patients). The Abstract P253 Table 1 shows the effect of different variables on mortality. This was not affected by sex, transplant status or laboratory parameters. With logistic regression analysis, we found that haematological malignancies (OR 7.44, 1.96–28.20), long term steroids (OR 7.87, 2.36–26.20) and age >65 years (OR 3.94, 1.36–11.40) were significantly associated with mortality. The relationship with immunosuppressive drugs was less significant.

Abstract P253 Table 1

Variable	Died	Survived	Chi square
Haematological malignancy	21 (70%)	9 (30%)	7.37 (p=0.0006)
Long term steroids	21 (72%)	8 (28%)	8.7 (p=0.0003)
Interstitial lung disease	9 (69%)	4 (31%)	1.79 (p=0.18)
Connective tissue disease	7 (64%)	4 (36%)	0.39 (p=0.44)
Recent immunosuppressants or chemotherapy	30 (59%)	21 (41%)	3.7 (p=0.05)
PCP PCR positive	11 (58%)	8 (42%)	0.47 (p=0.49)
Age >65 years	26 (67%)	12 (33%)	9.58 (p=0.002)

Conclusions HIV negative immunocompromised patients with pulmonary infiltrates are more likely to die if they have a haematological malignancy, are on long term steroid therapy or aged >65 years. The effect of immunosuppressive drugs needs more elucidation. Careful attention needs to be paid to these groups of patients to pick up early signs of deterioration.

REFERENCES

1. **Shorr AF,** *et al*. *Chest* 2004;**125**;260–71.
2. **Ana Rañó,** *et al*. *Chest* 2002;**122**;253–61 .
3. **Robert H Poe,** *et al*. *Arch Intern Med* 1986;**146**:1304–8.
4. **Rubenfeld GD,** *et al*. *Ann Intern Med* 1996;**125**:625–633.

P254 INVESTIGATING HMGB1 AS A POTENTIAL INFLAMMATORY MEDIATOR IN BRAIN DEATH INDUCED LUNG DAMAGE

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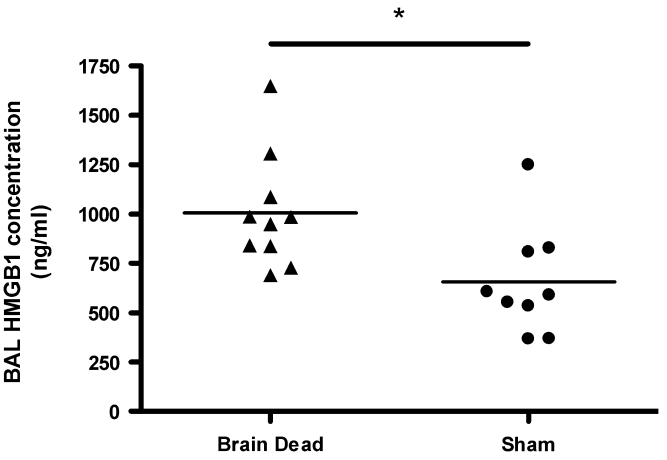
Background Donor lungs are particularly susceptible to the haemodynamic instability and systemic inflammation which occurs following induction of brain death (BD). Increased donor lung inflammation with IL-6 or IL-8 is associated with poor post-transplant outcomes. Donor LPS pre-conditioning significantly ameliorates the lung inflammation after BD in a rat model suggesting that TLR-4 ligation following BD contributes to donor lung inflammation, even in the absence of LPS. We hypothesised that HMGB1, an alarmin released from damaged tissue and immune cells and known TLR-4 ligand, may act as an inflammatory mediator in BD induced lung injury.

Methods BD was induced in a rat model using rapid intra-cranial balloon inflation and bronchoalveolar lavage (BAL), serum and lung tissue were collected and compared with sham operated controls rats. The HMGB1 concentration in the rat serum and BAL was measured by ELISA. Real-time PCR was used to assess HMGB1 mRNA expression in lung tissue following BD. HMGB1 immunolocalisation studies were performed on BD and sham rat lung tissue. Finally HMGB1 staining was assessed in lung tissue from human BD donors and normal controls.

Results The BAL HMGB1 concentration was significantly higher in the BD group (965±302 ng/ml) than in the sham group (655 ± 274 ng/ml) (p=0.0172). There was however no difference in HMGB1 gene expression between the two groups. HMGB1 positive staining was visualised in a nuclear and extra-nuclear location and was dispersed throughout the rat and human lung with a greater density around the bronchioles. There was a significantly higher area of positive staining in BD rat lung tissue than sham tissue (p=0.0345). No difference was seen in the human BD lungs compared to controls (Abstract P254 Figure 1).



Abstract P254 Figure 1

Conclusions HMGB1 is likely to be released passively from lung cells suffering sustained damage during BD. As HMGB1 gene transcription is unchanged up to 5 h following BD, the lung tissue is most likely releasing presynthesised cellular HMGB1. This study provides evidence of the presence of an alarmin which is likely to potentiate inflammation in the donor lung *via* the TLR-4 pathway. If release occurs early following BD, HMGB1 could be an important initiating mediator in donor lung inflammation.

Clinical studies in pulmonary embolism

P255 DEFINING A CIRCADIAN PATTERN OF PRESENTATION OF PULMONARY EMBOLISM ON CT/VQ IMAGING

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Purpose To evaluate whether there is an association between the chronological occurrence of pulmonary emboli, anatomical site, radiological extent and associated clinical risk factors.

Materials and Methods 1410 consecutive CTPA and VQ scans performed between December 2005 and October 2008 were retrospectively reviewed independently by 2 thoracic radiologists (kc=0.78). A third observer was used in equivocal cases. 270 cases of pulmonary emboli were identified. Records were available for 180 patients. 40 were excluded on the basis of incomplete presenting details. All diagnosed cases of pulmonary emboli were risk stratified according to the Wells score, underlying co-morbidities including diabetes, DVT, malignancy and cardiomyopathy. Morbidity, mortality and survival data were recorded. For 140 (Age 67 y SD ±17, 61 male), the occurrence of the pulmonary emboli based on onset of symptoms was defined by four time intervals. Each group was subdivided according to extent of clot. The average Wells score was calculated for each 6 h period.

Results 11% (n=16) patients presented between 00:00 and 06:00 h, 36% (n=50) between 06:00 and 12:00 hours, 30% (n=43) between 12:00 and 18:00, and 22% (n=31) between 18:00 and 24:00(χ^2 =18.3, p<0.05). Average Wells Scores were 4 (SD±2), 6 (SD±1), 4 (SD±2) and 5 (SD±2) for the respective times. Patients with bilateral emboli affecting the main pulmonary arteries were distributed as follows: 00:00–06:00 (n=2), 06:00–12:00 (n=17), 12:00–18:00 (n=10), 18:00–24:00 (n=9) (χ^2 =10.7, p<0.05). Patients with unilateral emboli affecting the main pulmonary arteries were found to present as follows: 00:00–06:00 (n=3), 06:00–12:00 (n=11), 12:00–18:00 (n=10), 18:00–24:00 (n=7) (χ^2 =5.00, p=0.17). Patients with bilateral emboli affecting the segmental arteries presented at: 00:00–06:00 (n=4), 06:00–12:00 (n=12), 12:00–18:00 (n=8), 18:00–24:00 (n=3) (χ^2 =7.52, p=0.05). Patients with unilateral emboli affecting the segmental arteries presented at: 00:00–06:00 (n=5), 06:00–12:00 (n=5), 12:00–18:00(n=8), 18:00–24:00 (n=5). (χ^2 =1.17, p=0.76) In the 4 time intervals, patients with >2 symptoms of chest pain, dyspnoea, or haemoptysis were found to be distributed as: 00:00–06:00 (n=8), 06:00–12:00 (n=26), 12:00–18:00 (n=16), 18:00–24:00 (n=17) (χ^2 =9.72, p<0.05).

Conclusion Pulmonary Emboli were most frequent between 06:00 and 12:00 h during which there was more extensive radiographical findings, associated with a higher Wells score, and more profound symptoms. This suggests a circadian pattern of the presentation of pulmonary emboli, correlating with the clinical and radiological severity of disease.

P256 INVESTIGATING SUSPECTED PULMONARY EMBOLISM AS OUTPATIENT: THE PORTSMOUTH EXPERIENCE

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Introduction Suspected PE is a commonacute medical presentation. It continues to be a significant burden on the healthcare resources, hence it makes sense to investigate and manage stable patients with suspected PE as outpatient. There is very limited evidence available on the safety of investigation of PE as outpatient. The aim of this study was to review the outcomes of investigation for PE on outpatient basis.

Methods During 6 months period from November 2007 to April 2008, 176 patients were investigated for suspected pulmonary embolism as outpatient, based on clinical criteria of stability (eg notachycardia, tachypnea or hypotension). All of these patients were treated withenoxaparin from the day of admission till the diagnosis of PE was confirmed or excluded. We randomly selected 92 of these patients and retrospectively reviewed their clinical notes. The data recorded included pulse, blood pressure, respiratory rate, PO_2, PCO_2, Trop t and D.dimer. We also looked at the number of days patients had to wait for the CTPA or VQ scan. All patients were reviewed in clinic after a VQ scan or CTPA.

Results 12 out of 91 (13.2%) patients were diagnosed with PE. There were no deaths and no significant complications recorded from either PE or enoxaparin therapy. Average time taken for PE to be diagnosed or excluded was 3.86 days. There were no significant differences in clinical or physiological parameters between groups apart from PO_2, which was significantly lower in the group with PE (p 0.032) (Abstract P256 Table 1).

Abstract P256 Table 1

Characteristic	Total (mean)	PE diagnosed	PE excluded	p-Value
n	91	12 (13.2%)	79 (86.8%)	
Age	50.01	56.83	49	0.187
Female	63	7 (11.1%)	56 (88.9%)	
Male	28	5 (17.9%)	23 (82.1%)	
PO_2 (kPa)	10.96	9.84	11.15	0.032
PCO_2 (kPa)	5.28	4.66	5.38	0.214
RR (n/min)	17.42	17.58	17.4	0.844
SaO_2	97.01	96.33	97.12	0.403
Systolic	140.32	130.41	141.83	0.248
Diastolic	80.67	81.16	80.59	0.909
HR	85.2	92.25	84.1	0.166
Trop T	0.07	0.14	0.05	0.408
D.Dimer	1.33	2.28	1.18	0.295
Request to test time (days)	3.86	5	3.68	0.427

Conclusions We conclude from this small series that it may be safe to investigate suspected PE as outpatient in selected clinically stable patients, though this needs to be confirmed in larger studies with an evaluation of health economic benefits.

P257 A COMPARISON OF SCORING SYSTEMS IN THE MANAGEMENT OF A RANGE OF PULMONARY EMBOLISM PATIENTS IN A UNIVERSITY HOSPITAL

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Introduction Pulmonary embolism (PE) is a leading cause for inpatient admission and in patient mortality in the UK. Its clinical features are often nonspecific, making a diagnosis of pulmonary embolism difficult and without appropriate treatment; a pulmonary embolism can be fatal. We compared three scoring systems (Geneva and Wells score, which are both predictive tools and Pulmonary Embolism Severity Index (PESI) a risk stratification tool) in three distinct patient groups; those whose primary cause of death was pulmonary embolism, those whose management required admission or patients managed on an outpatient basis.

Methods A retrospective review of case notes for patients with the primary diagnosis of pulmonary embolism from 2009 to 2010 was performed at the Oxford Radcliffe NHS Trust, applying the Wells, PESI and Geneva scoring systems. Death from PE was defined by the presence of a PE or it being listed as the primary cause of death on the death certification in combination with concordant view of a senior clinician of the medical team. Outpatient management was based on patients having a zero length-of-stay. All groups were distinct.

Results See Abstract P257 Table 1 for selected results.

Discussion Across all our group of patients, the PESI outperformed both the Wells and Geneva score. Patients who died from PE were older and more hypoxic, and often caused most diagnostic difficulty presenting with non-respiratory symptoms in over half of the cases. Abnormal chest radiograms were common in all groups and although Ddimer assists in diagnosis other biomarkers such as troponin and BNP were not helpful. The PESI also outperformed the other scores as aid on deciding to manage patients with PE as an outpatient, but still with a degree of uncertainty.

In conclusion, PESI should be considered in the management and risk stratification of PE and PE should be always considered in older patients with non specific clinical features, abnormal