also been described in head and neck, heart, lung and mediastinum. Thoracic sarcomas represent 0.01% of all thoracic malignancies, and are often misdiagnosed due to their unusual histologic pattern. Here, we review two incidental cases of primary synovial sarcoma.
Case reports: Case report 1: woman, 65 years old, with a history of breast invasive ductal carcinoma in 1994 underwent mastectomy, radiotherapy and chemotherapy; and hypertension. No smoker. She was referred to Pulmonology Department for complaints of exertional dyspnea started in September 2013, with dry cough and intense chest pain. At admission, she presented in lung auscultation wheezing in left HT and decreased sounds in the left base. CT chest revealed a nodule in the left lower lobe and the bronchofibroscopy left main bronchus occluded by mass of soft consistency which biopsies were inconclusive. The patient underwent rigid bronchoscopy with laser photocoagulation and lesion removal. The bronchial biopsies were compatible with synovial sarcoma. 68Ga-DOTANOC-PET revealed hyperfixation in the superior segment of the left lower lobe, near the hilum. 18q11 translocation was detected. Underwent left lower lobectomy with lymph node dissection and the pathology was consistent with the diagnosis of synovial sarcoma. She was directed to a reference center for sarcomas and was scheduled adjuvant radiotherapy and chemotherapy. Case report 2: woman, 66 years old, with a history of hypertension and dyslipidemia. No smoker. Due to radiological changes, the patient was referred to the Pulmonology Department. At admission, she presented in lung auscultation bilaterally sounds without rales. CT chest revealed a large mass upper-right hilar occupying the transition zone of the mediastinum and bronchoscopy didn't reveal endobronchial lesions. She underwent transthoracic needle aspiration biopsy of the mass, which was consistent with synovial sarcoma. Due to osteoarticular complaints, she made a bone scintigraphy that was compatible with diffuse bone metastasis. 18q11 translocation was positive. She was directed to a reference center for sarcomas, started chemotherapy and later, due to poorly controlled pain, initiated antalgic radiotherapy. She died 8 months after diagnosis.
Discussion: Synovial sarcoma is a highly aggressive malignant neoplasm, whose diagnosis requires clinical, radiological, pathological, and immunohistochemical investigations to exclude alternative primary tumors and metastatic sarcoma. Only a few reported cases are described in the literature so far, and because of the rarity of this tumor in the lung and mediastinum, optimal therapy and prognosis remain unknown. The authors highlight these cases because of its rarity and the difficulties in the diagnosis and treatment, with differences in the evolution and prognosis.

Key words: *Sarcomas. Synovial sarcoma.*

P142. CHARACTERIZATION OF PATIENTS WITH LUNG CANCER IN THE LAST 6 YEARS

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Introduction: Lung cancer is the deadliest cancer worldwide. In Portugal, the disease remains the main cause of cancer death in males. The importance of obtaining knowledge about lung cancer trends and the need to harmonize diagnostic and therapeutic strategies has always been recognized.
Objective: Evaluate the demographic and clinical characteristics of lung cancer patients diagnosed and treated in Centro Hospitalar de São João (CHSJ) between the years 2008-2013.
Methods: Retrospective study based on a systematic review of the cases of lung cancer registered in CHSJ database. Patients diagnosed with lung cancer were included over a period of 6 years (2008-2013) and analyzed their clinical and demographic characteristics: gender, age, smoking habits, performance status (PS), histology and stage (TNM).
Results: In the last 6 years (2008-2013), 810 patients were diagnosed with lung cancer and were referred to the Pulmonology Department of CHSJ, 77.4% (n = 627) were male and 22.6% (n = 183) female, with a median age of 66 years (30-94 years). The majority (75.6% - n = 612) of patients were smokers or ex-smokers, 92% (n = 563) of these patients were male. About non-smoking patients, 75.8% (n = 119) were female. The performance status (PS) was evaluated in 98.4% (n = 797) of patients. A large number of patients, 278 (34.9%) had significant general condition compromise (PS ≥ 2) in the first contact with health care. Cellular type adenocarcinoma became more dominant over the period of study (52.8% - n = 428), followed by squamous cell carcinoma (23.2% - n = 188) and small cells (11.1% - n = 90). A predominance of advanced cancers (IIIB, IV) was observed in 72% (n = 583) of patients. During the study, 51.4% (n = 416) of patients passed away.
Conclusions: A high number of patients with lung cancer is diagnosed and treated in CHSJ. Cellular type adenocarcinoma became predominant over the period of study. Lung cancer diagnosis was significant in females (22.6%), especially in non-smoking patients. The poor prognosis of these patients is due to the fact that the diagnosis is showing up in late stage of the natural history of the disease (stages IIIB and IV) with consequent major impact on PS. Given the presented data and the high mortality rate of lung cancer, it becomes a priority to implement measures leading to reduction of the principal risk factor (smoking habits), as well as preventive strategies that allow early diagnosis and facilitate quick access to health services.

Key words: *Lung cancer.*

P143. PEMETREXED MAINTENANCE THERAPY IN ADVANCED NON-SMALL CELL LUNG CANCER – RETROSPECTIVE COHORT STUDY

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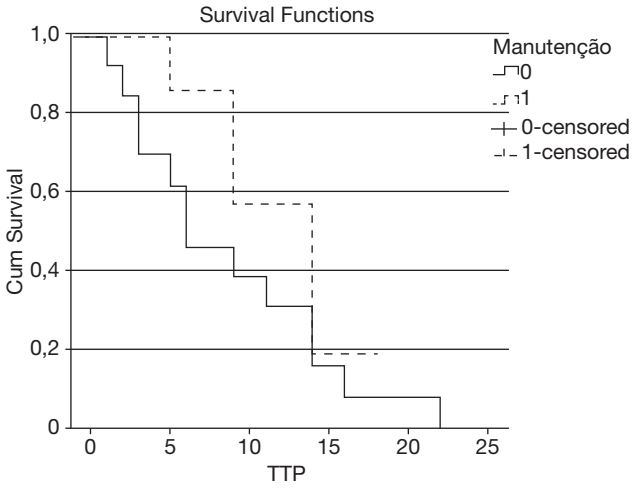
Introduction: Pemetrexed maintenance therapy (PMT) is advocated as a valid option after 4-6 cycles of cysplatin/carboplatin plus pemetrexed first-line chemotherapy with no disease progression. The aim of this study is to analyze the response of a sample of patients who were submitted to maintenance therapy and compare it with an historic sample.
Methods: Sample was obtained from patients treated in our Hospital: seven patients submitted to PMT (consecutive sample) [PMTg] were compared with an historic sample who didn't receive PMT (13 patients) [nPMTg]. All patients were staged as IIIB or IV (TNM classification).Demographic data and median time-to-progressionwere compared. Statistically, central tendency measures were used as well as survival curves (Kaplan-Meier). It was assumed a statistical significance for $p < 0.05$. Statistical software: IBM® SPSS® version 21.



Results: Median age (years): PMTg 61, nPMTg 64 (p = 0.843); female patients were 1 (14.3%) in PMTg and 4 (30.8%) in nPMTg (p = 0.613); TNM staging: 3 (42.9%) patients were IIIB in PMTg and 2 (15.4%) in nPTMg (p = 0.290); mean number of maintenance cycles was 8 (from 2 to 12); median time-to-progression was 14 months in PMTg and 6 months in nPMTg (Log Rank: p = 0.228).
Conclusions: This retrospective study revealed a better time-to-progression (with no statistical significance) in patients who received maintenance therapy, corroborating recent evidence in this area. Perhaps the reduced sample size can explain the non-statistical significance. Nevertheless, at least in our patients, good response is being obtained with maintenance therapy in patients with advanced non-small cell lung cancer.

***Key words**: Cancer. Pemetrexed. Maintenance.*

P144. LUNG CANCER IN YOUNG ADULTS – RETROSPECTIVE ANALYSIS

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Introduction: Lung cancer (LC) is the leading cause of cancer death worldwide, with an overall survival rate at 5 years ranging between 9-16%. Less often occurs in young adults (age under 45 years), with an incidence of approximately 5 to 7%. Studies suggest that the LC in young adults presents more frequently in advanced stages,being more aggressive and with worst prognosis.
Objective: To identify and characterize patients' population with LC aged ≤ 45 years.
Methods: Retrospective study of 1292 patients diagnosed with LC in a central hospital between 01/07/2009 to 30/06/2014. We only analyzed patients followed in pulmonary oncology department, aged ≤ 45 years, and diagnosed with non-small cell lung cancer (NSCLC), small cell lung cancer (SCLC) and large-cell neuroendocrine carcinoma.
Results: We identified 26 patients with LC and age ≤ 45 years (2.0% of total), and 4 was excluded. From 22 studied, 63.6% (n = 14) were male and 36.4% (n = 8) were female, mean age 4.0 ± 40.1 years. As for smoking, 72.7% (n = 16) were smokers, 4.5% (n = 1) ex-smokers and 22.7% (n = 5) non-smokers. The average delay from onset of symptoms to histological/cytological diagnosis was 3.2 ± 3.7 months. It was identified adenocarcinoma in 50.0% (n = 11), squamous cell carcinoma in 22.7% (n = 5), SCLC in 13.6% (n = 3), large-cell carcinoma in 4.5% (n = 1), NSCLC not otherwise specified in 4.5% (n = 1) and large-cell neuroendocrine carcinoma in 4.5% (n = 1). In the initial stage, 4.5% (n = 1) of patients were in IA stage, 9.1% (n = 2) in IB, 4.5% (n = 1) in II-A, 18.2% (n = 4) in III-A, 9.1% (n = 2) in III-B and 54.5% (n = 12) in IV. In the evaluation of performance status (PS) to the presentation, 72.7% (n = 16) of patients had PS 0 and 1, 18.2% (n = 4) PS-2, 9.1% (n = 2) PS-3 and no one in PS-4. Surgical treatment was performed in 9.1% (n = 2) of patients, surgery and chemotherapy in 22.7% (n = 5), only chemotherapy in 22.7% (n = 5), chemotherapy and radiotherapy 45.5% (n = 10). As the evolution to date, 36.8% (n = 8) is alive and 63.6% (n = 14) died, with a mean survival of 13.0 ± 14.1 months.
Conclusions: In this population of patients, mainly smokers, adenocarcinoma was the most frequent histological type, and the diagnosis was made in advanced stages, which may explain the average short survival. The good performance status at diagnosis may be associated with the age of patients.

***Key words**: Lung cancer. Adenocarcinoma. Young adults and advanced stage.*

P145. ERLOTINIB – A RETROSPECTIVE STUDY IN A PULMONOLOGY DEPARTMENT

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Introduction: Non-small-cell lung cancer (NSCLC) accounts for 80-85% of all lung tumors. 75% of all NSCLC cases are diagnosed in stages III and IV. The available treatment for patients in advanced stage disease is based on empirical chemotherapy or an individualized approach, defined according to the molecular profile of the tumor. Tyrosine kinase inhibitors have an important therapeutic role in patients with positive mutations in the EGFR gene.
Objective: To assess the epidemiological profile of patients treated with erlotinib in a Pulmonology Department, as well as the clinical and imagiological response and side effects.
Methods: File analysis of patients with histologically confirmed NSCLC, undergoing treatment with Erlotinib in second or third line therapy. The study was performed in a Pulmonology Department and included a 3-year period. The following data was assessed: histological type, stage, clinical and imagiological progression, side effects and causes of treatment discontinuation.
Results: Over a 3-year period, 106 patients underwent therapy with erlotinib (150 mg or 100 mg once daily), with a mean age of 67.6 years (± 10.25) and 60% were male. Most patients (72.6%) had more than one co-morbidity and the most prevalent were cardiovascular diseases. It is also important to underline that 57.5% of patients had a history of smoking. In total, 75.5% of patients had a histological diagnosis of adenocarcinoma and 18% of squamous cell carcinoma. Most patients were stage IV (56.5%) or IIIB (31.1%) when treatment with erlotinib was started. The most prevalent EGFR mutations were deletions in exons 19 and 21. Interestingly, 52.8% of patients underwent therapy with erlotinib in second line treatment with an average duration of 8.21 months and 41.5% in third line treatment, with an average duration of 11.4 months. Side effects occurred in 36.6% of patients, of which skin rash in 78.5% (n = 33), but overall the medication was well tolerated. In 5 cases treatment was discontinued due to the severity of side effects (toxic hepatitis, skin rash). As to the clinical evolution of patients, in 43 cases (40.6%) there was disease progression with clinical or imagiological deterioration and therapy was suspended after 6.25

months. At the time this study was carried out, 34 patients were being treated with erlotinib, and were stable, with good tolerability profile and mean treatment duration of 16.6 months without disease progression.
Conclusions: Erlotinib is a tyrosine kinase inhibitor administered orally with proven effectiveness, which increases response rates and progression-free survival, as also shown in this study. In addition, the tolerability and the impact on quality of life are also important factors that enhance erlotinib's role in the treatment of NSCLC.

Key words: *Non-small-cell lung cancer. Erlotinib. Tyrosine kinase inhibitors.*

P146. WHEN EBUS FAILS... ABOUT THREE CASE REPORTS

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Introduction: Sarcoidosis is a multisystemic disease of unknown etiology. The diagnosis of sarcoidosis is the combination of clinical and radiological findings supported by histological demonstration of noncaseating epithelioid granulomas. In the last decade, the advent of EBUS-TBNA demonstrated the efficacy and safety of this diagnostic technique in sarcoidosis, questioning the role reserved for each of the diagnostic techniques currently available. The diagnostic accuracy of EBUS-TBNA in the diagnosis of stage I and II sarcoidosis is 94.8% in our center. We present three case reports of sarcoidosis with lymph node and parenchymal envolvement, in which EBUS-TBNA did not provide histological confirmation.
Case reports: Case report 1: thirty-two year old man, smoker (5 pack-years), which was previously followed at another hospital unit for a clinico-radiological diagnosed sarcoidosis in 2009. The patient was sent to our hospital unit in May 2013. He presented significant weight loss and hypercalciuria. Radiologically he had multiple mediastinal and retroperitoneal lymphadenopathies and micronodular pattern in almost all lung segments with apparent worsening over the last years. EBUS-TBNA was performed in June 2013 without evidence of epithelioid granulomas in cytological and histological material. Given this result, transbronchial biopsy (TBB) was performed in August 2013 and revealed granulomas with multinucleated giant cells without necrosis, confirming the suspicion of sarcoidosis. Case report 2: Forty-three year old woman, non-smoker, with history of gastric non-Hodgkin lymphoma in complete remission since August 2013 and clinico-radiological diagnosed sarcoidosis since 2003. Referred in February 2014 to Pulmonology department because of persistent mediastinal lymphadenopathies associated with peribronchovascular pulmonary nodules. EBUS-TBNA was performed previously (October 2013) with no evidence of malignancy or granulomas. In clinical and analytical terms, the patient was asymptomatic and presented with elevated angiotensin converting enzyme. TBB was performed in February 2014 and revealed epithelioid granulomas without necrosis, suggestive of sarcoidosis. Patient is currently under medical supervision. Case report 3: forty year old man, non-smoker, locksmith, with history of hypertension. Followed in another hospital since March 2014 with complains of asthenia and dysphonia associated with diffuse micronodular pattern and hilar and mediastinal lymphadenopathies in chest CT. Sent to our hospital in May 2014 to perform an EBUS-TBNA. Faced with scarce material in the extemporaneous examination of the EBUS-TBNA collected sample, it was decided to concurrently perform a TBB. The final results of EBUS-TBNA revealed no evidence of malignancy or granulomas, while the histology of TBB showed the presence of epithelioid granulomas without necrosis and with TAAN negative for *M. tuberculosis*. These findings were consistent with the diagnosis of sarcoidosis.
Conclusions: Despite the higher diagnostic accuracy of EBUS-TBNA in stage I and II sarcoidosis, its combination with other diagnostic techniques, as illustrated by the previous case reports, can be very important in increasing the diagnostic yield in this pathology. Performing a concurrently extemporaneous examination plays an important role in deciding the use of other diagnostic techniques during the same procedure.

Key words: *EBUS-TBNA. Sarcoidosis. Diagnosis.*

P147. SPONTANEOUS PNEUMOMEDIASTINUM: A 10 YEARS' EXPERIENCE OF A PULMONOLOGY WARD

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Introduction: Spontaneous pneumomediastinum is a rare condition, characterized by the presence of free air in the mediastinum. It's a benign entity, usually self-limited and normally occurs in young patients, very often without a precipitating factor or underlying disease. Changes in intrathoracic pressure with alveolar rupture and dissection of air along the traqueobronquial tree is the pathological mechanism.
Objective: The purpose of the present study was the clinical characterization of all admitted cases in a Pulmonology service of a university hospital of spontaneous pneumomediastinum, during the last 10 years.
Methods: A retrospective, descriptive study was conducted in order to identify all the patients (aged ≥ 18 years) diagnosed with spontaneous pneumomediastinum, between January 2004 and June 2014.
Results: In a total of 8792 admitted patients there were 14 diagnosed with spontaneous pneumomediastinum, with 71.4% being male. Patients ranged in age from 19 and 87 years with the median age being 24.5 years. The mean duration of admission was 11.6 days and the median was 7.0 days. The precipitating factor was in 50.0% related to coughing bouts; 1 case related to excessive tobacco use; 1 case related to inhalation of other drugs; 1 case related to inhalation of varnishes; 1 case related to strenuous physical activity; 1 case related to emesis. In 2 cases was not possible to identify any precipitating event. In 64.3% of the patients there was a positive history of tobacco use and in 42.9% there was a previous history of bronchial hyperreactivity, with half of them having the diagnosis of asthma. Two patients had interstitial lung disease and in 5 cases there was a recent history of respiratory infection. The major initial complaints were dyspnea in 78.6%; chest pain in 71.4%; neck pain in 50.0%; cough in 50.0%; dysphagia in 35.7%; odynophagia in 21.4%. During clinical examination there was subcutaneous emphysema in 78.6% of patients. Chest radiograph was diagnostic in 71.5% of patients and computed tomography was required in the other cases. In the majority of the cases (10 patients) there was no complications related to pneumomediastinum, but there was a simultaneous pneumothorax in 3 patients and one case of pneumorachis. There was one death but not directly related to this condition. All patients were managed conservatively and there were no recurrences during follow-up.
Conclusions: Despite having a low incidence, spontaneous pneumomediastinum should be included in thoracic pain and dyspnea differential diagnosis and radiological exams should always be performed. Spontaneous pneumomediastinum may occur without a precipitating event and with no findings on chest radiography. Prognosis is excellent with expectant treatment and recurrence is low, but secondary causes must be ruled out to avoid complications.

Key words: *Pneumomediastinum. Subcutaneous emphysema. Dyspnea.*

P148. COMPUTED TOMOGRAPHY GUIDED CORE NEEDLE BIOPSY IN PATIENTS WITH SUSPECTED PULMONARY DISEASE: DIAGNOSTIC YIELD AND COMPLICATIONS

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Introduction: In Europe, lung cancer is the leading cause of cancer related deaths. With the development of computed tomography (CT) and its widespread use in clinical practice, the detection of lung lesions increased. The CT guided core needle biopsy (CNB), has established itself as minimally invasive, safe and effective procedure, for obtaining histologic diagnosis of lung lesions in selected patients with suspected disease. The procedure is generally considered safe, but complications such as pneumothorax, alveolar hemorrhage and hemoptysis may occur.
Objective: Evaluate the diagnostic yield of CT-guided CNB in patients with suspected pulmonary disease and analyze the complications of this procedure.
Methods: Retrospective study of CT guided CNB, performed between 06/2008 and 03/2014, in an imaging service, to patients with pulmonary lesions previously documented by chest CT. Were analyzed: sociodemographic variables, smoking history, size and distribution of the lesions, type of needle used in the procedure, diagnostic techniques performed before and after the procedure, complications and diagnostic yield.
Results: Were included 116 patients, of whom 85 (73.3%) were men. The mean age was 67 ± 12 years. Had smoking history 83 patients (71.6%). The mean size of the lesions was 44 ± 32 mm. About the lesions distribution: side - right in 54 (46.6%), left in 40 (34.5%) and bilateral in 22 (19.0%) cases; lobe – upper in 43 (37.1%), medium in 11 (9.5%), lower in 43 (37.1%) and several lobes in 19 (16.3%). Had undergone previous diagnostic techniques 87 (75.0%) patients (87 [75.0%] fiberoptic bronchoscopy; 31 [26.7%] transthoracic needle aspiration biopsy; 7 [6.0%] EBUS TBNA). The most widely used needle was the 20G, in 54 patients (46.6%). There were complications in 37 (31.9%) cases (15 [40.5%] pneumothorax - 6 [16.2%] requiring chest drainage; 12 [32.4%] alveolar hemorrhage; 9 [24.3%] hemoptysis; 1 [2.7%] hemothorax). The occurrence of pneumothorax was statistically superior (p = 0.011) in patients with smoking history. The diagnosis was obtained in 69 (59.5%) cases (53 [45.7%] malignant lesions and 16 [13.8%] benign lesions). Of the 47 inconclusive cases after CNB, 19 had histological result after undergoing surgical biopsy.
Conclusions: In this study, the diagnostic yield was 60%, noted here that the study period encompasses the initial implementation phase of the CT-guided CNB in this Service. Complications of the technique occurred in a small number of cases, most of it minor complications (in which the patient was discharged home). The pneumothorax was the most frequent complication, which is significantly higher in patients with smoking history.

***Key words**: Core needle biopsy. Pulmonary disease. Diagnostic yield. Complications.*

P149. THE IMPORTANCE OF FIBEROPTIC BRONCHOSCOPY

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Introduction: Bronchoscopy is a complementary diagnostic procedure that allows direct visualization of the tracheobronchial tree and the realization of auxiliary techniques such as bronchial brushing, bronchial biopsy, bronchoalveolar lavage (BAL) and transbronchial needle aspiration. This endoscopic method can be used for therapeutic and diagnostic purposes, with a rate of serious complications ≤ 2%, the most frequent hypoxemia, bleeding and fever. Bronchoscopy is an important diagnostic and therapeutic method in hospitals. It is however not free from complications, being an invasive method its indications should be carefully considered in each case.
Objective: The present study had as main objective the diagnostic evaluation of patients undergoing bronchoscopy (FB) in CHBM. As secondary objectives, the correlation between age and etiology identified, the identification of the reason for requesting the examination, etiological identification and characterization.
Methods: An observational descriptive study was conducted. The study population were patients of the Barreiro Montijo Hospital Center (CHBM), a total of 917 users who underwent bronchoscopy between 2010 and 2013. The data collection was made from the analysis of samples taken and endoscopic findings (bronchoalveolar lavage, biopsy, and culture examination of secretions). Of the 917 patients, 48 meet the criteria for exclusion, which was performing bronchoscopy with therapeutic intent.
Results: Of the patients analyzed, 869 (94.8%) met the inclusion criteria. The main reason for the request was the bronchoscopy imaging alteration observed in previous complementary data (46.9% of cases), followed by infectious process (24.4%), suspected neoplasm (23.4%) and therapeutic (5.2%) with the latter been excluded from the statistical analysis. In 636 patients (69.4%) was etiologic identification by fiberoptic bronchoscopy (FB). In 28.5% of cases are objectified nonspecific inflammatory signals, neoplasic etiology in 24.3% and 16.6% of infection. When analyzed by age groups it was found that below the age of 50 there was a slight predominance of infectious etiology (65 cases with isolated agent), between 51-75 years had a higher incidence of neoplasia (168 cases identified), and above 76 years inflammatory etiology was the most identified. About the etiological characterization, 152 cases of infection were identified, with isolation of the causative agent. In the characterization of neoplasic etiology it was found 61 cases of adenocarcinoma, 60 cases of squamous cell carcinoma, 24 small-cell carcinoma, 31 cases of pulmonary metastasis and 47 cases without histologic type identified through direct and indirect endoscopic signs, a total of 233 cases (24.3%).
Conclusions: Bronchoscopy is a complementary diagnostic test useful in the study and evaluation of patients with pulmonary pathology. The sample taken showed results similar to those recognized for the general population, as determined by several epidemiological studies. In short, we highlight the importance of this diagnostic endoscopy performed by pulmonologists, that this Hospital corroborates the statistical data known worldwide.

***Key words**: Fiberoptic bronchoscopy. Barreiro Montijo Hospital Center.*

P150. THE CONTRIBUTION OF FIBEROPTIC BRONCHOSCOPY IN THE DIAGNOSIS OF HEMOPTYSIS

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Introduction: Hemoptysis, or sputum with blood, may present as mild, self-limited episode associated with benign disease or may be associated with emission of large amount of blood and be a marker of severe pulmonary disease, and so the determination of its etiology is very important.
Objective: To analyze the contribution of fiberoptic bronchoscopy (FOB) in the diagnosis of hemoptysis.
Methods: Retrospective analysis of clinical records of patients submitted to FOB after an episode of hemoptysis between July 2013 and July 2014. Given the subjective characterization of the volume of hemoptysis, these were stratified into mild/moderate or severe

(description of large volume, decrease > 1 g/dL in hemoglobin level, hemodynamic instability, acute respiratory failure).
Results: Seventy patients were included, 70% (n = 49) were male and the average age was 59 years. Forty-five patients (64%) were current or former smokers and 38 patients (54%) had previously known pulmonary disease. Eleven patients were under anti-aggregation and 5 patients under anticoagulation. Following the etiology study of hemoptysis, and prior toFOB, 88.5% of patients performed a chest radiography and 100% of patients a chest CT-scan (CT). TheCT showed changes in 58 patients (83%), the most frequent changes were ground-glass opacities, nodular lesions and fibrotic sequelae. In total, the FOB was altered in 40% (19 with non-specific changes (NSC), including blood residues, 2 with indirect signs of neoplasia (ISN) and 7 direct signs of neoplasia (DSN)). Among patients with abnormal CT, FOB revealed endobronchial alterations in 24 patients (41.4%), 17 cases of NSC, 2 of 5 ISN and DSN. Patients with normal CT (12 patients, 17%), the FOB showed endobronchial lesion in one third (2 NSC and 2 DSN). Overall, the most frequent causes of hemoptysis were infectious (pneumonia and tracheobronchitis) and lung cancer, both represented by 19 patients (27%). Among patients with severe hemoptysis (n = 18), the major cause was infectious (39%) followed by bronchiectasis (28%) and, in this group, only 3 patients had coagulation disorders. In patients with normal CT, the FOB allowed the diagnosis of 5 malignancies, 1 complication post-lobectomy and 6 patients remained undiagnosed. The FOB has determined endobronchial site of bleeding in 12 patients (17%).
Conclusions: This study allowed us to emphasize the important role of fiberoptic bronchoscopy in the etiology investigation of hemoptysis. This diagnostic tool helps to exclude or confirm potentially serious lung disease, as malignancy, often associated with hemoptysis, as demonstrated in this study.

Key words: *Hemoptysis. Fiberoptic bronchoscopy.*

P151. POST-TUBERCULOSIS BRONCHIAL STENOSIS: 8 YEARS OF EXPERIENCE

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Introduction: In 2013, Portugal reported 2,142 new cases of tuberculosis (TB), which highlights the public health burden of this disease in the country. Studies have shown that up to 70% of the patients with trachea-bronchial tuberculosis can develop post-TB bronchial stenosis (PTBS) even if they completed the full treatment regimen. Presently, there is no consensus regarding the best endoscopic approach to these patients.
Objective and methods: To describe the PTBS cases diagnosed in our department and to assess the efficacy of endoscopic treatment in these patients. For this purpose, all PTBS case files between 2006 and 2013, were reviewed.
Results: We included 9 patients, from which 8 were female. The mean age was 44.2 years. PTBS was diagnosed at same time that tuberculosis in 55.6% of the cases. In average, the remaining PTBS cases developed in 48.7 months [min 3; max 96] after TB diagnosis. Total or partial atelectasis was the most common finding in thoracic imaging and the majority of cases occurred in the right side of the bronchial tree (66.7%). During the follow-up time (median of 13 months) the patients were submitted on average to 2.1 flexible bronchoscopies and 4 rigid bronchoscopies. Two patients underwent exclusive photocoagulation and mechanical dilatation using balloon catheters (luminal obstruction < 20%), whereas the remaining had the previous procedures performed, as well as, placement of silicone stents. One patient was lost to follow-up and another was submitted to surgery because of the complexity of the endoscopic findings. The most common complications after procedure were: granulation tissue formation (5 patients) and bronchomalacia (4 patients). After removal of the first stent three patients had to place another bronchial stent due to restenosis. In average the patients held the silicone stent for 7.8 months and two patients still maintain the stent at this pointing time. Currently, our patients have the following symptoms: dry (n = 5) or productive cough (n = 3), being the latest more common in patients that have a stent in place; fatigue and dyspnea evaluated by the mMRC scale (mean of 1.75).
Conclusions: Despite of being rare PTBS is associated with high morbidity. Bronchoscopy intervention plays a crucial role in the restoration of the adequate diameter of the tracheobronchial tree. Having in mind that restenosis rate is not neglectable it's important to define the best endoscopic approach and the optimal timing of silicone stent removal. Notwithstanding the therapeutic advances in bronchoscopy, the majority of patients remain symptomatic after treatment.

Key words: *Bronchial stenosis. Tuberculosis. Endoscopic treatment.*

P152. BRONCHOSCOPY: AN OPPORTUNITY FOR TUBERCULOSIS SCREENING?

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Introduction: Tuberculosis remains a major public health problem in some European countries, including Portugal. Early identification of infectious cases is essential to minimize disease transmission in the community. The value of routine culture for mycobacterium from bronchoscopic samples and it's cost-effectiveness is uncertain, but is recommended in international guidelines in areas where the prevalence of tuberculosis is intermediate or high.
Objective: To evaluate the outcome of mycobacterial examination in patients who underwent diagnostic flexible bronchoscopy in a respiratory endoscopy unit of a tertiary care hospital.
Methods: Mycobacterial examination results (acid-fast bacillus smear and culture on Löwenstein-Jensen and BACTEC™ MGIT™) of bronchial aspirate and bronchoalveolar lavage of patients who underwent diagnostic bronchoscopy in 2013 were analyzed.
Results: 642 bronchoscopic examinations were performed and in 572 patients (89%) samples were sent to mycobacterial examination. Tuberculosis was suspected in 17% (n = 97) of the exams. Mycobacterium tuberculosis was isolated in 26 cases (4.5%); only in one patient the diagnosis was not previously suspected.
Conclusions: This study suggests that mycobacterial examination in patients who perform bronchoscopy should be supported clinically and radiologically, thus optimizing available resources.

Key words: *Bronchoscopy. Tuberculosis.*

P153. CULTURAL EXAMINATION OF ROUTINE BRONCHIAL ASPIRATE: WHAT UTILITY?

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Introduction: The bronchial aspirate is useful tool in identifying the cause of bronchopulmonary infection such as, the treatment

failure with empirical antibiotics, and knowledge of the colonization's ecology. The colonization as a risk factor for subsequent infection, should be considered in the choice of antibiotics for the rational management of antibiotics.
Objective: Epidemiological characterization of patients undergoing bronchoscopy with identification of microorganism in a culture of bronchial aspirate, with infection or colonization's criteria.
Methods: A retrospective observational study from 10/01/2010 to 09/30/2013. 544 samples processed for bacteriological examination of bronchial aspirate. Inclusion criteria: identification of the microorganism in culture of bronchial aspirate. Inclusion in 2 groups: colonization - isolated microorganism ≥ 10^4 CFU/mL; infection - isolated microorganism ≥ 10^6 CFU/mL and antibiotics sensitivity test. N = 106 samples with microbiological identification: 35 with colonization criteria and 71 with infection.
Results: The sample was mostly male, Pulmonology inpatient, non-smoker, and superior mean age in the infection group. Prevailed the suspicion of bronchopulmonary infection as an indication for bronchoscopy (colonization 31.4%, infection 40.8%), followed by hemoptysis and suspected neoplasia in colonization group (34%) and *"bronchial toilet"* in infection group (19.7%). In the group with infection criteria it was found: 39.4% with respiratory antecedents (20 with structural lung changes), 29.6% with previous antibiotics in the last three months, 67% using antibiotics at the time of sampling and 52.1% with antibiotics for at least 72 hours; 73% with some immunosuppression factor. Inflammatory signs dominated the bronchoscopy (colonization 60%, infection 49.3%). The most frequently isolated microorganism was methicillin-resistant *Staphylococcus aureus (MRSA)*: 31.4% in colonization, 40.8% in infection group. Antibiotic specifies coverage for *MRSA* for more than 72 hours in 13.8% in the infection. Antibiotics sensitivity test: 36.6% resistance to 1 antibiotics group and 54.9% at least two. Resistance by antibiotics group: 80.3% to penicillin and beta-lactamase inhibitors, 28.2% to macrolides and 22.5% to quinolones. *MRSA:* 93.1% sensitivity to sulfonamides *"in vitro"*.
Conclusions: The *MRSA* is a problem in our ecology, with isolation in 37.7%. Epidemiologically is responsible for 41% of treatment failure in the infection group, with appropriate antibiotics in terms of literature, and 31% colonization unsuspected *"ad initium"*. *MRSA* presented in 93.1% sensitivity to sulfonamides *"in vitro"*. Is *MRSA* a microorganism to consider *"ad initium"* in the choice of empirical antibiotic therapy? and in subsequent infection of patients with prior colonization, for the rational management of antibiotics.

Key words: *MRSA. Bronchial aspirate. Colonization. Infection.*

P154. EPIDEMIOLOGY OF BRONCHIAL ASPIRATE CULTURE OVER THE LAST 3 YEARS – WHAT WAS ISOLATED?

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Introduction: Knowledge of hospital ecology is essential for proper infection control. Studies in Europe show a downward trend in methicillin-resistant *staphylococcus aureus (MRSA)* and variability for *acinetobacter*, on the contrary in Portugal, there is a growing trend of *MRSA*. Antibiotic resistance is a public health problem, which leads to increased costs, prolonged hospitalization, treatment failures, and sometimes death.
Objective: Knowledge of microorganisms isolated from culture of bronchial aspirate, and resistance to antibiotic profile.
Methods: Epidemiologic, observational, retrospective study of the culture of the bronchial aspirate at Endoscopy Unit at Sousa Martins Hospital from 10/01/2010 to 09/30/2013.
Results: N = 544 bronchial aspirate cultures; 467 patients: 66.6% males, 33.4% females. Median age 71 years. Smoking habits: smoking (16.9%), ex-smokers (21.6%), non-smokers (61.5%). Indication for bronchoscopy: bronchopulmonary infection (28.7%), suspicion of lung cancer (25%), hemoptysis (14.5%) and bronchial *toilet* (10.3%). Culture of bronchial aspirate: commensal flora (50.2%), negative (18.9%), infection (21%) and colonization (9.9%). Microorganism isolated in colonization: *MRSA* (35.2%) and *Acinetobacter spp.* (5.6%). Microorganism isolated in infection: *MRSA (*44.7%), *Pseudomonas aeruginosa* (13.2%) and *Acinetobacter spp.* (10.5%); 20% from cultures with at least 2 microorganisms isolated. In the distribution of microorganisms isolated by the 3 years of the study there was an increasing trend in terms of *MRSA* and *Pseudomonas aeruginosa* and an decreasing trend in *Acinetobacter spp*. Antibiotics sensitivity test: 31.6% resistance to 1 antibiotic group, 60.6% at least 2 groups. Only 7.9% of microorganisms were sensitive to all antibiotic. Over the 3 years of the study there was an increasing trend in antibiotic resistance. Resistance by antibiotic groups: 82.5% to penicillin and beta-lactamase inhibitors, 31.6% to macrolides and 24.6% to quinolones. *MRSA:* 93.1% sensitivity to sulfonamides *"in vitro"*.
Conclusions: The rate of identification of the etiologic agent in bronchial aspirate's cultures was 31%. The most frequent microorganism isolated was *MRSA*. It was identified a growing trend of isolation of *MRSA* and *Pseudomonas aeruginosa*, and decrease of *Acinetobacter spp*. Resistance to, at least, one group of antibiotic in 92.1%. Profile of most frequent resistance was to penicillin and beta-lactamase inhibitors.

Key words: *Bronchial aspirate. Microorganism. Antibiotics resistance.*

P155. NON INVASIVE VENTILATION IN INTENSIVE CARE UNIT, IN A 6-MONTH PERIOD

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Introduction: Non invasive ventilation (NIV) has become a key resource to treat acute chronic obstructive pulmonary disease (COPD) and respiratory failure in cardiogenic lung edema (CLE). In the ICU, NIV is an alternative or a complement to invasive mechanical ventilation (IMV).
Objective: Describe the practice of NIV in the Intensive Care Unit (ICU) at Hospital de Braga, in a 6-month period (from January to June, 2013).
Methods: Epidemiological, clinical, analytical and ventilatory data from 30 patients undergoing NIV were analyzed retrospectively.
Results: 187 patients were admitted at ICU, 177 (94%) had ventilatory support, and 30 underwent NIV (16%). The average age was 61.5 years and the majority of patients were male (57%). The mean SAPS II was 48.6%. The causes which led to the use of NIV were acute respiratory failure after extubation in 27 patients, acute exacerbation of COPD in 1 patient (3.3%), pneumonia in 1 patient (3.3%) and "do-not-intubate" decision in 1 patient (3.3%). In patients with acute respiratory failure after extubation we found that in 19 (70%) NIV was used to supplement IMV in the immediate extubation period; 7 patients (26%) had heart failure and developed cardiogenic lung edema and 1 (4%) had a diagnosis of severe COPD requiring NIV during entire time of hospitalization. The most used type of interface was face mask (97%). In 4 patients, there was need for invasive ventilation because NIV failed. In terms of minor complications we had one patient with bilateral

conjunctivitis and other with an important air leakage. One of these patients died.
Conclusions: NIV complemented IMV and in the majority of patients was used to facilitate weaning on acute respiratory failure after extubation. In addition to complementing IMV it also avoided intubation in patients who, otherwise, would have to be subjected to it.

Key words: *Non-invasive ventilation. Intensive care. NIV.*

P156. ISOLATION OF *NOCARDIA* IN PATIENTS WITH CHRONIC LUNG DISEASE: RISK FACTORS, CLINICAL RELEVANCE AND OUTCOME

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Introduction: The genus *Nocardia* is a ubiquitous group of environmental bacteria that usually manifest as an opportunistic infection in immunocompromised hosts, however, the infection can also occur in immunocompetent individuals. In the literature the importance of chronic lung disease, such as COPD, has been described as a risk factor to the *Nocardia* infection. Regardless, the clinical relevance of the isolation of Nocardia inthese patients is still unclear.
Objective: To describe the patients, followed in outpatient Department of Pneumology, with chronic lung disease and isolates of *Nocardia spp.* in respiratory specimens.
Methods: Patients with at least one isolation of *Nocardia* spp. between January 2010 and March 2013, were retrospectively analysed. Only the patients with at least 12 months of follow-up after the first isolation were analysed. Pulmonary nocardiosis was defined as the isolation of *Nocardia spp.* in respiratory specimens in association with clinical and radiological manifestations not assignable to other causes.
Results: Thirty seven patients were included, 65.9% (n = 27) male sex, mean age of 67.2 ± 11.2 years, 51.4% (n = 19) nonsmokers. The mean of isolation of *Nocardia spp.* per patient was 1.3 (min. 1; max. 6). After the first isolation (T_0) the mean follow-up time was 19.5 months (min. 12; max. 42), with a mean of 7.1 respiratory samples collected by each patient (min. 1; max. 30). Thirty two patients (86.5%) had a thoracic computerized tomography (CT) available within the 3 months before and 6 months after T_0. Twenty eight patients (75.7%) had a re-evaluation thoracic CT between 12 and 20 months of follow up. During the follow-up, 11 patients had a brain CT, all of them without signs of central nervous system involvement. All the patients included had chronic pulmonary disease (21.6% asthma, 37.8% COPD, 62.1% non-cystic fibrosis bronchiectasis). Ten immunosuppressed patients (1 lung transplantation, 3 systemic corticosteroid therapy and 6 neoplastic disease). Twelve patients (32.4%) had antibiotics in the three months before T_0. Overall 6 patients were treated (4 pulmonary nocardiosis, 1 lung transplant, 1 under evaluation for lung transplant). The remaining cases (n = 31; 83.8%) were considered *Nocardia* colonization (25 sporadic colonization).
Conclusions: The microbiological isolation of *Nocardia spp* in respiratory specimens not associated with clinical or radiological findings can be found in patients with multiple lung diseases. The decision to initiate treatment, which is long and often associated with side effects, should be properly taken. Non-cystic fibrosis bronchiectasis was the most frequent pulmonary disease in this sample.

Key words: *Nocardia spp. Lung disease.*

P157. QUALITY OF LIFE OF LUNG TRANSPLANT RECIPIENTS

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Introduction: The success of lung transplant (LT) has improved over time as evidenced by better long-term survival outcomes. Although the evaluation of the quality of life of recipients is not performed systematically, this is one of the most important outcomes to the success of this treatment.
Objective: To evaluate the impact of LT on the quality of life of patients and their evolution during the post-transplant follow-up.
Methods: Of the 83 patients followed in Lung Transplant outpatient clinic at Centro Hospitalar de São João, 37 (30 lung transplant recipients and 7 lung transplant candidates) completed the Medical Outcomes Study Short Form-36 (MOS SF-36) and the Hospital Anxiety and Depression Scale. The lung transplant recipient (n = 30) were grouped according to the time of transplantation [Group 1: < 1.5 years (n = 5); Group 2: 1.5-3 years (n = 6); Group 3: > 3 years (n = 19)]. The parameters assessed in the questionnaires were compared between the groups pre- and post-transplant.
Results: Compared with candidates, recipients have better quality of life assessed by the MOS SF-36. However, only the group of patients with less than 1.5 years of transplantation reported statistically significant differences in quality of life relative to candidates, particularly in the physical function dimension (84.0 ± 17.1 vs 29.3 ± 22.4%, p = 0.01), physical dimension (90.0 ± 22.3% vs 21.4 ± 39.3%, p = 0.045) and role emotional dimension (93.4 ± 14.7 vs 28.6 ± 40.5%, p = 0.044). No statistically significant difference was found between the three groups of lung transplant recipients, but there is a downward trend in quality of life over the years post-transplant. Levels of anxiety and depression are significantly lower in transplant recipients than in candidates, with no differences among the three groups after transplantation.
Conclusions: The improvement of the quality of life of transplant patients is highest in the first year and a half after transplantation, with no significant decrease over the years.

Key words: *Lung transplantation. Quality of life. Anxiety and depression.*

P158. RECURRENT PLEURAL EFFUSION AND FEVER – QUID EST?

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Case report: A seventy-four-year old male patient, ex-smoker, doing rural activities frequently, was admitted to the hospital for fever, dry cough and left pleuritic chest pain during the last month, with no response to antibiotics (Amoxicillin/clavulanic acid and azithromycin). The initial evaluation revealed fever, bilateral pleural effusion (predominantly left-sided) and elevated serum markers of systemic inflammation. He was medicated with piperacillin/tazobactam and a thoracocentesis was performed. Pleural fluid was an exudate, with high white blood cell count and normal adenosine deaminase. Blood and pleural fluid cultures, HIV serology, pleural fluid cytology and pleural biopsies were all negative. Despite broad-spectrum antibiotic, the patient had persistent fever and persistent left sided pleural effusion. A pelvic-abdominal-thoracic computed tomography and screening tests for autoantibody

detection were done and no abnormal results were found. Two months after the beginning of symptoms a serology study for atypical microorganisms was done. We found an IgG titer of 1/128 to *Coxiella burnetti* phase II antigen by indirect immunofluorescence assay. Three weeks after, the titer doubled (1/256). We considered the diagnosis of acute Q fever. The patient was medicated with doxycicline with good clinical and radiological response.
Discussion: Q fever is a worldwide zoonosis caused by *Coxiella burnetii*. In Portugal, Q fever is a notifiable disease. Between 2002 and 2006, a total of forty seven cases were reported. Human infection is usually acquired from inhalation of contaminated aerosols. The disease has a broad spectrum of clinical behaviour, ranging from a limited febrile illness to endocarditis. Indirect immunofluorescence is the reference technique for its diagnosis. Adults are treated with doxycycline 100 mg (twice daily) for two-three weeks. This is a rare case of recurrent pleural effusion that illustrates the importance of epidemiologic context for the diagnosis of less obvious clinical identities.

Key words: *Q fever. Coxiella burnetii. Pleural effusion.*

P159. TUBERCULOSIS: THE DIAGNOSIS' CHALLENGE

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Tuberculosis remains one of the most important causes of death from an infectious disease, and it poses formidable challenges to global health at the public health level. The most common causative agent in humans is *Mycobacterium tuberculosis*. The disease primarily involves the lungs, and at times distant blood-borne spread results in the development of extrapulmonary tuberculosis. The intestine is the area of the gastrointestinal tract more frequently affected by infection with *M. tuberculosis*. The jejunum-ileum and ileocecal regions are affected in more than 75% of all cases. Only a minority of patients with intestinal tuberculosis has specific symptoms. Abdominal pain is the most common symptom being referred in more than 90% of all cases. Often, patients with intestinal tuberculosis don't have active pulmonary tuberculosis, although most of them show evidence of residual thoracic lesions of the disease. In clinical practice, the differential diagnosis of intestinal tuberculosis is done mostly with Crohn's disease, intestinal lymphoma, carcinoma of the cecum and amebiasis, especially if it affects the ileocecal region. The Polymerase Chain Reaction (PCR) used for the detection of DNA of *Mycobacterium tuberculosis* in the intestine has high specificity and sensitivity and enables results within 48 hours. The treatment of the disease is primarily medical. We present a 39 year-old female, with history of chronic diarrhea and detection of ulcerative lesions in the ileocecal valve. The histological features of intestinal biopsies were suggestive of Crohn's disease. It was not performed treatment for the disease. Later, the patient started complains of dyspnea, chest pain, cough, night sweats and weight loss, associated with radiological changes. She was hospitalized with the diagnostic hypotheses of pleuro-pulmonary tuberculosis versus interstitial lung disease. Additionally, she referred nausea, epigastric pain, and cramping pain in the left upper quadrant of the abdomen. It was decided to initiate treatment with antituberculosis drugs due to the large extent of the disease. Colonoscopy was repeated and showed ulceration and deformation of the cecum and ileocecal valve, as it was already known. The PCR performed in the biopsied tissue revealed *Mycobacterium tuberculosis*. Additionally, it was detected acid-fast bacilli using the Ziehl-Neelsen stain. The diagnosis of pulmonary tuberculosis was confirmed by sputum and bronchoalveolar lavage cultures. Patient's clinical improvement occurred.

Key words: *Pulmonary tuberculosis. Intestinal tuberculosis. Crohn's disease.*

P160. TUMOR OR INFECTION? ABOUT A CLINICAL CASE OF CHRONIC NECROTIZING PULMONARY ASPERGILLOSIS

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Introduction: Chronic necrotizing pulmonary aspergillosis (CNPA) is one of a large spectrum of pulmonary diseases caused by *Aspergillus*. It is characterized by an indolent and destructive process of the lungs due to the invasion of lung tissue by hyphae of *Aspergillus*. In patients with moderate immunosuppression, co morbidities such as chronic obstructive pulmonary disease (COPD), and several clinical conditions affecting lung architecture or the immune status develops easily. The diagnosis is based on histological demonstration of tissue invasion by *Aspergillus* and its growth in culture.
Case report: The authors follow a patient, aged 92, ex-smoker, autonomous, with a history of COPD, bronchiectasis, pulmonary tuberculosis sequelae, multifactorial anaemia, ischemic heart disease and chronic renal failure. Hospitalized in June 2013 with the diagnosis of community acquired pneumonia, no agent was isolated, and treated with levofloxacin, having scaled antibiotic therapy to meropenem and linezolid for clinical and analytical worsening. Bronchoscopy revealed generalized inflammatory signals; bacteriological examination and mycobacteriological bronco alveolar lavage (BAL) were negative; bronchial biopsy (BB) showed slight inflammatory infiltrate. A month and a half later was readmitted in the hospital due to clinical condition compatible with respiratory infection. Chest X-ray revealed diffuse opacity of the left lung field. The patient started empiric treatment with piperacillin + tazobactam and ciprofloxacin. Computerized tomography (CT) of the chest showed consolidation without air bronchograms involving the entire left upper lobe with wall thickening and luminal filling the upper left lobar bronchus and distal bronchial structures. New bronchoscopy showed complete occlusion of the left upper lobe bronchus by mass consists of necrotic tissue with marked inflammatory signs suggestive of malignancy. The BAL culture tests revealed *Klebsiella pneumoniae* (sensitive to imipenem) and *Aspergillus fumigatus*. The cytological examination of BAL was negative for tumour cells with isolation of *Aspergillus spp*. The BB showed abundant material consisting of fungal hyphae (*Aspergillus spp*), necrosis and inflammatory exudate without neoplastic tissue. Precipitin *Aspergillus spp* - IgG (*fumigatus, niger, flavus, terrus*) were positive. Initiated therapy with Itraconazole with significant clinical and analytical improvement. New bronchoscopy revealed no signs of occlusion of the left upper bronchus lobe, maintaining isolation of *Aspergillus fumigatus* in BAL exam. Repeated CT of the chest showed significant radiological improvement. After hospital discharge, continues therapy with voriconazole during 3 months with good tolerability and no adverse reactions. The clinical and analytical evolution was favourable with regression of pulmonary lesions.
Discussion: The delay in diagnosis of CNPA is motivated by the fact that it is an uncommon pathology, usually indolent and occurs in patients with previous lung disease. The lesson learned point out the necessity to raise the level of suspicion in order to obtain a diagnosis and initiate antifungal therapy as soon as possible, not compromising the prognosis.

Key words: *Pulmonary aspergillosis. Aspergillus fumigatus.*

P161. WHEN A DIAGNOSIS IS NOT ENOUGH

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Introduction: Opportunistic infection is an important cause of morbidity and the main cause of death in patients with multiple myeloma (MM). The increase of the susceptibility to infection in patients with MM comes from the interaction between several factors, including age and the immunosuppressed status due to therapy and complications from the disease.
Case report: 73 year-old male, ex-smoker, without relevant pathological background, referred due to dyspnoea, morning dry cough, left thoracalgia with pleuritic characteristics, weight loss and hip pain with about 3 month evolution. He also refered intermittent fever at presentation. The chest X-ray stood out left upper lobe (LUL) heterogeneous infiltrate. Computed tomography revealed LUL heterogeneous consolidation with parenchymal distortion and associated traction bronchiectasis as well as a conglomerate of micronodules. Subsequent studies demonstrated nodule stability and osteolytic lesions in the spinal cord, sacrum and ilium, without involvement of soft tissues. The X-ray of the skeleton showed the extension of the lytic lesions to the cranial bone and humerus. Analytically, the emphasis was on the presence of anaemia and monoclonal peak in the serum and urinary electrophoresis. He went through a guided biopsy to the cystic lesion of the right ilium wing which was compatible with plasmacytoma. Fibrobronchoscopy showed irregularity of the mucous membrane and distortion of the bronchial tree architecture, predominantly on the left side and demonstrated the presence of acid-alcohol resistant bacilli in the direct and cultural exam on bronchial aspirate as well as positivity in the polymerase chain reaction for detection of *Mycobacterium tuberculosis* in the bronchoalveolar lavage. The patient began therapy with antibacilars in a first stage and afterwards chemotherapy and multiple prophylactic antibiotics. Multifactorial acute renal lesion was registered, which motivated the adjustment of the several therapeutic schemes in progress.
Discussion: In the available literature we find several explained cases of tuberculosis in patients with MM, although the diagnosis is normally done in a more advanced stage of the disease and concerning the treatment, namely with dexamethasone and bortezomib. In this case, the concurrent diagnosis of both pathologies brought doubts during the complementary study and interfered with the onset of the carried out treatment, due to the possibility of vertebral tuberculosis.

Key words: *Tuberculosis. Myeloma. Oppurtunistic infection.*

P162. ASPERGILLOMA: A (SLIGHTLY) BENIGN PATHOLOGY

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Introduction: The aspergilloma is a saprophytic infection by *Aspergillus* spp that colonizes a pre-existing pulmonary cavitie or dilated airway, and tuberculosis is the most frequent cause. Hemoptysis, known as a major symptom, has a prevalence 69-83% and a mortality rate of 2-14%. Bronchial arterial embolization has been established as a useful and effective means for controlling massive hemoptysis, however it is known that recurrence is not rare.
Case report: The authors describe the case of a 48 years old male patient, former smoker 20UMA with a history of squamous cell carcinoma of the pharynx T4N2Mx diagnosed in May 2014 and treated pulmonary tuberculosis 10 years ago. Sent to Oncological Pulmonology Consultation because of a rounded lesion in the left large apex to exclude metastatic malignant process. Chest CT was performed and revealed a mass with a necrotic aspect with more than 8 cm long. Submitted to respiratory endoscopy, showing stenosis in the left upper-posterior segment with congestive mucosa, where they brushed and performed bronchoalveolar lavage, showing no neoplastic cells and presence of colonies of filamentous fungi, respectively. Assumed as probable aspergilloma and was proposed for pharyngeal surgery by Multidisciplinary Group of Solid Tumors Consultation (MGSTC). On the day of surgery, the patient started moderate volume hemoptysis which were controlled with medical treatment and was discharged after 2 days. Given the risk of bleeding it was decided in MGSTC to change the strategy for Radiotherapy. He resorted to emergency room 13 days later by cough and large volume hemoptysis as well as expulsion of a substantia nigra and high viscosity without other associated complaints. On admission the patient was pale and tachycardic despite being normotensive. Analytically with hemoglobin 5.75 g/dL, platelets 541,000/uL and INR 1.3. Radiographically he had a known opacity in the left third, now with greater hypertransparent area. The patient evolved with hemodynamic instability, despite the anti-fibrinolytic therapy and tranfusional support and was proposed for endovascular treatment for hemorrhagic control. He was transferred to a tertiary hospital, after hemodynamic stabilization. Embolization was performed successfully, and he had no further hemoptysis for 2 months. Cervical radiotherapy was started on July 30, 2014 and in the 7th session (two months after embolization) he had culminant rebleeding, culminating in the death of the patient.
Discussion: Although this is a benign pathology, the aspergilloma may have a fatal outcome, especially for massive hemoptysis as in this patient. Bronchial artery embolization, recognized as a first-line control of hemoptysis procedure is safe and effective, however shows high recurrence rates of up to 42%, especially when we talk of fungal etiology.

Key words: *Aspergilloma. hemoptysis. Arterial embolization.*

P163. PULMONARY NODULE BY *ASPERGILLUS FUMIGATUS* – SURPRISE IN DIAGNOSIS AND TREATMENT CHALLENGE

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Introduction: *Aspergillus* spp. are ubiquitous fungus in nature. Lung disease has several forms of expression; pulmonary nodule, a less frequent form, present mainly in immunocompetent individuals, and generally asymptomatic.
Case report: A 63 year old woman, non-smoker, without relevant medical history was admitted for moderate volume hemoptysis, with recurrent episodes in the previous 3 months; she denied other respiratory or constitutional complains and there was no evidence of respiratory or hemodynamic compromise; physical exame revealed crackles in the right base. Blood tests discarded anemia, elevated inflammatory markers or coagulopathy. Chest X-ray showed no relevant changes; chest CT uncovered an irregular nodule of 27 mm in the LIE and cylindrical bronchiectasis in middle lobe with adjacent mild ground glass parenchymal opacities. Bronchoscopy showed only a small clot in lingula. Microbiology and pathology of bronchial lavage (BL) were negative. Bronchial arteriography showed no changes. A biopsy of the nodule, transthoracic needle aspiration CT (TNA-CT) revealed fungal hyphae structures of irregular caliber and the nucleic acid amplification test (NAAT) was compatible with *Aspergillus fumigatus* (AF) type. The autoimmune study, HIV serology 1/2 and specific immunology to AF were negative. Treatment with voriconazole was started, which was suspended after two months for liver toxicity. The revaluation CT showed decreased lesion size (17 mm). After normalization of liver enzymes, antifungal treatment resumed, this time with itraconazole; two months later, there was an increase and cavitation of the nodule (27 mm); repeated bronchoscopy showed no changes, and microbiological studies, NAAT for AF and *Mycobacterium tuberculosis* complex (MTC), as well as malignant cells in BL/BAL were negative. TNA-CT was performed again, whose microbiological tests, NAAT for AF and MTC were negative, and the material

was insufficient to pathological evaluation. Given these results, voriconazole was reintroduced, in increasing doses until target dose, with good tolerance. By the 7th month of treatment, with no recurrence of hemoptysis, and favorable radiological evolution (apparently only evidence of a scar), a further rise in liver enzymes was noted, which prompted the decision to terminate treatment. After 8 months there was, no respiratory symptoms and no radiological evidence of recurrence.
Discussion: The clinical relevance of this case lies in this infrequent radiological presentation of pulmonary disease caused by AF, simulating lung cancer, as well as that provided by therapeutic challenge.

***Key words**: Hemoptysis. Nodule and Aspergillus fumigatus.*

P164. PULMONARY CRYPTOCOCCOSIS – AN UNUSUAL CASE

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The cryptococcosis is a fungal infection caused by capsulated yeasts of the genus Cryptococcus. Despite including over 50 species only two are considered pathogenic for humans: *Cryptococcus neoformans* and *Cryptococcus gattii*. Over the past few years cryptococcosis has gained special importance and constitutes an important cause of morbidity and mortality in immunocompromised patients (HIV infection/AIDS, neoplastic diseases, organ transplants and use of corticosteroids or other immunosuppressive therapies). Despite achieving more often immunocompromised individuals infection with Cryptococcus can also occur in immunocompetent patients. The vast majority of these individuals does not develop symptoms and does not require pharmacological treatment. The authors describe an unusual case of a male subject, 46 years old, Caucasian race, gardener, smoker with smoking history of 45 pack units/year with cough with scanty hemoptysis sputum, right chest pain and dysphonia with about 3 weeks of evolution associated with a weight loss (9 kg). The patient was submitted to a Thorax CT which showed multiple heterogeneous masses in terms of both lung fields, the larger located adjacent to the major fissure of the left lung (6.8 × 4.6) and at the level of pulmonary vertices (7.8 × 10 cm and mass 4.7 × 4.6). The last had contact with the subclavian vessels conditioning molding of trachea. After conducting fiberoptic bronchoscopy, Transthoracic aspiration and transthoracic biopsy was diagnosed pulmonary cryptococcal infection which requires directed pharmacological treatment with fluconazole. After therapy there was an exuberant clinical, analytical and radiological improvement with marked regression of bilateral lesions being the patient currently asymptomatic.

***Key words**: Pulmonary cryptococcosis. Immunocompetent.*

P165. ERITHEMA NODOSUM AND TUBERCULOSIS – AN IMPORTANT ASSOCIATION

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Introduction: The erithema nodosum (EN) is a relatively frequent entity; tuberculosis is, mainly in regions where is more prevalent, a cause that should not be forgotten. While the diagnosis of EN is observational, complementary exams help to define its etiology; without other positive data, in tuberculosis cases, tuberculin reactivity is determinant. Contact tracing of all cases of tuberculosis is very important, helping to detect sources of infection in the community.
Case report: Case 1: patient aged 33, house keeper, present in June 2013 lesions of EN in both legs and right forearm, without other symptoms. Observed in Dermathology, with PCR 1.6, TASO 67 and CT scan with hilar adenopathy, she is sent to chest clinic. Tuberculin reactivity was 21 mm. Although she had good general status and had spontaneous remission of the cutaneous lesions, we decided to initiate antibacilar treatment, considering the probable tuberculosis etiology. Proposed contact tracing, other than the direct family members, that were asymptomatic, the patient refers that their neighbour "was coughing all the time". The patient made 2HRZE/4HR scheme with good evolution. Case 2: patient aged 39, gravedigger – the neighbour that we would seek in the following days – went to emergencies in that same day with hemoptisis; he was admitted with pulmonary tuberculosis, very extensive, sputum positive. He had cough and sputum for more than a year. In August 2012 he had a visit to emergencies and presented a opacity in upper left lobe. He was treated with 2HRZE/7HR scheme with good evolution; without resistances. Case 3: patient aged 14, student, daughter of case 1, initially tuberculin negative, reacted with 20 mm, at the third month and referring arthralgias, VS 120, PCR 2,5 and chest Rx with right hilar reinforcement. She was treated with 2HRZ/4HR scheme improving well.
Discussion: EN of tuberculosis etiology is a frequent entity, presenting sometimes spontaneous remitions; tuberculin reactivity is, in the absence of other positive data, determinant to diagnosis. Contact tracing of all cases with tuberculosis, even those not contagious, is very important, allowing sometimes detect sources of infection.

***Key words**: Tuberculosis. Erithema nodosum. Tuberculin. Contact tracing.*

P166. TUBERCULOSIS – A RARE FORM OF PRESENTATION

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Introduction: In 2011 there were reported 2388 cases of Tuberculosis (TB) in Portugal. Extrapulmonary TB affects 20% of immunocompetent individuals with TB, being tuberculous enteritis the sixth most common form (1-3%). It is a rare complication of pulmonary disease, usually secondary to the swallowing of infected sputum, or less frequently by hematogenous spread, ingestion of contaminated food or contiguous spread. Clinical presentation is nonspecific, and abdominal pain is the most common symptom. Definitive diagnosis requires histological and cultural confirmation. Anti-tuberculosis treatment for this entity is similar to that used for pulmonary TB.
Case report: Authors present the case of a 55 year old man, smoker (120 pack-per-year), restaurant worker, with no previous clinical history. Presented diarrhoea and diffused abdominal pain with 5 months of evolution, worsening in the last two months with 13% of weight loss in the last month. He had no respiratory symptoms. At clinical examination the patient had diffused abdominal pain, without peritoneal reaction, and without signs of ascites. No alterations were detected in the cardiopulmonary evaluation. Laboratory tests showed anaemia (haemoglobin 6.8 g/dl) normocytic and normochromic, and C-reactive protein 12. Abdominal X-ray showed distended bowel loops and hydro-aerial levels. Ultrasound confirmed small bowel and colon inflammatory process. TC also revealed ileo-pelvic and mesenteric lymphadenopathies and mild ascites. Because of subsequent development of intestinal obstruction the patient underwent on right ileocolectomy with ileostomy. Surgical specimen showed intestinal granulomatosis with histology and lymph node compatible with TB. Chest radiograph revealed

bilateral apical heterogeneous opacities, and chest CT showed lung infiltrates at the upper, middle and lingula lobes, as well as significant bilateral pleural effusion. There were no macroscopic findings in bronchoscopy, but rare acid alcohol resistant bacilli were isolated in bronchial secretions. Due to the short bowel syndrome secondary to intestinal resection the patient initiated parenteral nutrition and intravenous anti-TB treatment regimen with isoniazid, rifampicin, levofloxacin and amikacin. It is important to emphasizethe multiple infections and complications during hospitalization in previously immunocompetent patient, including pulmonary aspergillosis, sepsis in the context of nosocomial infection with no identifiable focus (under antibacillary treatment), acute pulmonary edema, central venous catheter infection with bacteremia due to *S. haemolyticus*, acute kidney failure, iatrogenic leukopenia and neutropenia, amikacin ototoxicity and pulmonary thromboembolism. He was discharged after 6 months of hospitalization, clinically and radiologically improved. He was referred to the "Pulmonology Diagnostic Center" with the Continuum Care support service, with long-term venous catheter for parenteral nutrition and anti-tuberculosis intravenous therapy.

Discussion: Pulmonary TB may be associated with other forms of extra-pulmonary TB, including tuberculous enteritis. High index of suspicion as well as a multidisciplinary approach are necessary to make the diagnosis as quickly as possible to minimize the morbidity and mortality associated with these entities and their complications.

Key words: *Tuberculosis. Short bowel syndrome.*