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-naïve 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 ≥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 ≥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/VCO2 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 - VO$_2$ at 30, 60, 120 seconds of recovery as a percentage of peak VO$_2$; 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 VO$_2$ and log-transformed ventilation[2] 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 VO$_2$ after incremental CPET alongside HRR and OUES in a large cohort of patients with precapillary PH. We hypothesised that a slower VO$_2$ 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 from108 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 VO$_2$ 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