P4184
Validation of CALIPER (Computer-aided lung informatics for pathology evaluation and rating) for the non-invasive assessment of pulmonary nodules of the adenocarcinoma spectrum
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Rationale: The growing utilization of high-resolution computed tomography (HRCT) for clinical diagnosis and lung cancer screening results in identification of pulmonary nodules of unknown clinical significance. Non-invasive strategies
for the individualized management of these lesions are required. In a pilot study we have demonstrated the consistent classification of pulmonary nodules of the adenocarcinoma spectrum using CALIPER.

**Methods:** Two pulmonary pathologists independently assessed histopathologic tissue invasion in 72 surgically resected pulmonary nodules (≤3 cm) of adenocarcinoma spectrum from 68 patients. Based on consensus, all lesions were categorized as either NINV (≤5 mm invasion), n=64 or INv (>5 mm invasion), n=66. CALIPER mapped the individual HRCT voxels (pre-operative HRCT) within all the nodules to one of the previously identified 9 unique radiologic patterns. The nodules were categorized as INV or NINV based on the relative distribution of the patterns. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for CALIPER-based detection of tissue invasion were calculated.

**Results:** Sensitivity, specificity, PPV and NPV were respectively 98.5% [90.7-99.9%], 66.7% [24.1-94.9%], 97% [88.7-99.4%] and 80% [30-98.9%]. Only one case was identified as NINV by CALIPER and as INV by the pulmonary pathologists.

**Conclusion:** CALIPER represents a promising tool for non-invasive risk stratification of pulmonary nodules of the adenocarcinoma spectrum. Further prospective and retrospective validation of our data is currently ongoing.

**P4185**

**Probability of malignancy based on automatic segmentation and software measurements of nodules in the Danish lung cancer screening trial (DLCT)**

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**Introduction and aim:** With the widespread use of chest CT in clinical and screening settings pulmonary nodules are detected more frequently than ever, and the risk of malignancy needs to be determined.

**Materials and methods:** In DLCT, 4,104 current and former smokers, with a history of at least 20 pack years and age between 50-70 years, were randomized to either five annual multi-slice low-dose CT screenings or no screening. All participants had an annual visit to the screening clinic where lung function tests and questionnaires concerning health, lifestyle, smoking habits and psychosocial consequences of screening were performed. All scans were double-read by two experienced radiologists and size and location were registered. Nodules between diameters of 5-15 mm were considered indeterminate, and reclassified after three months. Participants with nodules larger than 15 mm were referred to diagnostic workup, as were those with growing nodules. Lung cancer was diagnosed by pathological evaluation. Using volumetric software nodules were segmented automatically and for the solid and sub-solid components mass and volume were calculated as well as the largest axial dimension. All automated nodule-segmentations were visually reviewed for correctness and adjusted if needed.

**Results and conclusion:** We are currently analyzing the data by logistic regression with malignancy as outcome and nodule measurements and risk factors such as age, sex, smoking status and history and COPD-status as explanatory variables. The results will be presented at the ERS 2012 in Vienna.

**P4186**

**Emphysema, COPD and lung cancer screening. Update of an ongoing study**

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Recently, screening with low-dose CT (LDCT) has been shown to reduce mortality from lung cancer. We reported that emphysema on a LDCT, but not COPD (FEV1/FVC<70%), is associated with an increased risk of lung cancer. We present an update of our screening study.

Data comes from a prospective cohort of an ongoing lung cancer screening study held at our center. From 2000 to 2011, current and former smokers of at least 40 years of age and at least 10 pack-years of smoking were recruited. All had annual LDCTs and most a baseline spirometry. Lung cancer incidence density and its association with risk factors were calculated with logistic regression. In a cohort of 2607 subjects, 1925 (25% females) who had LDCTs and a spirometry were analyzed. Median age and smoking history were 55 and 33 pack-years, respectively. Emphysema on LDCT and airway obstruction on spirometry were found in 25% and 28%, respectively. Lung cancer was diagnosed in 38 subjects, 26 on the baseline LDCT and 12 in annual follow-ups. The most frequent histologic types were adenocarcinoma (53%) and squamous cell carcinoma (21%). There were a 2:1 ratio of small cell carcinoma (all in stage I or IV). The majority of NSCLC were identified in stage I (79%). The incidence density for lung cancer in subjects with emphysema, COPD, or with none was 36, 24.7 and 2.5 per 1000 person-years, respectively. Adjusting for age, sex and smoking, emphysema (OR 4.76; 95% CI 2.30-9.77) and airway obstruction (OR 2.65; 95% CI 1.26-5.57) were independent risk factors for lung cancer.

In a cohort of individuals participating in a lung cancer screening study, emphysema and airway obstruction are significantly associated with a greater risk of lung cancer.

**P4187**

**Measurement of alveolar nitric oxide in patients with lung cancer**

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**Introduction:** The presence of NO as a marker of airway inflammation and indirectly as a general indicator of inflammation and oxidative stress- incrimination as incriminating factor in lung cancer at an early stage and then the treatment of disease after chemotherapy.

**Purpose:** We studied whether exhaled NO levels altered by 3 cycles of chemotherapy be the levels at diagnosis and whether directly or indirectly related to the course of disease. Also, correlation levels of NO with other markers of inflammation.

**Method:** We studied 28 patients early diagnosed -18 men and 10 women with lung cancer. We analyse blood tests for different inflammatory markers, functional pulmonary tests and alveolar exhaled nitric oxide.

**Results:** Recorded decrease in exhaled NO after 3 cycles of chemotherapy in all patients regardless of histological type and stage. 28 patients with a mean 6.8 NO occurs after 3 cycles average 4.9, a value which is normal. Also appears strong correlation between NO before and after chemotherapy and CRP (p<0.05, r=0.42 p) and (p<0.045, r=0.64 after).

It is a further breakdown of the data by the statistical program SPSS, with subgroups for analysis based histological types.

**Conclusion:** NO alveolar measurement is a marker of airway inflammation, indicates response to chemotherapy in lung cancer. Also the inflammatory process in lung cancer confirmed and indicates response to chemotherapy through an index which is sensitive to inflammatory diseases of the airs and not reused in lung cancer before and after chemotherapy.

**P4188**

**Risk assessment of venous thromboembolism in lung cancer – Utility of Khorana model**

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**Background:** Venous thromboembolism (VTE) is a common and costly complication in patients with lung cancer. Research is focusing on identifying high-risk patients who might benefit from primary thromboprophylaxis. For this purpose, Khorana built a predictive model of VTE in cancer patients receiving chemotherapy as outpatients, including 5 independent risk factors: site of cancer, pre-chemotherapy platelet count, hemoglobin level or use of red cell growth factors, leukocyte count and body mass index.

**Aim:** To evaluate the utility of the Khorana model to predict VTE in lung cancer patients undergoing chemotherapy.

**Methods:** We conducted a retrospective study including all patients diagnosed with lung cancer between January 2007 and July 2011 who underwent chemotherapy as outpatients in Pulido Valente Hospital, in Lisbon. Risk for VTE according to Khorana model was calculated in patients with and without VTE.

**Results:** From 241 patients, 6 developed pulmonary thromboembolism (2.5%), 12 deep venous thromboembolism (5.0%) and 2 had both (0.8%), for an overall rate of VTE of 8.3%. Adenocarcinoma, metastatic disease and history of cerebrovascular disease were significantly (p<0.05) more common in the group of patients with VTE. Using Khorana model, 35,0% of patients were at high risk for VTE in the group of patients with VTE, compared to 14,3% in the group without (p=0,016).

**Conclusion:** In our experience the Khorana model proved to be useful in predicting VTE in a cohort of lung patients receiving chemotherapy. The development of risk-assessment models of VTE for lung cancer that integrate other risk factors specific for this type of cancer should although be encouraged.

**P4189**

**Arterial thromboembolic complications in patients with lung cancer – Impact on survival**

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**Background:** Venous thromboembolic events (VTE) are a frequent complication in patients with lung cancer (LC) (own data: total 7.6%). Yet the impact of arterial Thromboembolic Events (TIE) on the patient’s prognosis and preventive treatment strategies is unclear.

**Aim:** To evaluate the frequency of arterial TIE and their prognostic relevance in LC.

**Methods:** In this monocentric, observational study all patients with primary diagnosis of LC between Jan 2008 and Dec 2010 were prospectively recorded and retrospectively evaluated with regard to arterial TIE.
Results: Within 36 months 1940 patients (1209 men, 731 women) were diagnosed with LC (SCLC 10.3%, NSCLC 89.7%). Arterial TEE were documented in 51 patients (2.6%) with ischemic stroke as leading event (n=23, 1.2%), followed by events located in coronary (n=14, 0.7%), peripheral (n=12, 0.6%), mesenterial (n=4, 0.2%) and extracranial arteries (n=3, 0.6%). Kaplan-Meier-survival analysis showed shorter survival (p=0.003) for the group of patients with an arterial TEE (median survival 283 days vs. 479 days).

Figure 1. Kaplan-Meier survival analysis.

Conclusion: Besides an increased risk for deep venous TEE the frequency of arterial TEE in patients with LC is also increased. The tumor itself, chemotherapy and frequent cardiovascular comorbidities are believed to increase this risk and result in a significant worse prognosis. These data support prospective studies on primary antithrombotic prophylaxis in patients with LC.

P4190 Correlation between PET scan and cytokine in non-small cell lung cancer (NSCLC)

Background: Systemic and local inflammatory microenvironment may be an important contributor to morbidity and mortality associated with NSCLC. Exhaled breath condensate (EBC) is a non-invasive method to collect airway lining fluid for assessing lung inflammation. Interleukin-6 (IL-6) is associated with poor prognosis and correlates with neoplastic cachexia and with stage of disease. PET scan has been shown to correlate with poor prognosis in lung cancer.

Methods: Fifteen consecutive patients (12 males, mean age 64 years, range 39-82) receiving a curative resection for NSCLC were enrolled. All the patients underwent PET scan and IL-6 measurement both in serum and EBC. PET scan was positive in all the patients with a mean SUV value ± 0.29 pg/ml and 4.28 (range: 6-18.8). Mean IL-6 value was 1.05 pg/ml ± 0.09 in EBC. Significant correlation between SUV and IL-6 levels both in serum and in EBC was found (r = p <0.001 and r = p <0.05 respectively).

Conclusions: The observed relationship suggest that lung and systemic inflammation is proportional to tumor metabolic activity.

P4191 High performance and timely care of integrated FDG-PET and diagnostic CT in a rapid outpatient diagnostic program for suspected lung cancer patients

Introduction: The objective of this study was to evaluate the diagnostic performance of 18F-fluoro-deoxy-glucose-Positron Emission Tomography with integrated contrast enhanced Computed Tomography (FDG-PET/CT) as a routine diagnostic tool in a Rapid Outpatient Diagnostic Program (RODP) for patients referred on the basis of a chest X-ray suggestive of lung cancer.

Methods: A retrospective chart study was conducted of all patients referred to the two-day RODP of our tertiary care university clinic between 1999 and 2009 after an abnormal chest X-ray. We analyzed timeliness of care and the diagnostic performance of FDG-PET/CT to differentiate between malignant and benign lesions.

Results: In 386 patients available for analysis, 260 patients were diagnosed with non-small cell lung cancer (NSCLC), small cell lung cancer (SCLC) of both subtypes; 23 patients had another type of malignancy, 78 patients had certain benign disease, and in 45 patients the diagnosis was not pathologically confirmed but a medium 24.5 months follow up confirmed a benign outcome. Sensitivity, specificity, negative predictive value, positive predictive value and accuracy of FDG-PET/CT to differentiate lung cancer from benign disease were 97.7%, 60.2%, 92.5%, 84.0% and 95.7% respectively. For lung cancer patients, median referral time was seven days, diagnostic delay was 2 days and therapeutic delay 19 days.

Conclusions: FDG-PET/CT in an RODP setting for suspected lung cancer has high performance in detecting cancer and facilitates timely care.

P4192 A proposal in small cell lung cancer staging according to TNM system

Background: Many pts with limited disease [LD] behave similarly to those with extensive disease [ED] from the prognostic point of view. On the other hand, a proportion of pts with ED SCLC behave similarly to those with LD. Moreover, the 7th (IASLC) TNM classification has not been evaluated with recent, large scale studies in SCLC.

Methods: In this retrospective analysis 764 pts with proven SCLC were included managed with the same therapeutic protocols based on platinum analogues. Of these pts, 278 (36.4%) had LD, while 486 (63.6%) had ED. This classification was based on the following investigations: chest radiography, computed tomography of chest, abdomen and brain, fiberoptic bronchoscopy, isotope bone scan, spernum cytology and haematological and biochemical profile. We also grouped the pts according to new TNM classification (seventh edition).

Results: A statistically significant difference was found in survival among the LD SCLC pts with (IA + IB), (IIA + IIB + IIIA) and IIIB stage (p<0.001). Similarly we found a statistically significant difference in survival in ED SCLC pts with (IA + IIB + IIIA), IIIB and IV stage (p<0.001).

Table 1. Survival according to the stage of the disease

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of patients</th>
<th>Median survival (days)</th>
<th>95% CI</th>
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<tbody>
<tr>
<td>IA + IB</td>
<td>40</td>
<td>512</td>
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<td>IIA + IIB + IIIA</td>
<td>211</td>
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Conclusions: A new classification of SCLC can be proposed which includes four stages based on TNM classification of NSCLC. [(Stage IA+IB), (Stage IIA+IIB+IIIA), (Stage IIIB) and (Stage IV)].

P4193 The prognostic impact of stage and performance status on surgically resected non-small cell lung cancer

Background: Many pts with limited disease [LD] behave similarly to those with extensive disease [ED] from the prognostic point of view. On the other hand, a proportion of pts with ED SCLC behave similarly to those with LD. Moreover, the 7th (IASLC) TNM classification has not been evaluated with recent, large scale studies in SCLC.

Methods: In this retrospective analysis 764 pts with proven SCLC were included managed with the same therapeutic protocols based on platinum analogues. Of these pts, 278 (36.4%) had LD, while 486 (63.6%) had ED. This classification was based on the following investigations: chest radiography, computed tomography of chest, abdomen and brain, fiberoptic bronchoscopy, isotope bone scan, spernum cytology and haematological and biochemical profile. We also grouped the pts according to new TNM classification (seventh edition).

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Conclusions: A new classification of SCLC can be proposed which includes four stages based on TNM classification of NSCLC. [(Stage IA+IB), (Stage IIA+IIB+IIIA), (Stage IIIB) and (Stage IV)].
Results: ECOG performance status was related with both mean survival and disease-free survival time (respectively p=0.011 and p=0.044). 149 patients were grouped by using 1997 TNM and 2009 IASLC staging systems. According to survival analysis, disease-free survival was not related with stage but mean survival analysis revealed that stage 3 cases had significantly worse survival compared to stage 1 cases (p=0.005).

Introduction: Infections are important causes of morbidity and mortality in lung cancer patients. The myelotoxicity caused by the administration of either the chemotherapeutic regimens or the radiotherapy increases the risk of potentially life-threatening infection.

Methods: This prospective study included all patients with lung cancer who referred with signs or symptoms of infection between September 2009 and October 2011. Data concerning patient’s history, disease’s diagnosis, management and therapy and infection’s signs, symptoms and documentation were collected.

Results: Seventy one patients with lung cancer were enrolled with febrile episodes and/or microbiologically or otherwise documented infection. Forty six patients (64.8%) presented with non-small cell lung carcinoma, while 22/71 patients (31%) and 3/71 patients (4.2%) had small cell lung cancer and mesothelioma respectively. Fifteen patients (21.1%) presented with FN and totally 43/71 (60.6%) patients required hospitalization for parenteral therapy upon admission. The predominant site of the infections was the lung in 59/71 patients (83.1%). In the hospitalized setting 3 episodes of bacteremia with Staphylococcus aureus were reported and microbiologically documented infections accounted for 20.7% of the hospitalized patients. The overall mortality rate was 9.8%, while only 1 patient died in the outpatient setting despite the antibiotic therapy.

Conclusion: This study showed that the early detection and control of infection in lung cancer patients receiving therapy may improve their survival. Recognition of predisposing factors for infections and possible therapy toxicities should be evaluated carefully.

P4196
Evaluation of quality of life in patients with primary and metastatic lung cancer following radiofrequency ablation
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Objective: Radiofrequency ablation (RFA) is an increasingly utilised treatment option for high risk patients with primary lung cancer and metastatic lung disease. We assessed quality of life in patients undergoing RFA for primary and secondary lung cancers at this institution in patients deemed unfit for surgical intervention.

Materials and methods: 55 patients, (42 primary lung cancer and 13 metastatic lung tumours) were entered into the study. One standard instrument was used to measure quality of life, the European Organisation for Research and Treatment of Cancer (EORTC QLQ-C30). An integrated system for assessing health-related quality of life of cancer patients. All questionnaires were performed by a single investigator. All patients were clinically and radiologically followed-up in a standardised way, all questionnaires were collected by a single associate pre treatment and one year post ablation. Data was analysed using the Stata version 10 software.

Results: The EORTC scores were converted into normed values for each function, emotional functioning and global health scales, mean value for each scale was calculated pre and post ablation. There was a reported improvement in all four scales after ablation. The paired t test was used to assess statistical significance of the results. This revealed statistically significant improvement in emotional function (p =0.023) and the global health scales (p = 0.008).

Conclusion: This retrospective study demonstrates that patients undergoing ablation therapy for primary and secondary lung cancer describe overall improved function with statistically significant improvement in emotional and global health scales.

P4197
Is surgical resection of M1a lung adenocarcinoma with metastatic pleural nodules really a useless choice?
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According to a revised 7th TNM classification of NSCLC, malignant pleural nodules are defined as a M1a stage. This study attempts to validate an effect of the surgical resection of a primary lung lesion to the survival of lung adenocarcinoma with metastatic pleural nodules which was not detected on chest CT and PET scan. From 1995 to 2010, we retrospectively investigated in 36 patients who had adenocarcinoma with metastatic pleural nodules. There were no evidences of pleural nodules on chest CT or PET/CT before surgery. Whenever unexpectedly pleural nodules were at surgery, additional surgical resection of the nodules were decided by surgeon. 36 patients of adenocarcinoma were upstaged to M1a because malignant pleural nodules had only "open and closure" ex-ploratory thoracotomy (Non-Surgery group) and 14 patients had surgical resection of a primary lung adenocarcinoma (Surgery group). There were no significant differences of age and FEV1 (%) between Surgery group and Non-Surgery group. The 1-year survival rate of the total 36 patients was 92% (Non-surgery group (86%) vs. Surgery group (100%), p=0.157). The 2-year survival rate was 75% (Non-surgery group (66%) vs. Surgery group (89%), p=0.123). The 5-year survival rate was 26% (Non-surgery group (12%) vs. Surgery group (74%), p=0.011). The median time to progression of the total 36 patients was 14.6±1.3 months (Non-surgery group 4.6±1.0 months vs. Surgery group 39.5±12.7 months). Surgical resection of primary lung cancer would prolong the time to progression and improve the 5-year survival rate in some adenocarcinoma patients with invisible metastatic pleural nodules.
P4198 Determinants of relapse and survival in completely resected non small cell lung cancer
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1Pneumology Department, Centro Hospitalar de São João, Porto do Porto, Portugal; 2Faculdade de Medicina, University of Porto, Portugal.
2Thoracic Surgery Department, Centro Hospitalar de São João, Porto do Porto, Portugal.
Introduction: Lung resection is the treatment of choice in Non-Small Cell Lung Cancer (NSCLC). Besides TNM staging, other features have been reported as significant prognostic factors.
Aim: To analyze factors affecting relapse and survival in NSCLC after complete resection.
Methods: A retrospective study was conducted, including patients with NSCLC completely resected in the last 12 years. Clinical and histological factors were assessed and its influence on survival free of relapse and overall survival was determined.
Results: 160 patients were included, 77.5% male and 22.5% female, with a median age of 65 years. Relapse occurred in 69 patients (median survival free of relapse - 56 months). At univariate analysis, an association was found between reduced survival free of relapse and age ≥ 65 years, clinical tumor size ≥ 4 cm, clinical TNM stage ≥ I B, clinical T ≥ 1, clinical N = 0, pathological TNM stage ≥ I B, pathological T ≥ 2, pathological N = 0 and vascular invasion. At multivariate analysis, tumor size ≥ 4 cm (p = 0.004), pathological TNM stage ≥ I B (p = 0.023) and vascular invasion (p = 0.024) were associated to a reduced survival free of relapse.
Conclusion: Besides TNM staging, other features are important on relapse and survival and should be considered for adjuvant therapy.

P4199 Therapeutic options for operated adenocarcinoma patients in stages I or II
Anastasios Palamidas 1, Sophia - Antiopi Gennimata 1, Fotis Vlastos 1, Nikolaos Koulouri 1, Jean-Michel Vigneaud 2, Nadine Martinet 3.
1Faculty of Medicine, University of Porto, Portugal; 2Faculty of Medicine, University of Porto, Portugal; 3Pathology Service, University Hospital, Geneva, Switzerland.
Introduction: To analyze factors affecting relapse and survival in NSCLC after complete resection.
Methods: A retrospective study was conducted, including patients with NSCLC completely resected in the last 12 years. Clinical and histological factors were assessed and its influence on survival free of relapse and overall survival was determined.
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Conclusion: Besides TNM staging, other features are important on relapse and survival and should be considered for adjuvant therapy.

P4200 Effect of statin therapy in patients with lung cancer on mortality, incidence of infections and pulmonary embolism
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Background: Statins (S) have antiproliferative effects. Aim of this study was to analyze factors affecting relapse and survival in NSCLC after complete resection.
Methods: We studied the association of S use in a retrospective study in 465 pts with first diagnosis of LC. The primary variables were stage and type of LC and S use at time of LC diagnosis and thereafter. During follow-up occurrence of death, infections and pulmonary embolism were recorded.
Results: 91 pts (19.6%) had S, 371 pts not. LC stages were I-IIIA 201 pts (43.2%), IIIB-IV 264 pts (56.8%). Pts with S were older (67.8 ± 9.9 y. vs. 65.2 ± 9.8 y., p < 0.005), had higher BMI, more often diabetes, myocardial infarction and chronic heart failure. Charlson comorbidity index was not different (5.2±2.2 vs. 5.7±2.4, p = 0.08). During follow-up 43% of the pts died. In Kaplan-Meier analysis stage I-IIIA pts with S had lower survival compared with pts without S (log rank test, p = 0.001). However there was no significant difference in pts stage IIIB-IV. In pts < 65 y. survival was longer in pts with vs. without S (1025 ± 588-3977) vs. 604 ± 513-806 days, p = 0.05). In pts ≥ 65 y. there was no difference in survival (493 ± 308-776 vs. 693 ± 555-917 days, p = n.s.). Incidence of severe infections and pulmonary embolism were not different in pts with and without S.
Conclusions: Long-term S therapy seems to reduce mortality in younger LC pts < 65 y., but not in pts ≥ 65 y. In stage I-IIIA pts S associated with worse survival, whereas there is no difference in stage IIIB-IV pts. S do not reduce the incidence of severe infections and pulmonary embolism at follow-up.

P4201 Anaerobic exercise decreases the progression of lung cancer in experimental mice
Renato Pacelli 1, Rodrigo Cal 1, Carlos Santos 1, Anna Moreira 1, Cassiano Neiva 1, Antonio Cardoso 1, Kazuo Nagamine 3, Patricia Cury 2.
1Division of Pneumology, Heart Institute (InCor) School of Medicine, University of São Paulo, SP, Brazil; 2Pathology and Forensic Medicine, School of Medicine of São José do Rio Preto – FAMERP, São José do Rio Preto, SP, Brazil; 3Department of Epidemiology and Public Health, School of Medicine of São José do Rio Preto – FAMERP, São José do Rio Preto, SP, Brazil.
Introduction: Lung cancer is one of the most incident neoplasms in the world representing the main cause of mortality for cancer. Studies have suggested evaluate the effectiveness of the use of the physical activity in the suppression, remission and reduction of the recurrence of tumors.
Objective: To evaluate the effects of aerobic and anaerobic physical activity in the development and associated the progression of lung cancer.
Material and methods: Lung tumors were induced with a dose of 3mg of Urethane/kg, in 67 male Balb - C type mice, divided in three groups: Group 1 - 24 mice treated with Urethane and without any physical activity; Group 2 - 25 mice with Urethane and subjected to aerobic swimming exercise with gradual loading 5 to 6% of body weight. All the animals were sacrificed after 20 weeks.
Results: The median number of lesions (nodules and hyperplasia) was 3.0 for group 1, 2.0 for group 2 and 1.5 to 3 (p = 0.05). When compared only the presence or absence of lesion, there was a decrease in the number of lesions in group 3 compared with group 1 (p = 0.05) but not in relation to group 2. There were no metastases or other changes in other organs.
Conclusions: In this study, the anaerobic physical activity but not aerobic, diminish the incidence of experimental lung tumors.

P4202 Spleenectomy inhibits tumor development and metastases in murine lung cancer models
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Introduction & Aims: It has been shown that inhibitors of the immune system (e.g. myeloid derived suppressor cells) reside in the spleen and inhibit the endogenous anti-tumor effects of the immune system. We hypothesized that excision of the spleen (splectomy) can inhibit growth of relatively big tumors, and reduce metastases by modulating systemic inhibition of the immune system. Our long-term goal is to implement mechanisms elucidated in these studies into future clinical trials.
Methods: The clinical effect of splectomy was evaluated in several murine lung cancer models. We compared immunological properties of blood and tumor after splectomy or sham operation in tumor-bearing mice, using FACS analysis, RT-PCR and specific depletion studies.
Results: We found that splectomy reduces tumor growth, can induce their regression, and decreases metastases. These effects disappeared in NOD/SCID mice. No significant changes in cell types were found in the blood. Spleectomy had the percentage out of total tumor cells of neutrophils (2.4% vs. 4.9%, p=0.012), and macrophages (10.9% vs. 14.4%, p=0.014), which tended to
to be less immune-inhibitory (non-M2/M2 macrophages ratio increased from 3.4 to 12.1, p=0.04). We further noted a tendency to increased activation of CD8+ CTL (19.2% vs. 30%, p=0.09). Tumor microenvironment was found to be more pro-inflammatory following splenectomy (e.g., upregulation of MIG, TNF-α and IFN-γ). Using specific depletion of cells we evaluated the role of each cell in the effect of splenectomy.

**Conclusions:** Splenectomy inhibits the development of tumors and metastases in murine models of lung cancer, by changing the amount and characteristics of myeloid cells.

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Direct medical costs of lung cancer in Oran hospital

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**Objective:** To analyse epidemiological profile of lung cancer and to evaluate expenses inherent in its diagnostic and therapeutic management.

**Methods:** Retrospective study of all cases of lung cancer notified during the period 2004-2008 in our chest clinic. Data concerning epidemiological characters and expenses which take into account, hospitalisation, diagnostic tests and treatment, were kept in an Epi-Info software package (Epi-info, version 6.0).

**Results:** Among 130 cases, 127 were studied. The mean age of our population was 66 years, age more than 50 years represented 80% of cases, 66.7% were male and 33.3% were female. Tobacco smoking concerned 91% of our patients. Thoracic pain represented 20.6% of cases and cough 13% of cases. Frequent localisation of lung cancer was right upper lobar 68% and tumoral extension represented 80% of cases. Histological predominant lung cancer was epidermoide carcinoma with 35% of case followed by adenocarcinoma with 15% of cases. Global cost of hospitalisation was of £157086.86 with a mean cost per patient of £1208.36. Global cost of diagnostic tests was of £13350.71 with a mean cost per patient of £102.69 and global cost of treatment was of £88395.17 with a mean cost per patient of £679.95.

**Conclusion:** Lung cancer management in hospital level remain problematic taken into account tobacco smoking threat and the higher expenses inherent in hospitalisation, diagnosis and treatment of the disease. The interest of a national plan against lung cancer is necessary to improve its management and to rationalize expenses.