SURVIVAL IN PATIENTS WITH MALIGNANT PLEURAL EFFUSIONS WHO DEVELOPED PLEURAL INFECTION: A RETROSPECTIVE CASE REVIEW FROM 6 UK CENTRES

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Background The incidence of malignant pleural effusions (MPE) is increasing and overall prognosis remains poor. In-dwelling pleural catheters (IPCs) relieve symptoms, but increase the risk of pleural infection. We reviewed survival times of cases of pleural infection in patients with IPCs for MPE from 6 UK centres.

Methods Baseline data were collected for all IPC insertions from 1/05 to 31/14. Survival times were analysed by underlying tumour. Results were compared with national data, and with data from a cohort of 789 patients with MPE (the LENT cohort). LENT scores were used to calculate individual predicted life expectancy, which was compared with actual survival.

Results Of 672 IPCs inserted across 6 centres during the study period, 25 patients (3.6%) experienced pleural infection. 19/25 had mesothelioma, 8/25 lung cancer, 3/25 breast cancer, 1/25 lymphoma and pleural infection was 753 days (95% confidence interval 446–1089) compared with 339 days in the LENT cohort (p = 0.08). Pleural infection was associated with longer survival with mesothelioma and lung cancer, but not breast cancer. Most patients experienced early infection, suggesting this result isn’t simply a result of higher infection rates in patients who survive longer with an IPC in situ. We propose that pleural infection stimulates a local immune response, which acts against tumour. Further studies are planned to investigate this hypothesis further.

Clinical investigations and outcomes in pulmonary vascular disease

INCIDENCE AND SEVERITY OF CHRONIC THROMBOEMBOLIC PULMONARY HYPERTENSION FOLLOWING THE INTRODUCTION OF A ONE-STOP CLINIC FOR ACUTE PULMONARY EMBOLISM

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Introduction The management and follow-up of pulmonary embolism (PE) is delivered by various specialties resulting in both under and over investigation for suspected chronic thromboembolic pulmonary hypertension (CTEPH). To standardise our approach to long-term PE management a “one-stop” clinic was established in Sheffield in March 2010 to review all patients approximately 3 months after their presentation with acute PE.

The aim of this study was to evaluate the incidence and severity of CTEPH identified from a one-stop clinic using an investigative strategy based on careful clinical assessment.

Methods Consecutive patients attending the one-stop PE clinic following hospital admission with acute PE were identified. During the one-stop consultation a haematologist and respiratory physician reviewed the patient jointly. The need for further investigation was based on clinical assessment. CTEPH was defined as mean pulmonary artery pressure (mPAP) at right heart catheterisation ≥25 mmHg and required multimodality imaging (isotope perfusion scanning, CT pulmonary angiography and MR imaging including MRA and MR perfusion mapping) demonstrating classical features of CTEPH.

Results Over a 3-year period between March 2010 and March 2013, 616 patients (mean age 67.7 years, 50% male) attended the one-stop PE clinic approximately 3 months following their acute presentation. 16 patients were diagnosed with CTEPH. An overall diagnostic rate of CTEPH of 2.6% for patients seen at the clinic and an annual incidence of 8.9/million/year was observed based on a referral population of 600,000. This compares to an annual incidence of CTEPH of 4.8/million/year in patients referred to the SPVDU over the same time period, based on a referral population of 15 million. The 16 patients with CTEPH had mPAP 37 ± 11 mmHg, pulmonary vascular resistance (PVR) 362 ± 240 dynes, significantly lower than patients with CTEPH diagnosed at the SPVDU until 2010 (n = 242) mPAP 48 ± 11 mmHg and PVR 735 ± 389 dynes (Hurdman et al Eur Respir J 2012:39(4):945–955).

Conclusion Introduction of a one-stop PE clinic for routine follow-up of patients with acute pulmonary embolism identifies
patients with higher rates of CTEPH with less severe pulmonary haemodynamic changes.

**S119 LEFT VENTRICULAR DYSFUNCTION INFLUENCES SURVIVAL IN CONNECTIVE TISSUE DISEASE ASSOCIATED PULMONARY ARTERIAL HYPERTENSION BUT NOT IDIOPATHIC PULMONARY ARTERIAL HYPERTENSION**

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Background Connective tissue disease – associated pulmonary artery hypertension (CTD-PAH) has a worse prognosis compared with idiopathic pulmonary arterial hypertension (IPAH). We investigated the prognostic significance of left and right cardiac dysfunction in IPAH and CTD-PAH.

Methods and results Between 2003 and 2011, patients with a new suspected diagnosis of pulmonary hypertension underwent diagnostic assessment including cardiac magnetic resonance (CMR) imaging and right heart catheterization (RHC). 138 patients fulfilled the criteria for pulmonary arterial hypertension, of which 74 were diagnosed with IPAH and 38 were diagnosed with CTD-PAH. At baseline, there was no significant difference in age, functional class, lung function or six-minute walk distance between the two groups. At CMR, both groups had right ventricular (RV) dilatation and impaired RV systolic function, but well preserved left ventricular (LV) ejection fraction. Patients with IPAH had greater right ventricular hypertrophy than those with CTD-PAH (VMI 1.16 v 0.99, p = 0.03). Left atrial volume, a marker of LV diastolic dysfunction, was lower in IPAH than CTD-PAH (23 v 33 ml/m², p < 0.0001). At RHC, mean pulmonary artery pressure was higher in IPAH than CTD-PAH (50 v 43 mmHg, p = 0.01).

There was no difference in the distribution of initial disease-targeted therapies between the groups. Survival was better in IPAH than in CTD-PAH (p = 0.03), with rates of 83% at 1 yr and 74% at 3 yrs in IPAH, but 75% at 1 yr and 53% at 3 yrs in CTD-PAH. Poor baseline right ventricular function was associated with reduced survival in both conditions. However, poor left ventricular function, as measured by left ventricular stroke volume index (LVSVI), only influenced survival in CTD-PAH (p = 0.002) and not in IPAH (p = 0.21).

Conclusions Poor LVSVI at diagnosis is associated with impaired survival in CTD-PAH but not IPAH. Intrinsic LV problems, particularly diastolic dysfunction, may contribute to the excess mortality in CTD-PAH.

**S120 RIGHT VENTRICULAR DYSFUNCTION IN PULMONARY HYPERTENSION WITH COMBINED PULMONARY FIBROSIS AND EMPHYSEMA SYNDROME**

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Introduction Recent studies have suggested that the coexistence of emphysema and fibrosis alters clinical outcome. The aim of this study was to investigate the comparative clinical characteristics, pulmonary function, haemodynamics and right ventricular (RV) function and outcome in patients with pulmonary hypertension associated with combined pulmonary fibrosis and emphysema (PH-CPFE), chronic obstructive pulmonary disease (PH-COPD) and interstitial lung disease (PH-ILD).

Methods In 79, incident patients with pulmonary hypertension associated with respiratory disease, cardiovascular magnetic resonance imaging was performed at 1.5T. Emphysema and fibrosis were scored on high resolution computed tomography scans. Demographic data, lung function tests and right heart catheterisation were also performed.

Results Patients with pulmonary hypertension associated with combined pulmonary fibrosis and emphysema syndrome had lower right ventricular ejection fraction when compared to both patients with PH-COPD and PH-ILD (p < 0.05). At Kaplan-Meier analysis, patients with PH-CPFE patients had significantly lower survival rates compared to patients with PH-COPD and PH-ILD (p < 0.05).

Abstract S119 Figure 1 Survival rates of patients stratified according to disease, and baseline RVSVI (A) or LVSVI (B). Poorer right ventricular function (inframedian RVSVI) was associated with impaired survival in both IPAH and CTD-PAH (A). Poorer left ventricular function (inframedian LVSVI) was associated with impaired survival in CTD-PAH (p = 0.002), but not in IPAH (p = 0.21) (B). RVSVI, right ventricular stroke volume index; LVSVI, left ventricular stroke volume index.

Abstract S120 Figure 1 Kaplan Meier plot showing survival of patients with pulmonary hypertension associated with combined fibrosis and emphysema (PH-CPFE) in comparison to pulmonary hypertension interstitial lung disease (PH-ILD) and pulmonary hypertension associated with COPD (PH-COPD).