Aims and objectives: To evaluate the indices of quality of life after PE depending on sex and age and to determine their dynamics under the influence of warfarin.

Methods: Assessment of indices of quality of life was done in 80 patients who had survived PE during their hospital stay and out-patient treatment using the questionnaire MOS SF-36.

Results: Patients of both sexes taking warfarin after PE showed better indices of physical activity (P<0.05) than those in patients who received no anticoagulant therapy – (25.3±5.9), p<0.05.

Conclusions: Administration of warfarin in the dose of 3-5mg in complex program of therapeutic and prophylactic measures leads to significant increase of absolute values of life quality parameters in accordance with physical and psychic statuses as well as general health being an objective sign of level of adaptation of a person to living conditions in society.

P3878
Thrombophilias in 60 Bulgarian patients with “idiopathic” venous thromboembolism
Natalia Stoeva1, Milena Staneva2,1 Pulmonary Department, Tokuda Hospital, Sofia, Bulgaria; 1Department of Vascular Surgery and angiology, Tokuda Hospital, Sofia, Bulgaria

In the last two decades, many inherited and acquired thrombophilias predisposing venous thromboembolism (VTE) became known. The aim of this real life study is to analyze the frequencies of some thrombophilias in patients with acute VTE, in whom no underlying diseases or triggering-VTE factors are present (“idiopathic”). 60 ethnic Bulgarians (34 men and 26 women, mean age 34.47) with VTE (39 with deep vein thrombosis (DVT) only, 12 with pulmonary embolism (PE) only and 9 with both) were examined for: Leiden mutation (FVL), prothrombin factor II mutation (G20210A), plasminogen activator inhibitor-1 mutation (PAI-1), C677T and A1298C of methylenetetrahydrofolate reductase (MTHFR) mutations; deficiency of protein C (pc), deficiency of protein S (ps), deficiency of antithrombin III (AT III) and antiphospholipid antibodies syndrome (APLS).

In 48 (80%) of patients (79.48% in DVT, 80.95% in PE patients) were found in total 79 abnormalities. FVL heterogeneous mutation was found in 15 (25% of all patients) and homogeneous in 2 (3.3%) patients. FVL represents 21.51% of all found abnormalities. PAI-1 was found in 17 patients and represents 21.51% of all abnormalities. 11 (18.3%) were homogeneous and 6 (10%) were heterogeneous in combination with other abnormalities. 6 (10%) had G20210A mutation and 14 (23%) - deficiency of AT III. We also found deficiency of Pr.S in 6, Pr.C in 3; mutations C677T in 4, A1298 in 7 patients. APLS was found in 5 patients. We conclude that most of the patients with “idiopathic” VTE have one or more thrombophilias. In addition to the known role of FVL, as a thrombophilic factor, the PAI-1 mutation has a prominent frequency in our group.

P3879
The treatment of sub massive pulmonary embolism: Thrombolytic or heparin?
Gulier Okumus1, Mehtap Ertas1, Zuleyha Bingol1, Esen Kiyani1, Ahmet Kaya Bilge1, Halim Issever1, Orhan Arsenen1, Pulmonary Department, Istanbul University Istanbul Medical Faculty, Istanbul, Turkey; 1Cardiology Department, Istanbul University Istanbul Medical Faculty, Istanbul, Turkey; 1Public Health Department, Istanbul University Istanbul Medical Faculty, Istanbul, Turkey

Introduction: Thrombolytic therapy (TT) decreases mortality and morbidity in the patients with massive pulmonary embolism (PE) when compared to heparin therapy. However the use of TT in patients with sub-massive PE remains controversial.

The aim of these studies to compare the efficiency of heparin and TT for sub-massive PE.

Material and method: Patients with sub-massive PE who were treated during the last five years were included in this study. Patients who have significant hypoxemia or expansive thrombosis or proximal DVT were given TT and the others were given heparin. These groups were compared for demographics, risk factors and echocardiography findings (72nd hour, 6th and 12th month).

Results: Totally 39 patients (20 female, 19 male) were included. The mean age was 57 years, the mean duration of follow up was 3.5 years. There was no difference for age, gender, risk factors between TT (n=20) and heparin (n=19) groups. Mean pulmonary arterial pressure (PAP) was 40mmHg in heparin group and 56mmHg in TT group. PAP at 72nd hour was significantly lower in TT group than the heparin group (p<0.001). PAP at 6th and 12th months were still lower in TT group than heparin group but it was not statistically significant. There was no mortality or major bleeding due to the TT or heparin.

Conclusion: As a result of our study TT decreases PAP significantly at 72nd hour in the patients with sub-massive PE so that TT could be the first choice therapy for these patients.
P3880
Dear colleagues: D-dimer is not always necessary – Reduce the cost of your hospitals!
1Janssen Nikola1, Milda Namushi1, Hasan Hazif1, Silvana Balal2, Regina Hasa2
1Internal Medicine, University Hospital “Sh. Ndröqi”, Tirana, Albania; 2Clinical Chemistry, University Hospital “Sh. Ndröqi”, Tirana, Albania

Introduction: Pulmonary embolism (PE) is a major international health problem and may be fatal. Its overestimation may enhance the cost of the hospitals, but underestimation risk the patient’s life as well. D-dimer has high sensitivity but low specificity for detection of PE.

Objectives: To evaluate the effectiveness of D-dimer in patients with PE and its impact in the budget of our hospital.

Materials and methods: This is a retrospective study of 150 patients with PE confirmed by Angio-CT from January - May 2011. All patients of this group had high risk factors, clinical signs of PE and high score in clinical probability according to Geneva and Wells. D-dimer was performed in all of patients.

Results: There were 105 male and 45 female. D-dimer was positive in 102 cases (68%), and negative in 48 cases (12%).

Discussion: The cost of D-dimer for 1 patient in Albania is 216 €, for 150 patients is 1800€. It is evident: in 12% cases D-dimer was negative in patients with confirmed PE. In the other group, the clinical data and high score clinical probability are sufficient as indication for the angio-CT. So, further laboratory examinations, including D-dimer may be avoided, especially in developing countries, where the cost of these tests is high for the hospitals. D-dimer is necessary in low and medium clinical probability cases.

Conclusion: In patients with high risk factors and a clear anamnesis of PE, D-dimer is not necessary. Avoiding it may reduce the hospital expenses.

P3881
Prognostic role of cardiac troponins and simplified pulmonary embolism severity index in patients with normotensive pulmonary embolism
Sazan Ozgu1, Yasin Abu1, Aysin Ozen2, Funda Ozruna1, Yilmaz Bulbul1, Huseyn Yaman3, Tefik Ozlu1. 1Department of Pulmonary, Karadeniz; Technical University Faculty of Medicine, Trabzon, Turkey; 2Department of Biochemistry, Karadeniz; Technical University Faculty of Medicine, Trabzon, Turkey

The new, high-sensitivity troponin T (hsTnT) assay may improve risk stratification of normotensive patients with acute pulmonary embolism (PE). Simple Pulmonary Embolism Severity Index (sPESI) has shown prognostic accuracy. We aimed to investigate whether risk stratification by cardiac troponin testing improves the prediction of clinical outcomes in patients with a sPESI. The primary endpoint of the study was adverse 30-day outcome, defined as death from any cause or nonfatal recurrent venous thromboembolism or nonfatal major bleeding, 18 (14.9%) adverse events within 30 days diagnosis of PE. The sPESI classified 76 patients (62.8%) to the high-risk category (≥ 1 point(s)). Of patients with low sPESI, had hsTnT ≥ 0.014 pg/mL was 14 (53.1%) patients. Low hsPESI and hsTnT < 0.014 had occurs non-fatall hemorrhage in a patient. The adverse event rate rose from 0% in patients with sPESI ≥ 1 or positive hsTnT, and further to 14% in those with hsTnT ≥ 0.014 pg/mL and sPESI ≥ 1. The adverse event rate rose from 1.6% in patients with sPESI ≥ 1 or positive cTnT, and further to 12.4% in those with cTnT ≥ 0.014 pg/mL and sPESI ≥ 1. The adverse event rate rose from 1.6% in patients with a low sPESI but it adds no prognostic information. Risk stratification with the combination of sPESI and cardiac troponin may also serve for aggressive PE treatment strategies.

P3882
Wells clinical prediction rule and pulmonary embolism rule out criteria (PERC) in preventing over investigation of pulmonary embolism in emergency departments
Miwa Aoki1, Naohi Torbeji Sinanoglu1, Nurettin Ozgur Dogan1, Ipek Kivlicik Ogurolgun1, Ahmet Demircan2, Fikret Bildik3, Numan Ekin1
1Pulmonary Diseases, Gaziantep University Medical Faculty, Ankara, Turkey; 2Emergency Department, Gaziantep University Medical Faculty, Ankara, Turkey; 3Pulmonary Diseases, Osmanagazi University Hospital, Çorum, Turkey; 4Emergency Department, Edirne Itisias Training and Research Hospital, Ankara, Turkey

Background: Depending on the worse outcomes of missed diagnosis of pulmonary embolism (PE), unnecessary diagnostic tests are usually ordered to most of the patients with dyspnea or pleuritic chest pain.

Aims: To identify rates and causes of overinvestigation for PE in our emergency department (ED) and to search whether it was possible to reduce this overinvestigation by using Wells score and Pulmonary Embolism Rule Out Criteria (PERC) in daily practice.

Methods: A retrospective observational cohort study performed in an ED of a tertiary care university hospital. 108 patients, who had diagnostic tests with the suspicion of PE, were included in the study.

Results: Among the whole study group, 53 (49%) were diagnosed as PE (+) and overdiagnosis was present in 55 (51%) patients i.e., PE (+). The sensitivity of high Wells score was 43%, specificity 78%, positive predictive value 66% and negative predictive value 59% for PE diagnosis. PERC criteria found to be negative (when all of the 8 criteria were fulfilled) in only 5 (15%) patients. The sensitivity of the test was 98%, specificity 7%, positive predictive value 95%, negative predictive value 98%. When individual parameters of PERC were evaluated solely for the exclusion of PE; “no leg swelling” and “no leg swelling” were found significantly negatively correlated with the diagnosis of PE (p=0.001, r=-0.235 and p=0.003, r=-0.214 respectively).

Conclusion: Over investigation of PE in EDs still remains as an important problem. In order to prevent this, the clinical prediction rules must be developed further or may be used in combination.

P3883
Predictors of poor outcome in chronic thromboembolic pulmonary hypertension
Convyen Liu1, Zhenguo Zhai1, Yuanhua Yang1, Tuguang Kuang2, Wannm Xie1, Chen Wang3,4. 1Respiratory and Critical-care Medicine, Beijing Institute of Respiratory,Medicine, Beijing, China; 2Respiratory and Critical-care Medicine, Beijing Hospital, Beijing, China

Background: Clinical and plasma biomarkers are essential to predict the outcome of pulmonary arterial hypertension (PAH). These markers might also be useful to evaluate the outcome of chronic thromboembolic pulmonary hypertension (CTEPH).

Objective: Assess the cumulative mortality and identify predictors of the patients with CTEPH.

Methods: 108 patients with CTEPH who registered in Beijing chaoyang hospital between January 2006 and October 2011 were analyzed. The primary endpoint is death, and the second endpoint is worsening of WHO functional class.

Results: During the follow-up period (4-58 months), 11 patients died (10.2%), meanwhile WHO functional class of 4 patients was worsen (3.7%). The 1.3-year survival rates were respectivelly 95.1% and 82.1%. BMI (HR 0.798; 95% CI 0.677 to 0.941; P=0.007), leukocytosis (HR 1.346; 95% CI 1.145 to 1.582; P<0.001), ESR (HR 1.043; 95% CI 1.010 to 1.077; P=0.011), cardiac output (HR 0.484; 95% CI 0.243 to 0.962;P=0.039), pulmonary vascular resistance (PVR) (HR 1.002; 95% CI 1.001 to 1.003;P=0.001) were independent predictors for poor prognosis of CTEPH patients. Meanwhile 54 patients with PAH were enrolled, and the 1.3-year survival rates of PAH patients were 78.8% and 59.4% respectively.

P3884
Daytime measurements underestimate nocturnal oxygen desaturations in pulmonary arterial and chronic thromboembolic pulmonary hypertension
Florian Hildenbrand, Konrad E. Bloch, Rudolf Speich, Silvia Ulrich
Heart-Vessel Thorax, University Hospital, Zurich, Switzerland

Background: Nocturnal hypoxemia is important in precarious pulmonary hypertension (pPH) as it worsens pulmonary hemodynamics. Whether daytime oxygen desaturation (SpO2) predicts nocturnal hypoxemia in pH patients has not been conclusively studied. Therefore, we investigated the prevalence of nocturnal hypoxemia in ambulatory pH patients in comparison to daytime SpO2 and disease severity.

Methods: Consecutive patients diagnosed with pH classified as either pulmonary arterial (PAH) or chronic thromboembolic pH (CTEPH) had daytime resting and exercise SpO2 (at the end of 6-minute walk test), thereafter they underwent...
SpO2 was negatively correlated with the tricuspid pressure gradient, but not with functional class, 6MWT and pro-BNP. 

SpO2

Conclusion: Nocturnal hypoxemia is very common in PAH and CTEPH despite often normal daytime SpO2 and reflects disease severity. Nocturnal pulse oximetry should be considered in routine evaluation of PAH patients and research be directed to the treatment of nocturnal desaturation in PH.

P3886

The PESI, the simplified PESI and the shock index for identification of high-risk and low-risk patients with acute pulmonary embolism

Yiye Zhang1, Yafang Miao1, Kehing Cheng1, Xiaoyue Tan1, Jinnmei Liu1. 1Department of Pulmonary Function Test, Shanghai Pulmonary Hospital, Tongji University School of Medicine, Shanghai, China; 2Department of Respiratory Medicine, Shanghai Pulmonary Hospital, Tongji University School of Medicine, Shanghai, China

Background: We investigated the role of protein C (PC) polymorphism in patients with PTE in order to find out the correlation between its polymorphism and the susceptibility of the Chinese population to develop PTE.

Methods: Sixty three consecutive patients with PTE were enrolled as the investigated group and eighty six healthy people as the control group. PC(T) at the position of 2405 and A/G at the position of 2418 in the PC gene promoter region were detected through polymerase chain reaction-restriction fragment length polymorphism analysis.

Results: (1) The results suggested that the genotype frequencies of the two SNPs when combined together were not significantly different between two groups (P > 0.05). (2) The allele frequency of the 2405T SNP was significantly different (P=0.05) when combined together in the active group and control group. The frequency of T allele in the active group was higher. (3) These results suggested that there were six different kinds of genotype distribution (TA - TA, TA - CA, TA - CG, CG - CG, CA - CG, CA - CA) and three different kinds of haplotype (TA, CG, CA).

Conclusions: These results suggest that the two polymorphisms present in the control region of PC gene are associated with an increased susceptibility to PTE in the Chinese population. The 2405T allele may be a possible risk factor for the development of PTE while the C allele may probably be a protective factor of PTE. Moreover, the TA haplotype may also be associated with an increased risk for developing PTE.

P3887

Venous thromboembolism in lung cancer with clinical analysis of 89 cases

Ren Zhu1, Jinnmei Liu1. 1Department of Oncology, Shanghai Pulmonary Hospital, Tongji University School of Medicine, Shanghai, China; 2Department of Respiratory Medicine, Shanghai Pulmonary Hospital, Tongji University School of Medicine, Shanghai, China

Objective: The aim of this study was to investigate the associated clinical factors and to provide evidences for prevention and therapies of VTE in lung cancer patients.

Methods: We retrospectively reviewed the clinical data of 2,053 lung cancer patients with definite diagnosis by cytology or pathology between July 2008 and June 2010 at Shanghai Pulmonary Hospital.

Results: In 2,053 lung cancer patients, 89 were confirmed as VTE. The incidence rate of VTE in adenocarcinoma patients and non-adenocarcinoma patients was 5.65% and 3.02%. The incidence rate of VTE in Stage-I~IIIa lung cancer patients was significantly decrease (1.48%) in comparison to that in stage IIb~IV patients (5.74%). Significant difference of incidence rate of VTE was showed in the patients with or without comorbidities (2.70% and 6.73%, P<0.01). The incidence rate of VTE in pretherapy lung cancer patients with normal value of platelet count, D-dimer, IL-1 and TNF was 3.72%±0.31%,2.44%±3.27%, respectively, whereas, the rate in pretherapy lung cancer patients with high value was 6.26%±0.91%,10.26%±2.96% respectively(P<0.05). There were no relations between other clinical factors and the incidence of VTE. Logistic analysis showed adenocarcinoma, comorbidities, high value of D-dimer, IL-1, TNF in blood were the related important factors with increased VTE incidence.

Conclusions: Adenocarcinoma is the most common pathological type lung cancer patients with VTE. The high risk factors of VTE include comorbidities and increase of D-dimer, IL-1 and TNF in blood. Close attention should be paid to those lung cancer patients with high risk factors of VTE.

P3888

Pulmonary perfusion scan follow-up in patients with acute pulmonary embolism

Juliana Villa1, Roberta Pancani2, Elena Marianci2, Ferruccio Aquilini3, Carlo Marin1, Alessandro Cell1, Antonio Palla1, Carlo-Toracico, Pneumologia Ospedaliera, Azienda Ospedaliera Universitaria Pisana, Pisa, Italy; 2Pneumologia, Fondazione Regionale Toscana Gabriele Monasterio, Pisa, Italy; 3Cardio-Toracico, Pneumologia Universitaria, Azienda Ospedaliera Universitaria Pisana, Pisa, Italy

Introduction: The role of pulmonary perfusion scan in the follow-up of pulmonary embolism (PE) is not clearly known

Aim: To assess the evolution of pulmonary perfusion after a symptomatic acute PE and the role of persistent perfusion defects in assessing the risk of recurrent PE.

Methods: A retrospective analysis (April 2005-May 2010) of patients with symptomatic acute PE for whom a pulmonary perfusion scan follow-up of at least 6 months was available. All scans were read independently by 2 readers whose agreement was calculated by kappa test. Recurrent PE was diagnosed on the basis of the presence of segmental perfusion defects not present at the previous control.

Result: The analysis refers to 252 patients, aged 69±15 years (mean ± SD). The kappa index ranged from 0.84 to 0.98 for the different times. The number of unperfused segments decreased from 5.8±2.8 (baseline) to 2.1±2.0 (6 months, p<0.0001) to 1.7±1.8 (12 months, ns; ANOVA).

After a month from the diagnosis there were 16 recurrences; the number of unperfused segments at the last scan available prior to recurrence did not differ significantly from the number measured at the standard 6 months control in patients without recurrent PE.

Conclusion: After 6 months from acute PE there is a significant reduction in the number of unperfused segments which does not change significantly afterwards. The persistence of perfusion defects is not predictive for the development of later recurrent PE.

P3889

(Contributing factors to) the diagnostic yield of CT pulmonary angiography: A retrospective study

Minke Ale-Lejeune1, Stefan Walen1, Steven M. Uil1, Marijn F. Boomsma1, Jan Willem K. van den Berg1, 1Department of Pulmonary Diseases, Isala Klinieken, Zwolle; 2Department of Radiology, Isala Klinieken, Zwolle, Netherlands

Introduction: Pulmonary embolism (PE) is a potentially life-threatening disease which requires quick and reliable diagnosis to start timely treatment. Clinical probability of pulmonary embolism is assessed by using a combination of Wells-score and D-dimer level. In most cases of PE, CT of pulmonary arteries (CTPA) provides a reliable diagnosis. In the Isala klinieken approximately 1000 CTPAs are performed annually, but its diagnostic yield and factors associated with improving it are unknown. In literature diagnostic yield varies from 5-31%.

Aims: To determine diagnostic yield of CTPA in our centre and factors associated with it. Differences between specialties as well as adherence to protocol were investigated.

Methods: All patients receiving a first CTPA for pulmonary embolism in 2010 were included. Data about relevant clinical information and requesting specialty were retrospectively obtained. Differences in diagnostic yield were tested using a Chi-square test. Independent predictors were identified with multivariate logistic regression.

713s
Thematic Poster Session

Halle A-25 - 12:50 - 14:40

Tuesday, September 4th 2012

P3890
Should there be an age adjusted D-dimer cut-off value in diagnosing pulmonary embolism? A retrospective analysis
David Walder, Robert Richards. Respiratory Medicine, Princess Royal University Hospital, Bromley, Kent, United Kingdom
Previous studies using the enzyme-linked immunosorbent assay (ELISA) D-dimer in pulmonary embolism have suggested that the D-dimer cut-off should be adjusted for age. (Douma et al. BMJ 2010; 340 c1475) Using a retrospective analysis from our DVT clinic we compared latex agglutination assay D-dimer values for patients without DVT in 10 year age brackets (1696 patients). There was a significant D-dimer level rise (compared to under 50 years) with advancing age.

<table>
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<th>50-59</th>
<th>60-69</th>
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<th>80-89</th>
<th>90+</th>
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<tr>
<td>D-dimer Mean (SD)</td>
<td>390 (740)</td>
<td>398 (754)</td>
<td>431 (619)</td>
<td>643 (891)</td>
<td>632 (807)</td>
<td>679 (631)</td>
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<tr>
<td>D-dimer Median</td>
<td>178</td>
<td>188</td>
<td>255</td>
<td>340</td>
<td>469</td>
<td>285</td>
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<td>0.001</td>
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We analysed the data from positive DVTs to look for an age adjusted D-dimer cut-off. (212 patients)

By generating receiver operating characteristics (ROC) curves we calculated 95% confidence intervals and 95% cut-off. (212 patients)

Our data again showed that D-dimer level rises with advancing age. However, with our assay an age adjusted D-dimer cut-off could not be deduced without reducing sensitivity.

P3891
Prognostic value of red cell distribution width in patients with pulmonary embolism
Yasav Ozu1, Yasin Abu1, Selda Gunaydin1, Asim Oren2, Tertik Ozlu 3
1Department of Chest, Karadeniz Technical University Faculty of Medicine, Trabzon, Turkey; 2Department of Biochemistry, Karadeniz Technical University Faculty of Medicine, Trabzon, Turkey
Elevated red blood cell distribution width (RDW) has been associated with adverse outcomes of heart failure and pulmonary hypertension. We speculated that a higher RDW would be independently associated with poor clinical outcomes in pulmonary embolism (PE) patients.

A total of 702 consecutive patients with acute PE were evaluated. We collected each patient’s base-line characteristics including RDW. The primary end-point was all-cause in hospital mortality. Receiver operating characteristic (ROC) analysis was performed to determine the optimal RDW cut-off levels with regard to prognosis. We used logistic regression to assess the association between RDW and time to the time of presentation and inhospital mortality after adjusting for patient (age, clinical and laboratory variables) factors.

There was a graded increase in mortality rate with each RDW quintiles: 5.8% in quartile I (<13.6), 9.7% in quartile II (13.7-14.5), 13.1% in quartile III (14.6-16.3%) and 20% in quartile IV (>16.3%) (p for trends <0.001). Patients who had higher baseline RDW values (16.1% (11.7-28.3)% vs 14.5% (7.6-28.2)% p<0.001). The optimal cutoff value of RDW for predicting inhospital mortality was >15% and the negative predictive value was 93% for mortality. In multivariate regression analysis, RDW remained associated with an increased odds of death.

RDW levels may provide a potential marker to predict outcome in PE patients.

P3892
Angiogenesis in chronic thromboembolic pulmonary hypertension (CTEPH)
Sherin Puthenkalam1, Adelheid Panzenboeck1, Uwe Schubert2, Johannes Jakowitsch1, Klaus T. Preissner1, Robert Voswinckel3, Walter Klepetko4, Irene M. Lang5, 1Department of Internal Medicine II, Division of Cardiology, Medical University of Vienna, Austria; 2Medical School, Institute for Biochemistry, Justus Liebig University, Giessen, Germany; 3Department of Lung Development and Remodeling, Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany; 4Department of Surgery, Division of Cardiothoracic Surgery, Medical University of Vienna, Austria

Background: Chronic thromboembolic pulmonary hypertension (CTEPH) is characterized by organized thrombi in the pulmonary arteries leading to right heart failure and death. In a murine venous thrombosis model we were able to demonstrate that endothelial cell-specific deletion of vascular endothelial growth factor receptor 2 (VEGF-R2)/fetal liver kinase-1 leads to misguided thrombus resolution. Following the hypothesis that CTEPH is based on inadequate thrombus resolution, we studied the role of angiogenesis in CTEPH.

Methods: Fibrotic CTEPH thrombi, their red fresh portions, and unthrombosed pulmonary arteries were collected from patients undergoing pulmonary endarterectomy. Real Time PCR, immunohistochemistry, in vitro 3D angiogenesis and proliferation assays were performed.

Results: Biochemical analyses revealed that angiogenic molecules such as angiopoitin-2, VEGF, basic fibroblast growth factor and markers for endothelial cells (ECs) such as VEGF-R2, von Willebrand factor and VE cadherin were decreased in CTEPH thrombi compared with pulmonary arteries and fresh pulmonary clots. However, homogenized CTEPH thrombi promoted angiogenesis in an in vitro 3D angiogenesis assay, and stimulated the proliferation of human umbilical vein ECs.

Conclusion: Angiogenic molecules are downregulated in fibrotic CTEPH thrombi compared with parent pulmonary arteries and fresh clots. However CTEPH thrombi appear to promote angiogenesis using ECs from healthy donors. Downregulation of genes involved in angiogenesis and lack of functional ECs in CTEPH thrombi may drive thrombus persistence, while the angiostimulatory effect of devascularized thrombi may attract bronchial artery collateralization in the direction of the thrombus.

P3893
Demographics, clinical characteristics, health resource utilization and cost of patients with CTEPH: Retrospective results from six European countries
Bernd Schweikert1, David Pitrow2, Dario Vizza3, Joanna Pepke-Zaba4, Marius Hoepel1, Anja Gabriel5, Jenny Berg6, Mirko Sitić7, 1Life Sciences, OptumInsight, Munich, Germany; 2Institute for Clinical Pharmacology, Technical University Dresden, Dresden, Germany; 3Polyclinico Umberto I, Università La Sapienza, Rome, Italy; 4Pulmonary Vascular Diseases Unit, Papworth Hospital NHS Trust, Cambridge, United Kingdom; 5Clinic for Pneumology, Hanover Medical School, Hanover, Germany; 6GHEOR, Bayer Pharma AG, Wuppertal, Germany; 7Life Sciences, OptumInsight, Stockholm, Sweden; 8GHEOR, Bayer Pharma AG, Berlin, Germany

Objective: To describe demographics, treatment patterns, health resource utilization and related costs of patients with chronic thromboembolic pulmonary hypertension (CTEPH) in 6 European countries.

Methods: We reviewed medical charts from patients diagnosed with CTEPH and treated with medications for pulmonary arterial hypertension (PAH): Endothelin...
receptor antagonists (ERA), PDE-5-inhibitors (PDE5i) or prostacyclin analogues (PA). Demographic and clinical characteristics, medications, and health resource utilization were retrospectively abstracted from patients’ medical records at specialized PH treatment centers from 6 European countries. Resource utilization was valued using country-specific unit costs; descriptive statistical analyses were performed.

**Results:** Twenty-one hospitals documented 119 CTEPH patients over 25.4 months time. Patients were inoperable (83.2%) or persistent after surgery (16.0%) with mean age 67.5±12.1 years, 61% female, 6-minute walking distance 297±119 meters, and NYHA class III/IV in 27/59/14%. At baseline, 59.7% patients received ERA, 34.4% PDE5i, and 5.8% PA. CTEPH patients experienced 1.8±2.2 hospitalizations per year accounting for 14.8±26.1 days in hospital. Annual cost of PAH-specific medication was the predominant economic factor averaging €36,768±22,630 per year. Hospitalization costs (€4,496±€7,923) and concomitant medications (€2,510±€2,503) were lower. Other health care resource items accounted for marginal additional costs.

**Conclusion:** These data show clinical characteristics and cost estimates for CTEPH patients receiving off-label therapy with medications that have been approved for PAH.

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**P3894**

**Clinical characteristics and outcomes of patients with clinically unsuspected pulmonary embolism versus patients with clinically suspected pulmonary embolism**

Michal Shliferberg1,2,3, Yochai Adir1,3, Mintam Segal-Traple6y1,3, Arie Lazor1,2,3, Moshe Vardi1,2,3,1,1 Pulmonology Institute, Carmel Medical Center, Haifa, Israel; 2Internal Medicine Department, Carmel Medical Center, Haifa, Israel; 3the Ruth and Bruce Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel

**Background:** The routine use of multidetector computed tomography (MDCT) has led to increased detection of unsuspected pulmonary embolism (UPE). Our aim was to compare the characteristics and prognosis of patients with UPE to patients with suspected PE (SPE).

**Methods:** We retrospectively reviewed the charts of patients diagnosed with PE in a community-based university hospital between the years 2002-2007. UPE was defined as PE detected on CT scans performed for indications other than PE. We compared patients with UPE to patients with SPE for differences in clinical features, ECG, imaging, and echocardiographic findings. We assessed the long-term outcomes of patients.

**Results:** Of 500 patients with PE, 408 had SPE and 92 had UPE. Patients with UPE were similar to patients with SPE regarding age and sex distribution. Malignancy was more common in UPE patients (39% vs. 23%, p < 0.0006). UPE patients had significantly less tachypnea, dyspnea chest pain, and hypoxemia. Mortality was higher in UPE patients (70.3% vs. 53%, p=0.0029). The mortality hazard ratio after adjustment for age, sex and malignancy was 1.546 (95% CI, 1.139-2.099, p=0.0052).

**Conclusion:** We suggest that UPE is more prevalent in patients with a malignancy and is associated with higher mortality despite a less severe clinical presentation. UPE may be a marker of poor prognosis.

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**P3896**

**Diffusing capacity for carbon monoxide and mortality in patients with chronic thromboembolic pulmonary hypertension**

Rika Suda, Nobuhiko Tanabe, Fumiaki Kato, Hajime Kasai, Takao Takeuchi, Takashi Ushibara, Ayumi Sekine, Rintaro Nishimura, Takayuki Jujo, Toshikiko Sugita, Ayako Shigeta, Seiichiro Sakao, Yusunori Kasahara, Koichiro Tatsumi. Respiriology, Chiba University, Chiba, Japan

**Background:** Diffusing capacity for carbon monoxide (DLCO) reflects the ability of gas exchange across the alveolar-capillary interface and is also used as a marker of pulmonary vascular disease. Recently, Chandra et al. reported that DLCO predicts mortality in patients with pulmonary arterial hypertension. However, there is little data about DLCO in chronic thromboembolic pulmonary artery hypertension (CTEPH).

**Objectives:** The aim of this study is to reveal the correlation between DLCO and other clinical markers and to evaluate DLCO as a predictor of mortality in CTEPH patients.

**Methods and results:** We performed observational retrospective study of 202 consecutive patients with CTEPH (female 69.8%, age 54.6±12.8 yrs., 99 medical, 103 surgical) who underwent both pulmonary function test including DLCO and right heart catheterization from 1986 to 2011 in Chiba University Hospital. DLCO showed correlation with age, NYHA, Hugh-Jones classification, oxygen delivery, PV02, %VC, %FEV1 and 6 minutes walk distance. However, no correlation was shown between %DLCO and mean pulmonary artery pressure, pulmonary vascular resistance, PaO2 and Ao2O2. Among surgically treated patients, there is no difference about operative mortality between normal %DLCO (<70%) group and decreased %DLCO group (<70%) (11.7% vs. 13.3%, p=0.8166). Among the medically treated patients, decreased %DLCO group showed significantly poor survival than normal %DLCO group (5-year survival 69.1% vs. 86.0% p=0.0263).

**Conclusion:** Decreased DLCO was associated with impaired quality of life, pulmonary function, oxygen delivery in CTEPH, and predicted the mortality in medically treated patients.