

Here we present a case of a 34-year old man with PE. Genetic prothrombotic disorders (protein C and S deficiencies, factor V. Leiden mutation, antithrombin 3 deficiency, etc) in this patient were absent, and no occult malignancy was detected. To exclude other differential diagnoses, a chest CT scan was performed, which revealed the agenesis of the inferior vena cava. Chest and abdominal CT angiogram described a complex congenital abnormality of the inferior vena cava, and showed massive venous thrombosis in both common iliac vena, as the site of PE. The thrombosis of the iliac vena was asymptomatic. We conclude that all young patients with extensive or recurrent deep venous thrombosis and/or PE should be carefully investigated with radiological imaging procedures for vascular malformations as well.

**E365****Risk factors for recurrences in patients with idiopathic pulmonary embolism after withdrawal of long-term anticoagulation**

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The optimal duration of anticoagulation (A) in patients after episode of idiopathic pulmonary embolism (PE) is uncertain and probably should be indefinite. However, this strategy is costly, compromises quality of life, and may be hazardous because of risk of bleeding.

To stratify the risk of recurrences (R) after stopping long-term A, we studied 30 patients with idiopathic PE (mean age 62.9 years, range 30-70 years, 10 females, 20 males) in whom A was continued 37.5±23 months (range 12-84 months) after PE episode and was withdrawn when D-dimer level was normal.

Recurrences (R) were found in 6 (20%) patients at 13.5±4 months (range 6 to 24 months) after termination of A. Patients with R had shorter duration of A (p=0.04), greater echocardiographic tricuspid gradient (p=0.02) and acceleration time (p= 0.01) and did not differ with level of D-dimer and CRP at the time of A termination, and with the time spent without A.

In conclusion, a considerable percentage of R in patients with idiopathic PE after withdrawal of long-term A suggests the need for longlife A. If termination of A have to be considered, echocardiographic signs of right ventricular overload and duration of A can be taken into account as risk factors for R in patients with normal D-dimer level.

**E366****Paroxysmal atrial fibrillation as a symptom of pulmonary embolism**

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Diagnosis of pulmonary embolism (PE) remains a great challenge because its symptoms are highly unspecific. Little is known whether PE may be manifested by paroxysmal atrial fibrillation (PAF).

PE was found in 12 (12.2%) of 98 consecutive patients (42 males, 56 females, mean age 66.9 years, range 32-90 years), admitted to Cardiology Dpt from January to December 2004 with the diagnosis of PAF. Among PAF+PE patients there were 8 cases of acute pulmonary embolism (APE) and 4 cases of chronic thromboembolic pulmonary embolism (CTEPH) as confirmed by pulmonary angiography. On echocardiographic study, patients with AF+APE and with AF+CTEPH differed from patients with PAF without PE with greater right ventricle diameter (p=0.002 and 0.001), higher tricuspid gradient (p=0.005 and 0.0001), and shorter acceleration time (p=0.0006 and 0.0003) respectively. Moreover, patients with PAF+PE had significantly better left ventricular systolic function and smaller left ventricle diameter.

After starting anticoagulation, sinus rhythm was restored in 3 patients with PAF+APE, without the need of antiarrhythmic therapy.

In summary, PE should be taken into account in patients presented with PAF, and echocardiography may be of value in reinforcing clinical suspicion of PE in these patients. In some patients with AF+APE sinus rhythm may be restored solely by anticoagulation.

**E367****Pulmonary embolism in noncoagulated patients with chronic atrial fibrillation at admission**

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Chronic atrial fibrillation (CAF), as a procoagulant status, is the main reason of peripheral embolism. However, little is known on its relation to pulmonary embolism (PE).

PE was found in 20 (19%) of 102 consecutive, noncoagulated patients with CAF (52 males, 50 females, mean age 65.1years, range 32-88 years) which were admitted to Cardiology Dpt between January and December 2004. Among PE patients, 12 had acute pulmonary embolism (APE) and 8 had chronic thromboembolic pulmonary hypertension (CTEPH) as confirmed by pulmonary angiography. On echocardiography, patients with CAF+ APE and CAF+CTEPH, as compared to CAF patients without PE, had greater right ventricle diameter (p=0.002 and

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## 32. Pulmonary embolism and hypertension

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**E363****Pulmonary thromboembolism and seasonal variation**

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Pulmonary embolism is an important health problem. The major risk factors are aged, obesity, previous deep venous thrombosis, major surgery, stroke, heart failure, trauma and estrogen treatment. Seasonal variation has been reported for some thromboembolic diseases and pulmonary thromboembolism. However, several investigators have observed no seasonal variation in these diseases.

The aim of our study was to investigate whether a seasonal variation exists for pulmonary thromboembolism. Because of this, 171 patients with pulmonary thromboembolism were determined retrospectively from December 2001 to December 2005 years.

Mean age of patients was 58±16.36 years, 72 were men and 99 were female. The most common symptom was dyspnea (70.8%), other symptoms were lateral chest pain (27.5.3%), chest pain (27.5%), hemoptysis (19.3%). The diagnosis was determined by 72.2% spiral tomography, 16.4% ventilation-perfusion scans and 6.4% clinical. While there was no disease 46 of patients, there were 29 hyper-tensions and 14 cancers. It was presented that 25.7% (44 patients) deep venous thrombosis, 24% surgery (41 patients) and 19.96% (34 patients) immobilization of all cases. Last four years, most of cases belonged April months (20 cases). Although pulmonary embolism was occurred commonly in the spring (45 cases) and autumn (54 cases), this difference was not statistically significant (p=0.09).

**Conclusion:** Contrary to lecture knowledge, there was no seasonal variation of pulmonary thromboembolism.

**E364****Pulmonary embolism with a rare etiology: a case report**

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Pulmonary embolism {PE} is commonly seen in patients with lung diseases. In the past two years, we diagnosed PE in 8 patients <40 years of age. In these patients, oral contraceptive pills, traumatic events, surgical interventions or prothrombotic disorders were considered as etiological factors.

0.0001), higher tricuspid gradient (0.005 and 0.001), shorter acceleration time (0.00006 and 0.0004) respectively. Both CAF+ APE and CAF+CTEPH patients had significantly smaller left ventricle size and better left ventricle systolic function as compared with patients with ACF and without PE.

In summary, PE can be found in substantial proportion of noncoagulated patients with CAF and echocardiography seems to be a valuable method to reinforce suspicion of PE in these patients.

#### E368

##### **Chronic thromboembolic pulmonary hypertension in patients who underwent acute pulmonary embolic event preceded by unrecognised recurrences**

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Recent studies suggest more frequent, than previously reported, occurrence of chronic thromboembolic pulmonary hypertension (CTEPH) in patients who underwent acute pulmonary event (APE). The pathophysiology of CTEPH is not fully established, however, unrecognised recurrences of APE are to be taken into account.

To this end, we assessed echocardiographically 16 consecutive patients with recurrent APE (8 males, 8 females, mean age 74.1 years, range 54-88 years, mean pulmonary artery pressure  $32.8 \pm 8.5$  mmHg, mean angiographic Miller index  $17.4 \pm 7.7$ ) before and after 6 months of anticoagulation.

After study there was no significant changes in pulmonary artery systolic pressure (PASP) as compared to the baseline. CTEPH defined as  $PASP > 40$  mmHg at the 6th month of the study was found in 7(45%) patients. Patients with recurrent APE who developed CTEPH did not differ with the baseline angiographic Miller index, pulmonary hemodynamics and age, but they had a higher PASP ( $50.5 \pm 6.3$  vs  $38.3 \pm 7.9$  mmHg,  $p = 0.005$ ). All the patients with recurrent APE and the baseline  $PASP > 46$  mmHg had  $PASP > 40$  mmHg (CTEPH) at 6 month. CTEPH correlated well with the baseline PASP ( $r = 0.57$ ,  $p = 0.02$ ) but not with other variables.

In summary, a great proportion of patients with APE and a history of unrecognised recurrences developed CTEPH despite 6 months of anticoagulation. Baseline PASP may be of predictive value for such patients.

#### E369

##### **Analysis of risk factors in pulmonary thromboembolism**

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Pulmonary thromboembolism (PTE) is a disease with substantial morbidity and mortality. The mortality of untreated pulmonary embolism is around 25% to 30%, although risk for death is dramatically reduced to 2% to 8% after the proper diagnosis. The diagnosis of PTE remains a major clinical problem. The appropriate evaluation of risk factors relative to PTE could facilitate the diagnosis of this fatal disease. Researchers have shown that various risk factors are directly related to both the diagnosis and prognosis of PTE.

97 patients were diagnosed as PTE by ventilation/perfusion lung scan, computed tomographic pulmonary arteriography or lung magnetic resonance imaging in our hospital from Jun, 2002 to Dec, 2005. Demographic and clinical characteristics were retrospectively studied.

Many risk factors contributed to the likelihood of PTE. 45.4% of the patients had one risk factor, 18.6% of patients had two risk factors and 13.4% of patients had three or more risk factors. Incidence of risk factors was around 77.3% in patients of PTE. All fetal patients had at least one risk factor. The history of Deep venous thrombosis (DVT) or PTE (30% of patients), cancer (19.6% of patients), cigarette smoking (13.4% of patients), long period of immobilization (15.5% of patients) and obesity (10.3% of patients) were high risk factors for PTE. In addition, other risk factors including surgery, cardiac failure, chemotherapy, connective tissue disease and cerebral infarction were also related to PTE, but had less than 10% prevalence of the total patients.

Risk factors could help to suggest the diagnosis of PTE and decrease the mortality of the disease. We should pay attention to possible clinical risk factors associated with PTE.

#### E370

##### **The evaluation of noninvasive diagnosis methods in pulmonary embolism diagnosis together with two different clinical possibility methods**

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Pulmonary embolism (PE) that is potentially fatal diseases should be immediately diagnosed with clinical and other noninvasive methods and treated. Although, clinical signs and symptoms are not specific to this disease clinical suspicion still keeps

its place as a first step in diagnosis. In this study, 77 patients F/M=21/56, mean age=50,79 (24-78 $\pm$ 13,8) who were diagnosed as PE in our clinic were analyzed retrospectively. Clinical probability was assessed prospectively with Hyers score and Wells score was calculated retrospectively. The correspondence of clinical probability with other available tests; ventilation perfusion (V/Q) scintigraphy, Doppler ultrasonography (USG) of lower extremities and spiral computed tomography (CT) were assessed. V/Q scintigraphy was reported as high probability in 14 cases. In these cases, high, intermediate and low clinical probability according to Wells and Hyers score were 20,16,26% and 7,56,33%, respectively.

Among the 68 cases Doppler USG of lower extremities could have been done, deep venous thrombosis was detected in 27 (35%) of cases. In these cases high, intermediate and low clinical probability according to Wells and Hyers score were 30,70,0% and 7,56,33% respectively. Spiral CT was performed to 28 cases and thrombosis was detected in 3 of cases. In these cases clinical probability was intermediate in all cases for Hyers, and one intermediate, two low for Wells.

In conclusion, both clinic scoring systems are useful to clinicians. There is very little difference between scores. And further study is needed on the clinical significance of this difference.

#### E371

##### **Five cases of breast cancer complicated with pulmonary embolism**

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Breast cancer is the most common cancer in women. Breast cancer patients complicated with pulmonary embolism is still a challenge for both the diagnosis and treatment.

This article is to investigate breast cancer cases complicated with pulmonary embolism and analyze the corresponding risk factors, mechanisms and possible prevention and treatments. 5 cases of patients with both breast cancer and pulmonary embolism who were diagnosed during 2000 and 2005 in our hospital were reviewed. The final diagnoses were confirmed by clinic history, symptom and image ways such as CT, MR and ECT.

The risk factors of pulmonary embolism in breast cancer consisted of tumor, surgery, chemotherapy and hormone therapy. Prophylactic measures were needed in high risk patients and include early exercises after surgery, low dose warfarin. Clinic doctors should be alert about the thromboembolic complications in patients with breast cancer. Further understanding of the molecular mechanisms may help to prevent and cure pulmonary embolism in patients with breast cancer.

#### E372

##### **Evaluation of our patient with pulmonary embolism**

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The mortality and the morbidity of the pulmonary embolism (PE), which is an important health problem, decreases significantly by early diagnoses and treatment. Because its clinical signs are not so specific the diagnosis must be based on the evaluation of clinical, radiological and biochemical findings together. Clinical, radiological and biochemical findings of 45 patients, hospitalized in our clinic with the diagnosis of PE, were recorded. Chest radiographs, arterial blood gas (ABG) analyses and D-Dimer in all cases, V/P scintigraphy in 42 (93) cases, lower limb venous doppler ultrasonography (USG) in 29 (64) cases and thorax computed tomography (CT) in 20 (44) cases were obtained. The V/P scintigraphy findings were interpreted by a nuclear medicine specialist according to the PLOPED study. The duration of the symptoms of the 45 cases (M/F: 26/19) aged between 27 to 78 ( $50.3 \pm 15.4$ ) was  $10.5 \pm 10.2$  (1-35) days. An 36 of the 45 cases (80%) there was one or more risk factors. The radiological findings were elevation of hemidiaphragm %82 (37/45), linear atelectasis %76 (34/45) and pleural effusion %49 (22/45). In V/P scintigraphy %64 (29/42) high, %11 (5/42) moderate and %18 (8/42) of the cases were interpreted as low risk group. There was acute or subacute venous thrombosis in %40 (18/29) of the cases detected by Doppler USG. There were high clinical suspect and high blood D-Dimer levels in all the cases who have low or moderate risk according to V/P scintigraphy. The diagnoses were made by doppler USG in 5 cases and thorax CT findings in 3 cases. In conclusion our cases were diagnosed by an algorithm based on noninvasive procedure.

#### E373

##### **Primary prophylaxis against venous thromboembolism in medical in-patients: audit of our practice in a large teaching hospital**

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**Introduction:** 75% of inpatient mortality from venous thromboembolism (VTE) occur among medical patients, though post-surgical VTE receives higher profile. Active primary VTE prophylaxis (SIGN Guidelines: [www.sign.ac.uk/guidelines](http://www.sign.ac.uk/guidelines)) among medical inpatients is not always followed. We audited the compliance within our Division of Medicine with these guidelines.

**Methods:** Case notes and prescription cards of medical in-patients on 9 wards of a large teaching hospital were scrutinised for patient demographics, primary diagnosis, secondary diagnosis and prescription of prophylactic low molecular

Abstract E373 – Table 1: Compliance in each medical ward with the SIGN guidelines for primary VTE prophylaxis

Ward no.	Total no. of beds	Available no. of casenotes	No. of patients who SHOULD have received prophylaxis	No. of patients who DID receive prophylaxis (Group A)	No. of patients who DID NOT receive prophylaxis (Group B)	% Compliance with SIGN guidelines
Ward 1	26	22	14	7	7	50%
Ward 2	28	18	6	2	4	33.3%
Ward 3	30	23	20	5	15	25%
Ward 4	30	22	18	2	16	11.1%
Ward 8	34	21	15	4	11	26.6%
Ward 9	28	23	18	9	9	50%
Ward 10	27	17	14	8	6	57.1%
Ward 11	35	27	13	2	11	15.3%
Ward 12	35	29	18	1	17	5.5%
TOTAL	274	202 (74%)	136	40 (29.4% OF 136)	96	

weight heparin or use of alternative VTE prophylaxis. Study period:13/7/2005 to 22/7/2005.

Patients were categorised to Group A (Received SIGN guidelines-recommended prophylaxis) or Group B (Not received recommended prophylaxis)

**Results & Conclusion:** Of 273 beds on 9 medical wards, 202 (74%) case notes were available. Overall, only 29.4% of eligible patients received the recommended primary VTE prophylaxis (Table: 1). Our compliance with SIGN guidelines needs improving.

### E374

#### D-dimer in diagnosis of pulmonary embolization (PE)

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**Background:** Low specificity of clinical symptoms and signs makes the diagnosis of PE problematic. Each objective examination can increase the probability of right decision in diagnosis of PE. D-dimer (DD) is one of quick and non-invasive tools to improve the probability of right decision.

**Methods:** In 41 retrospectively analyzed patients with suspected PE we examined DD in diagnostic algorithm amongst another procedures (X-ray or CT of chest, ventilation-perfusion scan, duplex ultrasonography of lower limbs veins). Arbitrary decision of physician served as diagnostic standard for purpose of this study. Diagnostic validity and likelihood ratios at various cut-off levels ( $>0.3$ ,  $\geq 1.0$  and  $>1.0$  mg/l) of DD (Nycocard<sup>®</sup> D-dimer test) were determined. Simultaneously the need of diagnostic procedures another than DD was identified.

**Results:** PE was definitively establish in 11 cases. Negative predictive values (NPV) in three cut-off levels of DD values ( $>0.3$ ,  $\geq 1.0$  and  $> 1.0$  mg/l) were as follows: 1.00, 0.79, 0.78, positive likelihood ratios (LR), respectively: near infinity, 10.66, 2.76, negative LR: near zero, 0.09, 0.36. Mean number of diagnostic procedures another than DD were in cut-off  $>0.3$  mg/l (1.18 per patient), while in cut-off  $>1.0$  mg/l, (1.50 per pat).

**Conclusion:** We confirmed that diagnostic validity of DD lies in its high NPV (i.d. in exclusion of PE), the highest one was at lowest cut-off levels of DD in our study. Significantly less number of diagnostic procedures another than DD was used at this lowest cut-off level to confirm diagnosis of PE.

### E375

#### The correlation between the results of spiral computed tomography and lung scan in the diagnosis of pulmonary thromboembolism

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**Background:** Due to some limitations of objective tests, first diagnosis choice for the detection and exclusion of pulmonary thromboembolism (PTE) still remains a challenging problem.

**Aim:** To evaluate the correlation between lung scan (V/Q) and spiral computed tomography (CT) for the diagnosis of PTE.

**Material and Methods:** Patients with PTE in our clinic between January 1 of 2000 and December 31 of 2005 were evaluated retrospectively. Kappa method and Fisher's exact test were used for statistical analysis.

**Results:** Two hundred seventy-three patients (142M, 131F; mean age =  $56.4 \pm 16.4$  years) were analyzed. Among 214 patients to whom V/Q was performed, 160 results were with high probability (74.8%). CT was evaluated in 157 patients, in 103 a thrombus is visualised (65.6%). Ninety-eight patients underwent to both exams. In only 41 cases, positive CT result and V/Q with high probability were together ( $\kappa = 10\%$ ). Among the other 57 patients V/Q was with high probability in only 23 and CT was positive in only 18 patients. Comparing to V/Q; the sensitivity, specificity, positive predictive value and negative predictive value of CT were 64%, 47%, 69%, 41%, respectively.

**Conclusion:** As a result of the comparative analysis between V/Q and CT we conclude that there is no evident correlation between those two non-invasive imaging

techniques often preferred for the diagnosis of PTE. But still the V/Q seems to be initial choice for investigation.

### E376

#### D-dimer in patients with venous thromboembolism who carry hereditary thrombophilia

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**Introduction:** D-dimer (DD) which is a marker of endogenous fibrinolysis increases in patients affected by thrombosis. The negative predictive value of D-dimer in the diagnosis of a recent venous thromboembolism (VTE) episode is well established. Yet, several studies showed increased DD in hereditary thrombophilia carriers, there is not adequate data about the DD levels in carriers with VTE.

**Aim:** To investigate the relationship between DD level and recurrence in VTE patients.

**Materials and Methods:** DD levels of the patients treated and followed-up in our clinic with the diagnose of VTE (hereditary factors carriers) were measured and venous doppler ultrasonography was done. In the patients with a high DD level, the procedure was repeated after three months. For statistical analysis  $\chi^2$  and Fisher Exact were used.

**Results:** In 13 (37%) of 35 patients (14 male, 21 female, age =  $45.3 \pm 16.1$ ) the levels of DD were found high, and there were chronic VTE findings in doppler-USG. In six of the patients with chronic VTE, DD levels were high. In the patients with no clinical complaints and high DD levels, the levels of the DD remained unchanged after three months. In the patients with mean follow-up period of 50 months, there were not any correlation between level of DD, drug usage, additional disease, sex and follow-up period ( $p > 0.05$ ).

**Conclusion:** In our study, DD level was found high in the hereditary factor carriers independent from VTE.

### E377

#### Evaluation of the medical knowledge degree about clinical suspicion of pulmonary thromboembolism (PTE)

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**Introduction:** Pulmonary Thromboembolism (PTE), an elusive diagnosis, is detected by a diagnostic work-up that is often guided by the physician's level of clinical suspicion. The literature shows, in retrospective studies, the accuracy from 70% to 90% of the unsuspected clinic of PTE.

**Aim:** To evaluate the physician's level of ability to accurately assess the clinical likelihood of PTE patients.

**Methods:** A questionnaire survey was performed among physicians of two Brazilian cities: Botucatu (State of São Paulo) and Cascavel (State of Paraná). Besides demographic data the questionnaire presented two case scenarios of high pre-test probability of PTE: case 1 according to Wells score and case 2 according to Geneva score.

**Results:** From the 291 participants, 162 (56%) were clinicians, 101 (35%) surgeons, and 28 (9.6%) gynecologists. Although high pre-test probability of PTE in two cases presented, participants were able to correctly identify a high likelihood of PTE better in the case scenario according Wells score. There were 284 (97.6%) correct answers for case 1 and 113 (38.8%) for case 2. Clinicians presented better performance than surgeons and gynecologists. The clinical experience of 134 (34.7%) participants was less than 5 years and their performance were significantly better than senior doctors. The main misdiagnosis hypothesis were pneumonia and atelectasis.

**Conclusions:** The ability to correctly assess a patient's likelihood of PTE did not increase with a physician's level of experience, suggesting that more senior doctors should be trained in the diagnostic work-up of patients with suspected acute PTE.

E378

**Diagnostic importance of d-dimer at pulmoner thromboemboly and similar clinics**

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It's a frequent difficulty to distinguish PE from other diseases with similar clinics. The increased plasma levels of DD, a specific fibrin derive were defined as a first step examination in diagnostic algorithms at PE. The aim of our study is to examine the diagnostic meaning of DD at PE and to investigate its relationship with the duration of symptom.

For this purpose, a total of 53 patients, 31 of whom are female and the rest are male, were included by the study. PE was verified by thorax computed angiography at 33 patients (age=62,4±18,9). Although clinical PE suspect existed at 20 patients that formed the control group, PE was excluded by TBA. DD levels were determined by ELISA test. DD levels of 3 patients with PE diagnosis were normal, meanwhile the rest of them had levels at high limits. Among 3 patients with normal DD, one of them had PE at main PA level and two of them had PE at lobar PA level and the duration of the symptoms was 19.6±22 days. The symptom period of 30 patients with high DD levels were determined as 3.67±5.4 days.

As a result, when symptom durations are evaluated, being determined high at early period and normal at late period, DD is proved to be an early period characteristic for PE, but not at long symptom period.

E379

**Pulmonary emboli: a rare cause of acute chest syndrome**

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Acute chest syndrome (ACS) is a lung complication in sickle cell disease, whose problem is one of etiology. Vascular occlusion can be due to in situ thrombosis or emboli; this last is rarely a cause of ACS in sickle cell disease.

We report a case of 17<sup>th</sup> year old man with homozygote sickle cell anemia admitted to hospital in clinical picture of acute respiratory failure. He had 10 days history of chest pain, cough, dyspnea and fever. Physical examination revealed a bilateral condensation syndrome, a polypnea with struggle signs. Laboratory results revealed a hyperleucocytosis (44500 ets/mm<sup>3</sup>), an anemia (7,4 g/dl), an hypoxemia (60 mmHg). Chest X ray showed diffuse alveolar opacities with a right pleural effusion. The diagnosis of infectious pneumonia was called up at first and the patient was treated by antibiotherapy, oxygen therapy and controlled hydration. Seven days later, the dyspnea was progressively worsened. Secondary investigations showed extended deep venous thrombosis and floating thrombosis in vena cava inferior, complicated by massive bilateral pulmonary embolism. Echocardiogram was normal. The patient was treated by curative dose of anticoagulant with rapid clinical and biological improvement. ACS in sickle cell anemia is an emergency situation, pulmonary crur emboli remains a fearful etiology which impose a fast and efficient management.

E380

**The diagnostic value of cardiac troponins in pulmonary embolism**

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Pulmonary embolism (PE) is one of the major causes of mortality in hospital. Early diagnosis and quickly treatment have reduced ratio of mortality. It has been thought that cardiac troponins may be useful respect of early diagnosis in PE and especially determining of prognosis. The goal of this study is to evaluate importance of cardiac troponins (cTnT, cTnI) in PE, to determine the role in different diagnosis with pulmonary disease which may caused hypoxemia (pneumonia and asthma exacerbation).

59 PE (group I), 58 asthma exacerbation and pneumonia (group II), totally 117 patients were included in this study. CPK,CK-MB, cTnT and cTnI levels were measured in all patients.

Mean age was 55.04±18.00 and symptom duration was 6.81±7.71days. Physical examination and laboratory findings, smoking and the risk of CAD were similar in both groups. CPK,CK-MB levels were elevated in 7 cases with PE and 5 controls (p>0.05). cTnT was positive at 8 cases in group I and 1 case in group II (p=0.032). Mean cTnI levels were 3.92±2.65 and 3.30±2.93 in group I and II, respectively (p>0.05). Hypoxemia levels were similar at group I and II. In cases with PaO<sub>2</sub> <55mmHg cTnI levels were higher than PaO<sub>2</sub> ≥55mmHg. But the difference was not remarkable. cTnI levels were elevated in 7 cases with massive PE. However there were no relation between clinical severity and elevation of troponin. cTnI levels in PE cases who had pathologic echocardiography findings were higher than normal (p=0.05). There were no correlation between elevation of troponin and severity of defects in V/Q schintigraphy and thrombus in spiral CT. As a result of this study, there was thought cardiac troponins may be useful to determine right ventricle dysfunction in PE.

E381

**Results of dynamic follow-up of patients after idiopathic pulmonary embolism (PE)**

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**Aim:** to evaluate the frequency of the recurrence of idiopathic PE after warfarin withdrawal.

**Materials:** Fifty three patients after PE without evidence of predisposing conditions such as surgery or oncology have been followed up for 1 year. All the patients received warfarin therapy which has been stopped in 6 months. Then the patients have been followed up for 6 months. Diagnostic methods included clinical examination, perfusion lung scintigraphy and Doppler echocardiography before and 6 months after warfarin withdrawal. The laboratory examination have also been performed to identify thrombophilia.

**Results:** Laboratory examination showed the evidence of risk factors for thrombophilia in 17 patients (32% - group 1) and the absence of this factors in 36 patients (group 2). Hyperhomocysteinemia was the most frequent finding (10 patients). Clinical evidence of PE recurrence was observed in 2 (12%) patients of group 1 and no patients in group 2. Negative changes such as new perfusion defects on lung scintigram without clinical signs of PE recurrence have been found in 8 (47%) patients of group 1 and 4 (11%) patients of group 2. There were no significant changes of hemodynamic parameters.

**Conclusion:** Patients with thrombophilia who have received 6 month course of warfarin therapy still have high risk of PE recurrence which may be asymptomatic.

E382

**Paragonimiasis an unusual cause of cor pulmonale**

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Paragonimiasis is a parasitic disease of the caused by the trematode Paragonimus (lung fluke). Infection follows ingestion of raw or improperly cooked or pickled crab and crayfish. Adult worms can survive for 20years.

A 42-year old rural dweller was seen at the Chest unit with a three month history of cough, chest pain and hemoptysis and a ten week history of bilateral leg swelling. He recalled that his problem dated back to 18years ago when he first had cough with rusty brown sputum and chest pain. He was treated for pulmonary tuberculosis even though sputum examination did not reveal any AAFB on two occasions. Further enquiries showed that he had enjoyed fishing and hunting for crabs in his adolescent years and ate the young crabs raw. Abnormal findings were mild central cyanosis, pitting leg and scrotal edema jugular venous pulsation was elevated with tender hepatomegaly. Investigation: sputum for ova of paragonimiasis which was positive, packed cell volume of 55%, ESR 15% Chest radiograph: patchy opacities, tubular shadowing and prominent pulmonary conus. Echo: dilated Right Atrium and Ventricle without septal and valvular lesions. Sputum AAFB, A diagnosis of Cor Pulmonale due to Paragonimiasis was made and patient treated with Praziquantel. The patient improved markedly and repeat Xray showed some improvement in the features. Paragonimiasis is an important tropical lung disease. The most frequent symptoms are cough and hemoptysis. The radiological features include cavities, cysts, calcified nodules all of which make differentiation from Pulmonary tuberculosis difficult. In endemic areas, patients who complain of cough and hemoptysis should have their sputum examined by an experienced microbiologist for paragonimiasis.

E383

**Are the thromboembolic venous disease prophylaxis guidelines and consensus recommendations being actually followed by physicians at general hospitals?**

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Thromboembolic venous disease comprises deep venous thrombosis and pulmonary embolism. It is an important clinical condition that can lead to well-known complications; on the other hand, different studies have consistently shown that it can be effectively prevented. However, recent reports show that prevention is not being correctly performed.

Critically selected medical and surgical inpatients hospitalized in July and August 2005 were studied. We performed review of the medical registers, collecting relevant data for risk determination. The measures adopted as thromboembolic venous disease prophylaxis for each patient were also recorded, and were then compared to the recommendations of the latest guidelines published.

One hundred and ninety-four cases were studied. A significant part of the inpatients exhibited predisposing conditions and a high risk for the development of thromboembolic venous disease. However, only about half of them received correct preventive measures for the disease. The most frequently prescribed regimen was enoxaparin.

The authors conclude that despite its proven efficacy, thromboembolic venous disease prophylaxis is being inadequately performed at the institution.

## E384

**A point-of-care brain natriuretic peptide assay in the risk stratification and management of patients with pulmonary arterial hypertension**

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Although Brain Natriuretic Peptide (BNP) levels correlate well with prognosis in patients with left ventricular dysfunction, BNP's role in Pulmonary Arterial Hypertension (PAH) is understudied, despite the critical role of the right ventricle (RV) in PAH. We hypothesized that a BNP point-of-care assay might be important in the noninvasive assessment of PAH patients. We followed 51 patients with PAH (age  $50 \pm 2.3$ , female 71%) for 24 months. BNP levels in PAH patients ( $362 \pm 63$  pg/ml) were compared to those from 22 age/sex-matched healthy volunteers ( $9 \pm 2$  pg/ml). ROC analysis revealed that a cut-off value of 30 pg/ml has 90% sensitivity and 100% specificity for PAH diagnosis. BNP levels correlate negatively with 6-minute walk (6mw,  $p < 0.0001$ ) and positively with right atrial pressure (RAP,  $p < 0.0001$ ), pulmonary vascular resistance (PVR,  $p < 0.008$ ) and RV mass & volume ( $p < 0.0001$ ). Univariate analysis showed that sex, age, PA pressure do not predict outcomes (death,  $n=7$  or urgent transplantation,  $n=2$ ), in contrast to 6mw, RA, PVR and BNP. In a multivariate model (Cox-regression analysis), only BNP and 6mw predicted outcome. When analyzed in terms of 50 pg/ml-increments, the hazard ratio for BNP was 1.11 (CI=1.002-1.22), i.e. for every 50 pg/ml increase in baseline BNP level, the risk for death/urgent transplantation increases by 11%. Decrease in BNP levels correlated well with decrease in PVR and increase in 6mw following treatment with sildenafil or endothelin receptor antagonists. Point-of-care BNP levels are useful in the risk stratification and follow-up of PAH patients and their use as a hard end-points in clinical research is indicated.

## E385

**Practice of thromboprophylaxis in teaching hospitals in Iran**

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The American College of Chest Physicians (ACCP) published their seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy in 2004, with recommendations for venous thromboembolism prophylaxis (Geerts, W.H. et al. Chest 2004; 126:338S-400S). Other similar guidelines are published (Nicolaidis, A.N. et al. Int Angiol 2001; 20:1-37). Despite these recommendations, appropriate thromboprophylaxis is underused.

**Objectives:** To examine the frequency and adequacy of thromboprophylaxis in hospitalized patients in three primary-tertiary teaching hospital in Urmia city, Iran.

**Methods:** We carried out a cross-sectional prospective study of 436 patients hospitalized in the three teaching hospitals of Urmia, Iran. Information was abstracted from medical, nursing records and observing patient. This was compared with the recommended guidelines of the ACCP.

**Results:** Of study group, 352 patient required thromboprophylaxis and the total proportion of them who underwent some form of thromboprophylaxis was 16.7% with only 9.9% receiving ACCP recommended prophylaxis. Prophylaxis rate was: 29.7% in medical wards, 27.8% in ICU, 11.0% in surgical wards overall and 14.7% postoperatively. Low dose heparin was the most common type of prophylaxis.

**Conclusions:** Despite widely disseminated, evidence-based recommendations, venous thromboembolism prophylaxis is underused in our hospitals. It is more common neglect in our than western countries hospitals. We think that in most other developing countries the condition is similar. So consensus statements alone are insufficient to ensure the routine use of prophylactic strategies in clinical practice. In addition to statements other strategies are required to solve the problem.

## E386

**The prevalence of hyperhomocysteinemia in venous thromboembolism**

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**Objectives and Aim:** Hyperhomocysteinemia is a rare inherited metabolic disease. Arterial and venous thromboembolic events represent frequent and life-threatening complications in hyperhomocysteinemic patients. The data on the prevalence of hyperhomocysteinemia in the Turkish population of VTE has not been completely known. The aim of this study is to investigate the prevalence of hyperhomocysteinemia in the patients diagnosed with acute venous thromboembolism (VTE).

**Materials and Methods:** 93 patients with proven VTE (group 1) who admitted to our centre were included to the study. 23 healthy subjects (group 2) were included as the control group. Demographics, the serum homocystein, vitamin B12 and folic acid levels were recorded and compared in both groups.

**Results:** 59 men and 34 women are included in group 1. The mean age in group 1 and group 2 were  $53.81 \pm 17.26$  and  $52.39 \pm 18.57$  years respectively. The serum homocystein levels of group 1 was  $21.48 \pm 12.84$   $\mu$ mol/L. and group 2  $16.34 \pm 8.12$   $\mu$ mol/L. The normal range of homocystein level was established as 5-18  $\mu$ mol/L. The homocystein level of group 1 patients was significantly higher than group 2 ( $p=0.02$ ). By the increase of the age the homocystein level was also elevated ( $p=0.006$ ). Vitamin B12 and folic acid levels were similar in both groups ( $p > 0.05$ ).

**Conclusion:** It is concluded that hyperhomocysteinemia is a risk factor for thrombosis in Turkish VTE patients.

## E387

**Sudden death due to pulmonary embolism with multiple myeloma and mechanism: an autopsy case report**

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We encountered a patient with multiple myeloma who died suddenly, in whom bilateral pulmonary artery thrombosis was found at autopsy. The patient was a 63-year-old woman who was transferred to our hospital due to chest pain, cough and fever for a week. The patient had been well until a week before admission. In the first hospital day, she developed sudden dyspnea, became markedly cyanotic, lost consciousness, and then suffered a cardiopulmonary arrest. Autopsy revealed bilateral pulmonary artery fresh thrombosis as well as thrombosis in renal arterioles, right common iliac vein, left external iliac vein, old thrombosis in left arterial descending coronary artery, and right coronary artery. Multiple myeloma lesions in skull and ribs were found. Hypercoagulability and decreased fibrinolytic capacity due to multiple myeloma were the probable causes multiple thrombosis. We report a rare case of bilateral pulmonary artery thrombosis based on multiple myeloma and led to sudden death.