Abstract P165 Figure 1 Flowchart of outcomes of all CTPA's collected during 2014 and 2012

Conclusion The number of ambulatory patients investigated for PE has reduced from 2012 to 2014 which probably reflects an increased acute physician presence at our DGH but some bed savings (7 nights over our 2 month period) were still made. Over 2 years approximately 180 ambulatory patients have been investigated and managed for PE at our DGH with no adverse incidents to date.

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P166 PATIENTS WITH CONFIRMED AND SUSPECTED PULMONARY EMBOLI HAVE THE SAME TWO-YEAR MORTALITY

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Introduction There is limited information regarding long-term survival following Pulmonary Embolism (PE), and no data on survival of patients that have undergone CT Pulmonary Angiography (CTPA) but found to be thrombus negative. The positive rate of PE detection in patients undergoing CTPA is variable, ranging from 4.7–25.8% and there is a high reported incidence of incidental pathology discovered during this investigation. We sought to determine the comparative survival of patient undergoing CTPA that were thrombus positive compared with those without a PE. We also sought to determine the rate of PE detection and characterise the nature of incidental findings found in patients undergoing CTPA.

Methods We retrospectively reviewed data on all CTPA investigations conducted between April 2010 and April 2012. All abnormalities reported on CTPA were reviewed and compared with previous imaging from the last 6 months to determine if they were new findings. Follow-up investigations and out-patient attendances were obtained for all new findings reported on the index CTPA, and 2 year mortality rates were established from regional registry data.

Results Of the 1043 patients suitable for analysis, 241 (22.4%) were thrombus positive. The thrombus positive cohort consisted of 47.7% males compared with 40.7% in the thrombus negative group (difference 7.1% [-0.0 to 14.2, $p = 0.52$]). Survival at 2 years following CTPA was 67.6% in thrombus positive patients and 65.9% in thrombus negative patients with a hazard ratio of 0.96 (95% CI, 0.74 to 1.23, $p = 0.721$) (Figure). Incidental findings were detected in 51.1% of CTPA examinations

Survival of patients with and without PE on CTPA

Abstract P166 Figure 1 Survival of patients with and without PE on CTPA

including: consolidation/collapse (19.5%), effusion (16.7%), neoplasia (13.5%), lymphadenopathy (9.8%), heart failure (7.6%) and pulmonary nodules (6.6%). 47.7% of incidental findings were deemed significant as determined by the need for further follow-up of clinical intervention.

Conclusion There is no difference in the 2 year mortality between thrombus positive and thrombus negative patients undergoing CTPA. Many incidental findings found on CTPA are clinically significant.

P167 OUTCOMES AND PREDICTORS OF MORTALITY IN CANCER PATIENTS WITH INCIDENTAL PULMONARY EMBOLISM

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Objectives Incidental pulmonary emboli (iPE) are detected in a significant minority of contrast CT scans performed during the management of patients with cancer. These patients are reported to have an increased mortality compared to matched controls. This study investigates outcomes and predictors of mortality following iPE.

Methods Reports of all contrast-enhanced CT scans including the chest, excluding dedicated CT pulmonary angiography, performed between 1st May 2012 and 30th September 2013, were searched for prospectively identified iPE. Clinical data was collected from multiple sources, including clinic letters, discharge summaries, and the hospital patient database. Patients presenting with acute symptoms consistent with PE or those already receiving therapeutic anticoagulation were excluded. Potential clinical and radiological predictors of mortality were defined pre-hoc and tested using Student's t-test and Cox proportional-hazard regression.

Results There were 160 cancer patients with iPE. Anticoagulation treatment was given in 97% of cases. Overall 30-day and 6-month mortality following iPE was 20.6% (95% confidence interval 15.0–27.6%) and 52.5% (44.8–60.1%), respectively. Increased 30-day and 6-month mortality was observed in scans performed on inpatients compared to outpatients (38.2% vs 11.4%, $p = 0.0004$ and 78.2% vs 40.0%, $p < 0.0001$). 6-month mortality was also increased if this was a new diagnosis of

Poster sessions

malignancy at the time of the CT scan compared to patients with known malignancy (69.4% vs 46.0%, $p = 0.0046$), or if metastases were present at the time of CT scan (58.3% vs 26.7%, $p = 0.0012$).

There were 86 (53.8%) central (main or lobar pulmonary arteries), 60 (37.5%) segmental, and 14 (8.8%) subsegmental pulmonary emboli. No significant mortality difference was observed between these radiological features.

Conclusion This study has assessed potential poor prognostic features in patients with cancer and iPE. Despite the vast majority receiving therapeutic anticoagulation, there is a high 30-day and 6-month mortality. The benefits of conventional treatment in this clinical situation are as yet unclear.

P168 REDUCED GAS TRANSFER (TLCO) PREDICTS POOR OUTCOME IN PATIENTS WITH PULMONARY HYPERTENSION AND HEART FAILURE WITH PRESERVED EJECTION FRACTION

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Rationale There is limited data on predictors of survival in patients with Pulmonary Hypertension (PH) in the context of Heart Failure and Preserved Ejection Fraction (HF-pEF). Simple non-invasive tests to aid the physician in prognostication would be valuable. The aim of this study was to examine demographic and non-invasive predictors of outcome in PH-HF-pEF in a large well phenotyped PH registry.

Method In the ASPIRE Registry (Hurdman J *et al* Eur Resp J, 2012), 1737 consecutive, incident, treatment-naive patients with suspected PH underwent diagnostic evaluation between February 2001 and 2010. Patients were diagnosed as PH-HF-pEF if no other causes of PH could be identified and they fulfilled the following criteria: signs and symptoms of heart failure; mean pulmonary artery pressure ≥ 25 mmHg at rest and pulmonary arterial wedge pressure > 15 mmHg by RHC; preserved left ventricular systolic function (ejection fraction $\geq 50\%$) by echocardiography or CMR. Predictors of survival were assessed using forward stepwise Cox regression analysis. Variables with a p-value

Results 98 patients who fulfilled the diagnostic criteria for PH-HF-pEF were identified. Maximum duration of follow-up was 10 years with a mean follow up 4.9 ± 2.3 years, during which 33 (34%) patients died. After multivariate analysis, only ISWT distance HR 0.99 CI (0.99–1.00) and TLCO HR 0.96 CI(0.94–0.98) at baseline, were predictors of outcome ($p < 0.01$). Median predicted TLCO in the PH-HF-pEF population was 65%. The 5-year survival in those with a TLCO $< 65\%$ predicted was 60%, compared with 85% in those whose TLCO was $\geq 65\%$ ($p < 0.01$).

Conclusions Simple non-invasive testing such as TLCO and exercise capacity measured by the ISWT predict outcome in patients with PH-HF-pEF.

P169 RATES OF RECOVERY OF OXYGEN CONSUMPTION AND HEART RATE AFTER CARDIOPULMONARY EXERCISE TESTING PREDICT SURVIVAL IN PATIENTS WITH PRECAPILLARY PULMONARY HYPERTENSION

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Abstract P169 Table 1

Variable	Significance level	Variable	Significance level
VO2 R 30	0.729	OUES	0.026
HRR 30*	0.300	Peak VO2	0.024
VO2 R 60	0.084	VE/VC02 at AT	0.032
HRR 60	0.058	Peak heart rate	0.067
VO2 120	0.021	Diagnosis	0.055
HRR 120	0.003	Age	< 0.001
DLCO (% pred)	0.002	logNTproBNP	0.064
SvO2	0.115	Cardiac index	0.278
RAP	0.401	mPAP	0.532
6MWD	0.205	WHO FC	0.428

VO2 R 30, 60, 120 - VO₂ at 30, 60, 120 seconds of recovery as a percentage of peak VO₂; HRR 30, 60, 120 - Heart rate recovery at 30, 60, 120 seconds of recovery as a percentage of peak heart rate; DLCO - diffusion capacity of the lungs for carbon monoxide as a percentage of predicted value; SvO2 - resting mixed venous oxygen saturation; RAP - resting right atrial pressure; 6MWD - 6 min walk distance; OUES - oxygen uptake efficiency slope; mPAP - resting mean pulmonary arterial pressure; WHO FC - WHO functional class, I/II v III/IV

Introduction Several cardiopulmonary exercise testing (CPET) variables have been shown to predict prognosis in pulmonary hypertension (PH).¹ Recently published data suggests that novel variables such as oxygen uptake efficiency slope (OUES), i.e. the relationship between VO₂ and log-transformed ventilation² and heart rate recovery (HRR), the rate of decline of heart rate at one minute after an incremental CPET, have been shown to predict survival in a cohort of PH patients.

We aimed to study the prognostic significance of the rate of recovery of VO₂ after incremental CPET alongside HRR and OUES in a large cohort of patients with precapillary PH. We hypothesised that a slower VO₂ recovery would be associated with poorer survival and that we could confirm that lower HRR and OUES are significantly associated with a worse outcome.

Method Retrospective analysis was undertaken of data from 108 incident patients who underwent CPET at the time of diagnosis of Group I or IV PH. Univariate Cox proportional hazard analyses were undertaken to assess the prognostic significance of the variables considered and the results are shown in Table 1.

Results [Table 1]

Conclusions The degree of VO₂ recovery at 120 seconds after incremental CPET is predictive of survival in this relatively large group of patients with precapillary PH. We have also confirmed the findings seen in another centre of a significant influence of heart rate recovery and OUES on survival. Further work should focus on whether these variables provide additional prognostic information over their more traditionally studied counterparts.

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P170 HEART RATE RECOVERY AT ONE MINUTE FOLLOWING INCREMENTAL SHUTTLE WALK TEST PREDICTS OUTCOME IN PULMONARY HYPERTENSION

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Background Heart-rate recovery during the first minute of rest (HRR1) after a six minute walk test (6MWT) has been shown to