ciated with substantial morbidity and mortality. Because protein C (PC) play an essential role in regulation of thrombin activity, we investigated the role of PC polymorphism in patients with pulmonary thromboembolism. One hundred and ten cases of PTE and one hundred and ninety healthy control in Chinese Han population were genotyped for three polymorphisms (-1654C/T, -1641A/G and -1476A/T) of PC promoter. Using Binary logistic regression analysis, genetic risk factor, which was homozygous carriers of genotype TT (the SNP site -1654C/T) of the PC gene, and conventional risk factors ("operation and trauma" and "operation and trauma") were independent predictors of the development of PTE. PC gene SNPs (-1654C/T, -1641A/G and -1476A/T) in control region are probably associated with the susceptibility to PTE in Chinese Han population. The homozygous carriers of genotype TT of -1654C/T was significantly associated with the outcome of PTE, which together with "operation and trauma" and "operation and trauma" were have a great risk of developing serious PTE.

412. Prediction of pulmonary thromboembolism

P3932

Late-breaking abstract: Significant association between protein C promoter region polymorphism and susceptibility to pulmonary thromboembolism in a Chinese Han population

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Pulmonary thromboembolism (PTE) is a common clinical problem that is asso-

P3933

Biochemical predictors of pulmonary embolism

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Introduction: Various biochemical and radiological tests have been studied in recent years for an accurate and early diagnosis of pulmonary embolism (PE). As well as D-dimers, Troponin level has been noted to be raised in confirmed PE.
Aim: To study routine biochemical test results as predictors of PE.
Method: Routine biochemical results of all patients investigated with a computed tomography pulmonary angiogram (CTPA) for suspected PE at our 960 bed university hospital from February 2008 to January 2009 were analysed.
Results: Of the total of 666 CTPAs performed, reports and routine blood results for 576 patients were collected and analysed:

Biochemical Predictors of PE

		CTPA – PE	CTPA – No PE	p-value
pH	Total No	53	279	NS
	Mean (SD)	7.44 (0.06)	7.43 (0.08)	
Hb (g/dL)	Total No	80	451	NS
	Mean (SD)	12.2 (2.1)	11.7 (2.0)	
WCC ($\times 10^9$/L)	Total No	80	451	NS
	Mean (SD)	10.5 (4.5)	11.1 (5.9)	
Platelets ($\times 10^9$/L)	Total No	21	451	NS
	Mean (SD)	342.8 (128.4)	310.5 (163.4)	
Urea (mmol/L)	Total No	79	454	0.01
	Mean (SD)	8 (5.3)	6.8 (3.8)	
Creatinine (μmol/L)	Total No	79	454	NS
	Mean (SD)	101.8 (74.4)	89.3 (65.3)	
Albumin (gm/L)	Total No	61	352	NS
	Mean (SD)	32.7 (6.8)	32.4 (6.6)	
CRP (mg/L)	Total No	70	393	NS
	Mean (SD)	99.4 (116.4)	79.9 (91.6)	
D-dimer (μg/L)	Total No	42	225	NS
	Mean (SD)	1.41 (2.0)	1.47 (3.4)	
TroponinT (ng/L)	Total No	26	132	NS
	Mean (SD)	0.03 (0.04)	0.14 (1.021)	

Discussion: Our results may have been influenced by some patients having other significant pathologies and by the fact that not all patients had all the blood tests done. An elevated D-dimer was not found to be significantly associated with a diagnosis of PE in our study. Troponin and CRP also had no diagnostic significance. Raised Urea, integral to the severity scoring in community acquired pneumonia, was, however, significant.

P3934

The frequency of chronic thromboembolic pulmonary hypertension and associated risk factors

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The incidence of chronic thromboembolic pulmonary hypertension (CTEPH) are yet to be accurately evaluated and may be significantly underestimated.
The study enrolled 325 consecutive patients with acute pulmonary thromboembolism (PTE). In all patients PTE were diagnosed objectively and the mean follow-up was 16.3 months (range, 6-50.7 months). Outpatient visits and hospitalization records of all patients were examined.Especially, data on recurrence, mortality and CTEPH were collected. Symptomatic patients were investigated for CTEPH with echocardiography, lung perfusion scintigraphy and CT angiography according to proposed algorithms in updated guidelines of pulmonary hypertension. The frequency of symptomatic CTEPH was 4.6% after the first episode of PTE. Symptomatic CTEPH were established in 37.5% of the patients who have a history of proven PTE and in 6.2% of the patients with previous isolated DVT. The percentage of patients with residual chronic thrombus was 48% at 3 months, 27.4% at 6 months, and 18.2% at 12 months after the diagnosis of PTE. There was significant relationship between recurrence and presence of residual thrombi

after 3 months. At the time of acute event; a systolic pulmonary artery pressure (sPAP) >50 mm-Hg, presence of widespread thrombus, history of previous VTE, idiopathic PTE and high uric acid levels were associated with increased risk of developing CTEPH in univariate analysis. In multivariate analysis, sPAP> 50 mm-Hg was found that 10-fold increased for CTEPH.
As a serious complication CTEPH develops in an important part of the PTE patients. Especially, closer monitoring of high risk patients is important for early diagnosis and treatment.

P3935
Prediction of pulmonary embolism in the pneumology departments: Clinical prediction rules
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Background: Diagnosis of pulmonary embolism (PE) requires clinical probability assessment. In recent years, a great number of clinical prediction rules have been issued.
Objective: To evaluate the effectiveness of the Geneva and the Revised Geneva score in PE diagnosis in pulmonary departments.
Patients and methods: A retrospective study of 53 consecutive patients admitted for clinically suspected PE. We evaluated the clinical probability of PE for all patients for whom a CT pulmonary angiography (CTPA) was performing. Patients were divided into 2 groups: Group 1 (G1: n = 25) with no confirmed PE, the second group (G2: n = 28) with confirmed PE.
Results:

Table 1. Clinical prediction of pulmonary embolisme in pneumology departments with 3 differents rules

	Low probability		Moderate probability		High probability		P
	G1	G2	G1	G2	G1	G2	
Geneva score	42,3%	37%	53,8%	33,3%	3,8%	29,6%	0,01
Revised Geneva score	19,21%	7,4%	76,9%	70,4%	3,8%	22,6%	0,05
Revised Geneva score with COPD	19,20%	7,4%	73,1%	66,71%	7,7%	25,9%	0,07

When another variable was associated such as COPD (2 points) in the Revised Geneva score, the score became moderate in 66,7% and high in 25,9% both in G2.
Conclusion: In pulmonary practice, a scoring system with other variables as if COPD, lung cancer, should be introduced and would help safety excluded PE. A prospective study is necessary.

P3936
Age is a major risk factor of venous thromboembolism (VTE)
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Introduction: Age is a major risk factor of developing a first episode of VTE; however, the impact of age on the risk of recurrent VTE remains controversial.
Method: In a prospective cohort of 607 patients with a first episode of proximal deep vein thrombosis of pulmonary embolism, we aimed to evaluate if age of VTE was an independent risk factor of recurrent VTE. The role of other risk factors was analyzed: sex, the clinical presentation as PE or proximal DVT, the presence or the absence of provoking risk factors, factor V Leiden (FVL) and prothrombin gene mutation (PGM) was analyzed. All the episodes of first VTE and recurrent VTE were diagnosed according to predefined, validated and standardized criteria.
Results: During of a mean follow-up of 36 months, 95 (15.6%) patients had recurrent VTE. In multivariate analysis, for each year that the patient was older, the incidence of recurrent VTE increased by 3.0% (OR=1.03; 95%CI [1.01-1.05], p<0.001); when age of patients was divided into quartiles, the relative risks of VTE were as follows: [64-74 years]: OR=2.9; 95%CI [1.3-6.9]; [75-99 years]: OR=3.1; 95%CI [1.3-7.5], p=0.01; quartile of reference [18-44 years]. Men and women had similar risks of recurrence, excepted women who had VTE in association with hormonal change (contraception, pregnancy or hormonal substitution treatment): OR=0.2; 95%CI [0.1-0.4] p<0.0001). FVL and PGM were not associated with an increased risk of recurrent VTE (OR=1.1; 95%CI [0.5-2.1]; p=0.9).
Conclusion: Age is a major independent risk factor of recurrent VTE.

P3937
Improving the diagnostic yield of PE using the BTS pathway: The experience of a UK district general hospital
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In 2003, the British Thoracic Society developed an algorithm for investigating PE, based on risk stratification (low, intermediate and high), selected D-Dimer use and Computed Tomography Pulmonary Angiography (CTPA). For low and intermediate patients a negative D-Dimer is reliable in excluding PE, avoiding unnecessary irradiation. Despite this, the positive diagnostic yield within our organisation remains below 25%. To understand this low yield, we carried out a retrospective analysis of medical patients who underwent CTPA during November 2010.
Method: The medical records of all patients admitted with suspected PE who underwent CTPA were analysed. Each patient's risk was retrospectively scored according to BTS guidance and adherence to the BTS diagnostic pathway was noted.
Results: 37 patients underwent CTPA; 15 low, 14 intermediate and 8 high probability. 7 had PE (total 19%): 1 low (7%), 3 intermediate (21%) and 3 high probability (38%). A total of 5 low and intermediate patients did not have a D-Dimer before CTPA despite this being indicated. Of these, 4 did not have PE. Additionally, 3 intermediate patients underwent CTPA despite a negative D-dimer; none had PEs. 10 had no documented clinical features of PE (e.g. tachypnoea, tachycardia, hypoxaemia, shock, signs of right ventricular strain or unilateral leg swelling). 4 low and 5 intermediate probability patients had abnormal chest x-rays which retrospectively accounted for their symptoms (36%). In total, 18 patients (49%) followed a diagnostic route deviating from the BTS pathway.
Discussion: Our study suggests that adherence to BTS guidance may improve diagnostic rates for PE and reduce the number of inappropriate CTPAs.

P3938
Clinical presentations of pulmonary embolism in young adults
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Pulmonary embolism (PE) is considered an age related disease and clinical observations are directed predominantly towards older patients. Our study examines clinical presentations of PE in young (under 40 years) adults. We retrospectively analyze 133 adult patients hospitalized in Tokuda Hospital Sofia for the period Feb 2007 to Jan 2011 in whom PE was diagnosed by multidetector computer pulmoangiography. 24 (18%) of them are under 40 years. We analyze this group (young group) and compare it to the group of patients older than 40 (old group). All patients of the young group are white race, and are ethnic Bulgarians. 19 (79.2%) are men and 5 (20.8%)- women (vs.55males-50.4% and 54females- 49.65% in the old group). 4/24 patients have previous surgical intervention, and 2/24- underlying diseases. The other 18/24 (75%) have no triggering events. 16/24 were examined for inherited and acquired thrombophilias and in 13 (81%) thrombophilias were found (3 with Plasminogen activator inhibitor mutation, 2 with Leiden mutation, 1 prothrombin gene mutation, 4 with combined heterogeneous mutations, 2 with pr.S deficiency and 1 with antiphospholipid antibodies). Mean Wells probability score is 5.24±1.7 (4.21±2.58 in old group; p=0.02); mean revised Geneva score is 8.41±3.91 (vs. 8.62±3.93, p=0.738); 11/24 (45%) have concomitant US-confirmed DVT (vs. 41%). More than half (54%) have massive PE, understood as involvement of more than 50% of pulmonary circulation. In our study PE in young adults in most cases arises spontaneously, is due to inherited and acquired thrombophilias, and affects more men than women. Using the Wells probability score, PE in young adults is more easily recognizable than in older adults.

P3939
The potential benefits of outpatient investigations of suspected pulmonary embolism (PE)
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Background: Computed Tomography Pulmonary Angiography (CTPA) is the recommended investigation for non-massive pulmonary embolism (PE) and guidelines suggest outpatient management in stable patients with PE' [1]. Outpatient investigation of such patients may also be potentially possible.
Aim: To ascertain the proportion of patients admitted to our hospital with suspected PE that could potentially have been investigated as outpatients.
Methods: Retrospective analysis of all CTPAs performed over an 8-week period from December 2009 in a UK university teaching hospital.
Results: 198 CTPA scans were performed. PE was confirmed in 30 (15.2%). The mean time period of inpatient stay before obtaining their CTPA was 5.5 days (SD 6).

Table 1

	Time from admission to CTPA		
	≤48 hours	72–96 hours	>96 hours
Number of patients, n (%)	76 (38%)	52 (26%)	70 (35%)
Confirmed PE, n (%)	9 (5.5%)	11 (6%)	10 (5%)

Table 2

	Time from CTPA to discharge		
	≤48 hours	72–96 hours	>96 hours
Number of patients, n (%)	51 (26%)	22 (11%)	125 (63%)
Confirmed PE, n (%)	1 (0.5%)	3 (1.5%)	26 (13%)

51 (26%) patients were in hospital for <48 hours post investigation, only 1 of whom had confirmed PE.
Conclusion: A careful assessment to identify patients that can safely have an outpatient CTPA and decreasing time to scan for in-patients would increase efficiency.
A 20% reduction in time from admission to CTPA would result in an annual saving of 1290 bed days (approximately £410,000).
If we postulate that patients discharged ≤48 hours post CTPA were well enough to have been investigated as outpatients, doing so would have saved at least 288 bed days over 8 weeks, equating to 1728 bed days (£540,000) over a year.
Reference:
[1] British Thoracic Society PE Guidelines 2003.

P3940
Hyperglycemia as a independent predictor of mortality in acute pulmonary embolism
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Introduction: Acute pulmonary embolism (APE) is a life threatening disease and one of the main causes of in-hospital mortality. Hyperglycemia secondary to diabetes mellitus, impaired glucose tolerance or stress-induced, occurs frequently in critically ill patients and is associated with adverse outcome. The relationship between hyperglycemia and outcome in APE patients has not been clearly defined.
Aim: The purpose of the study was to determine the association between hyperglycemia and risk - adjusted mortality in APE patients.
Methods: We conducted a prospective, cohort study, between 1 January 2004 and 31 December 2009. The patients with APE, admitted in the Ist Medical Cardiology Clinic, in "St Spiridon" University Hospital, Iasi were included. Hyperglycemia was defined as an admission or in-hospital fasting glucose level of 126 mg/dl (7 mmol/liter) or more or a random blood glucose level of 200 mg/dl (11.1 mmol/liter) or more on 2 or more determinations.
Results: During the study period, we enrolled 326 patients with APE. Mean age of the patients was 62.3 years (range 16 - 95 years), 197 (60%) were females, 30 (9%) were in shock at admission and 36 (11.04%) had diabetes mellitus diagnosis before admission. Fifty seven patients died during hospital stay (17%). Multivariable analysis showed that hyperglycemia was an independent predictor for in-hospital mortality in APE patients (p<0.05).
Conclusion: Hyperglycemia is an independent predictor for in-hospital mortality in APE.

P3941
Assessment of pulmonary embolism severity index, D-dimer, cardiac biomarkers and multi detector computed tomography findings in patient with pulmonary thromboembolism
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PTE should be evaluated with its clinical, radiological and laboratory findings in order to diagnose. Our aim was to determine the relationship between PESI, cardiac biomarkers and CT findings.
75 cases were diagnosed as acute PTE between September 2009-December 2010. Cases were grouped as nonmassive (group 1: 35), submassive (group 2: 27), massive (group 3: 13) PTE. Three groups were compared in term of PESI, cardiac biomarkers, CT findings (RV/LV ratio-pulmonary vascular obstruction score (PVOS))
Mean age was 58,8 (29-94). PESI (mean±SD) was 78,17±27,66 in group 1, 102,7±34,4 in group 2, 139,9±36,25 in group 3 (p< 0,05). 71,4% of patients in group 1 were classified into PESI class 1-2 wheras 100% of patients in group 3 were classified into PESI class 3-5 (p<0,001). D-dimer (mean±SD/(μg/dl)) was 2998,48±1821,86 in group 1, 3976,88±1873,53 in group 2, 4600,38±2112,28 in group 3 (p< 0,05). ProBNP (mean±SD/(pg/ml))was 137,5±22 in group 1, 3904±1399,25 in group 2, 7901±6689 in group 3 (p<0,05). RV/LV ratio (mean±SD) was 0,85±0,12 in group 1, 1,13±0,30 in group 2, 1,40±0,5 in group 3 (p<0,001). PVOS (mean±SD/(%)) was 18±11 in group 1, 33±16 in group 2, 40±7,7 in group 3 (p< 0,001). PVOS was smaller than 30% in 82,9% of group 1 cases wheras it was higher in 92.3% of group 3 cases (p<0,001). There was a weak positive correlation between PESI and D-dimer (p<0,05), RV/LV (p<0,001), PVOS (p<0,001). A strong positive correlation was found between PESI and pro-BNP (p<0,001).PESI has a significant correlation with CT findings and cardiac biomarkers which are D-Dimer and pro-BNP.

P3942
Improvement of thromboprophylaxis by attaching printed thrombosis risk assessment tool and recommendations to patient's hospital charts
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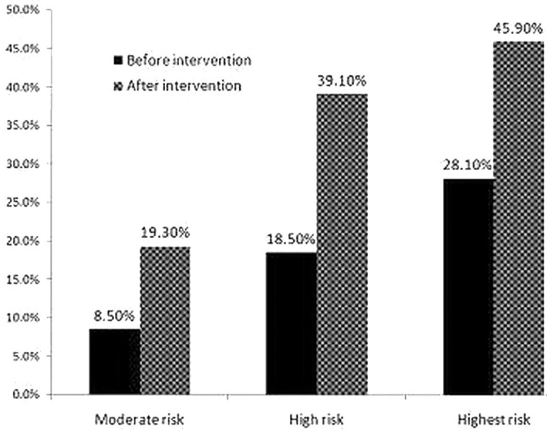
Evidence suggests that venous thromboembolism prophylaxis (VTEP) is still significantly underused. Studies showed that computerized reminders have resulted in increased rates of VTEP *(Kucher N, N Engl J Med 2005)*. However, this system is not available in most hospitals especially in developing countries. We hypothesized that attaching written guidelines to patients hospital charts during admission would act as reminder and would increase VTEP.
Methods: This pre and post-interventional study included three phases: 1. Baseline survey of VTEP using Caprini thrombosis risk assessment tool and recommendation (CTRT) *(Caprini JA. Dis Mon 2005)* phase 2. Over the following nine months we attached a printed CTRT to patients hospital chart. 3. We reevaluated VTEP similar to phase 1 during next 3 months. Setting: surgery wards in teaching hospital, Urmia, Iran.
Result: Any type prophylaxis was 20.0% before and 37.6% after intervention (p value <0.001). Appropriate prophylaxis was 19.1% before and 33.8% after intervention (p value <0.001). VTEP rate in risk groups is shown in the figure.



Conclusion: A simple intervention can improve VTEP rate in setting that electronic alert is not available. VTEP is underused despite improvement still there is high gap between evidence and practice.
Acknowledgements: We would like to thank JA. Caprini (j-caprini2@aol.com) for giving permission to use Risk Assessment Tool.

P3943
Clinical manifestations and prediction rules in patients with pulmonary embolism and prior respiratory disease
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Introduction: Presently, little is known about de effect of prior respiratory disease on clinical manifestations and status on the pretest probability in patients with pulmonary embolism.
Objective: To describe clinical manifestations and status on the clinical prediction rules in patients with pulmonary embolism (PE) and prior respiratory disease (PRD).
Methods: We retrospectively analysed 118 cases with diagnosis of PE, in a referral hospital of respiratory diseases in Mexico City from 2007 to 2009.
Clinical information was taken form medical records and Wells and Geneva prediction rules were used to categorize the patient's clinical pretest probability of PE.

Table 1
Pretest probability according to Wells and Geneva criteria

	Total population n = 118	With prior respiratory disease 56 (47%)	No prior respiratory disease 62(53%)	P value p
Wells probability criteria				
Low	26 (22%)	18 (32%)	7 (11%)	
Intermediate	59 (50%)	25 (45%)	26 (42%)	0.005
High	33 (28%)	13 (23%)	29 (47%)	
Unlikely	36(31%)	21 (37%)	13 (21%)	0.048
Likely	82(69%)	35 (63%)	49 (79%)	
Geneva probability criteria				
Low	32 (27%)	10 (18%)	17 (27%)	
Intermediate	77 (65%)	43 (77%)	42 (68%)	0.384
High	9 (8%)	3 (5%)	3(5%)	

Results: 56/118 (47%) patients with PE had one or two PRD: obstructive sleep apnea/hypopnea syndrome 25 (21%), COPD 14 (12%), pneumonia 15 (13%) interstitial lung disease 6 (5%), asthma 4 (3%), and lung cancer 2 (1.7%) cases. Patients with PRD had higher prevalence of cough, sputum, deterioration of existing dyspnea, and wheezing; a lower prevalence of sudden onset of dyspnea and chest pain compared with the group with no PRD ($p<0.05$).
Pretest probability according to Wells and Geneva criteria are shown in table 1.
Conclusions: Clinical identification of PE in patients with PRD is still difficult because of high proportion of nonspecific nature of symptoms. The status on the clinical prediction rules in patients with PE and PRD limits their use in this setting.

P3944
D-dimer testing and pre-test probability scoring in the diagnosis of venous thromboembolism
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Introduction: With easy availability of bedside markers of venous thromboembolism (VTE) like D-dimer, widespread use of these tests often without pre-test probability scoring (PTPS) has become common practice in the diagnostic pathway of VTE.
Aims: We set out to assess how effective D-dimer testing is in predicting the likelihood of VTE and whether PTPS adds any further value to D-dimer testing.
Method: Consecutive patients with suspected VTE were included for a 3 week period - 90 records were analysed where a D-dimer test (Roche Test kit) was performed as part of the diagnostic pathway in the admissions unit of a teaching hospital providing acute medical services to a population of 450000.
Results: Out of the 90 patients: 40 D-dimer tests were positive, 50 negative; 14 with positive tests had radiological confirmation of VTE (CT Pulmonary Angiogram, Ventilation-Perfusion scan or Doppler Ultrasound Scan of the legs), 8 with negative tests still went to have radiological imaging because of high clinical suspicion but all were negative. Thus sensitivity was 100%, specificity 65.79%. Only 31 patients had PTPS; 18 had high or intermediate PTPS with positive D-dimer but only 8 had VTE (44.4%); 1 with low PTPS and positive D-dimer had VTE; 5 with high or intermediate PTPS but negative D-dimer had no VTE. The remaining had low PTPS with no VTE.
Conclusions: D-dimer is a very sensitive and reasonably specific tool to aid VTE diagnosis in appropriate clinical presentation, PTPS further aids to rule out the possibility of VTE with a negative D-dimer but does not seem to add any further value in patients with a positive D-dimer, hence PTPS should be included in the interest of patient safety.

P3945
Diagnostic values of scoring systems in the clinical approach to pulmonary thromboembolism
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Objective: The aim of the study was to compare the values of Wells and modified Geneva scoring systems in the diagnosis of PTE.
Methods: Records of 100 patients admitted with suspected PTE were reviewed. Clinical assessments of the patients were done according to Wells and Geneva scoring systems. D-dimer levels were evaluated. McNemar test, Mann-Whitney U test and ROC curve analysis was used for statistical evaluation.
Results: Seventy-eight patients were diagnosed as PTE, 22 patients were diagnosed as non PTE. Median Wells score was 5 (0-10) in patients with PTE, 2 (0-5.5) in patients without PTE (p=0.000). Median Geneva score was 7 (0-13) in patients with PTE, 5 (0-7) in patients without PTE (p=0.001). AUC was 0.815 (95% CI; 0,727-0,903) for Wells scores, 0,720 (95% CI; 0,617-0,823) for Geneva scores. For Wells scores ≥ 3 in PTE diagnosis sensitivity was 83%, specificity was%68 in the study population. Sensitivity was 67%, specificity was 68% for Geneva scores >5 in PTE diagnosis. There was significant difference between Wells and Geneva scoring systems (p=0.047). D-dimer levels were increased in 78 patients and normal in 9 patients. Wells score plus D-dimer testing diagnosed 98.7% of PTE patients, however this caused redundant further testing in patients without PTE.
Conclusion: Wells scoring system was found to be more sensitive than the modified Geneva system in diagnosis of PTE. The cut-off score for Wells could be kept higher when D-dimer testing is possible, otherwise further diagnostic testing should be considered for PTE diagnosis with Wells score≥ 3.

P3946
Biochemical predictors of mortality in pulmonary embolism
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Introduction: Pulmonary Embolism (PE) is associated with significant mortality. Although clinical algorithms and improved imaging have resulted in faster and more accurate diagnosis of PE, predictors of mortality remain an area of speculation.
Aim: To assess the role of D-dimers, Troponin and CRP as predictors of all cause mortality 2 years post investigation of suspected PE.
Method: We collected biochemical reports for 561 patients who had a total of 576 computerised-tomography pulmonary angiograms (CTPAs) performed between February 2008 and January 2009 for suspected PE. We were able to accurately confirm whether or not 461 (82.2%) of the patients had died, from any cause, as of February 2011. Data were analysed using MS excel.
Results:

Table 1

Biochemical marker	Number/SD	Alive	Dead	P-value
D-dimer (μg/L)	Number	94	126	0.25
	Mean (SD)	1.4 (1.8)	1.7 (4.1)	
TroponinT (ng/L)	Number	76	98	0.20
	Mean (SD)	0.01 (0.03)	0.19 (1.30)	
CRP (mg/L)	Number	175	194	0.72
	Mean (SD)	80.3 (90.9)	77 (92.1)	
No PE	Number (%)	185 (85)	207 (85)	
PE	Number (%)	32 (15)	37 (15)	

Discussion: There was no overall difference in all cause mortality at 2 years post CTPA for suspected PE between those who had a PE and those who did not. Mortality was equally high (15%) in both groups, regardless of presence or absence of PE at the time of investigation.
None of the biochemical markers we studied were associated with increased mortality. Only 220 (48%) and 174 (38%) patients had D-dimer and Troponin (known to be associated with increased all-cause mortality) measured respectively, although 369 (80%) had CRP measured. This may explain why an elevated Troponin was not associated with increased mortality in our study.

P3947
Trends in the incidence and case fatality of pulmonary embolism in hospitalized patients during 1997-2008 in China: A multicenter registration study
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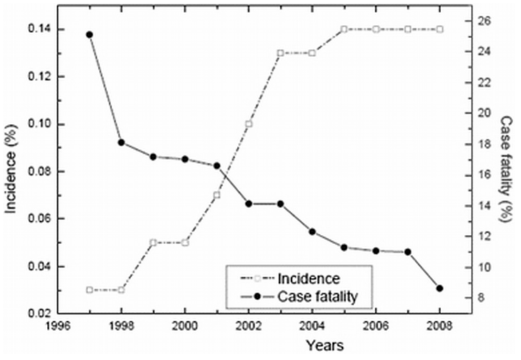
Background: In China, the National Cooperation Project of Prevention and Treatment for Venous Thromboembolism provided valuable information about the epidemiology of PE. So, comprehensive assessment on the incidence and case fatality of PE in hospitalized patients can be made firstly.
Methods: Between January 1997 and December 2008, consecutive patients, admitted to the inpatient ward with a diagnosis of suspected PE, were registered from 60 hospitals. The data was collected prospectively including demographic data, types and results of diagnosis methods and prognosis. All of patients were identified with a discharge diagnosis of PE based on the St. Anthony's ICD-9 diagnostic codes.
Results: From January 1997 to December 2008, hospitalization data were collect for 18,206 patients diagnosed with PE while there were 16,972,182 discharged patients. The annual incidence increased sharply from 0.03% in 1997 to 0.13% in 2003, then persisted 0.14%. Conversely, the case fatality was decreasing apparently from 25.11% in 1997 to 8.65% in 2008.



Conclusion: The actual incidence of PE among the hospitalization patients in China was 0.14%. Evidence suggests that a substantial decline in PE-specific mortality and the annual age-adjusted mortality from PE has been shown as a result of the prevention and treatment of PE.

P3948

CT pulmonary angiograms: Audit of probability of pulmonary embolus based on questionnaire

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Following British Thoracic Society guidelines on pulmonary emboli (PE) (2003) indicating that clinical probability should be assessed, we altered the request forms for computed tomography pulmonary angiograms (CTPA): nine questions were added, covering immobility, surgery, cancer, lower limb disease, pregnancy, cardiorespiratory disease, thrombophilia, family history of venous thrombosis, and previous history of venous thromboembolic (VTE) disease. We also introduced questions about the reason for suspecting PE: unexplained breathlessness, shock, pleurisy/haemoptysis, disproportionate breathlessness, and other. All CTPA examinations performed at our institution in 2009 (643 records) were analysed, using logistic regression and Chi-squared as appropriate. Of 643 cases, 122 were confirmed by CTPA to have PE. There was no association between the stated mode of presentation and likelihood of PE.

2-way contingency table of reason for test (rows) by CTPA result (columns)

Presentation	PE	No PE	Totals
Unexplained dyspnoea	48	182	230
Shock	4	4	8
Pleurisy/haemopytsis	9	42	51
Disproportionate dyspnoea	28	131	159
Other	30	145	175
Blank	3	17	20
Total	122	521	643

Chi-square (df 5) 6.385, p=0.272, not significant

For risk factors, only a history of VTE influenced likelihood of PE (Odds ratio 2.75, CI 1.49-5.08, p<0.01). Using DDimer results coded as positive or negative using our local cut-off in the same analysis gave an Odds ratio of 13.2 (CI 1.76-99, p=0.012). We conclude that requiring junior doctors to complete additional questions in ordering a CTPA did not give information that contributed to estimating the likelihood of PE, other than a history of previous VTE.

P3949

Diagnostic accuracy of unenhanced and gadolinium-enhanced magnetic resonance imaging for acute pulmonary embolism diagnosis: Results of the "IRM-EP" study

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Context: Magnetic resonance imaging (MRI) has not been yet fully evaluated for diagnosing pulmonary embolism (PE).
Aim: To evaluate MRI performance for PE diagnosis by reference to 64-detector CT angiography (CTA) in patients with clinical suspicion of PE.
Intervention: MRI including, unenhanced ECG-gated, perfusion and angiographic sequences was performed within 24 hours from CTA and were interpreted by two independent readers blinded to CTA results.
Measures: Sensitivity, specificity evaluated globally and for each sequence. Inter reader agreement evaluated with the kappa statistics.
Results: Among 300 patients included, 274, with a conclusive CTA, completed the whole MRI protocol, of which 103 had PE on CTA (prevalence: 37.5%). 76 of the 274 MRI examinations (28%) were judged inconclusive by reader 1 and 83 (30%) by reader 2. Sensitivity and specificity of conclusive MRI on global readings were 84.5% (95% CI, 74.9% to 91.4%) and 99.1% (95% CI, 95.1% to 100.0%) for reader 1 and 78.7% (95% CI, 68.2% to 87.1%) and 100% (95% CI, 96.7% to 100.0%) for reader 2, respectively. Sensitivity was better for proximal (97.7 to 100%) than for segmental (68 to 91%) and sub segmental PE (21 to 33%). Angiographic sequences showed the highest performance and agreement (Kappa: 0.77). Unenhanced sequences, although less sensitive, showed high specificity (96.1%) and good agreement (Kappa: 0.62), whereas perfusion sequences showed lower sensitivity, specificity and agreement.
Conclusion: MRI demonstrates high specificity, even for unenhanced sequence and acceptable sensitivity for PE diagnosis at the cost of a 28% to 30% rate of inconclusive result.

P3950

Influence of the initial venous thrombo-embolism event on outcome in patients with COPD: Findings from the RIETE registry

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Background: We recently found that COPD patients present more frequently with Pulmonary Embolism (PE) than Deep Venous Thrombosis (DVT) but also experience more death, PE and bleeding during a 3-month follow-up, than non-COPD patients.
Aims: To assess whether the 3-month outcomes of VTE patients with COPD depend on the initial VTE presentation, in the RIETE registry.
Method: We used a logistic regression to assess the association between the initial VTE presentation and the 3-month risk of death, bleeding and PE occurrence. Potential confounding factors were considered.
Results: 1761 (59%) of the 2984 COPD patients presented initially with PE. They were more frequently older and female, and less frequently obese or with a history of VTE than COPD patients with DVT. The 3-month cumulative incidence of symptomatic PE, death and major bleeding were respectively 1.5% (95%CI [1.1% - 1.9%]), 10.8% [2.1% - 3.2%] and 2.6% [9.7% - 11.9%]. Factors associated with these outcomes are presented in Table 1.

	Symptomatic PE OR [95% CI]	Death OR [95% CI]	Major Bleeding OR [95% CI]
PE as the initial event	1.5 [0.7–3.1]	1.6 [1.1–2.2]	1.8 [1.1–3]
Age>74	NS	1.5 [1.1–2.1]	NS
Cancer	3.5 [1.7–7]	5.1 [3.7–7]	NS
BMI [18.5–24.9]		1	
BMI <18.5	NS	2.8 [1.2–6.6]	NS
BMI >24.9	NS	0.5 [0.4–0.7]	NS
No previous VTE	NS	2 [1.2–3.6]	NS
Recent immobilisation >3 days	NS	2.4 [1.8–3.3]	1.8 [1.1–2.9]
Recent surgery	NS	NS	2.2 [1.1–4.2]

NS: non significant.

Conclusions: COPD patients initially presenting with PE are at a 3-month higher risk of death and major bleeding. Whether more efficient treatments without any increased bleeding risk (as filter) could improve their prognostic deserves further research.