Corresponding Diagnoses Ischaemic heart disease, Pulmonary artery hypertension, Gastroesophageal reflux disease and Osteoporosis

Results 1000 CT chest scans were reviewed. Here is analysis from first 227 scans. Common reasons for requesting imaging: lung transplant assessment (29%), excluding bronchiectasis (18%), acute exacerbation of COPD (12%) and LVRS assessment. Retrospective analysis of 227 CT Thorax scans showed a total of 450 pulmonary (138) and extra pulmonary (312) findings. (figure 1) Pulmonary findings Bronchiectasis: 40% (90/227), lung nodules: 6% (13/227) of which new cancer diagnoses were 23% (3/13), Consolidation 4% (9/227), Small airway changes 3% (7/227), Interstitial lung changes: 6% (14/227), Pleural plaques 2% (5/227). Extra pulmonary findings Hiatus hernia: 18.5% (42/227), Vertebral fractures: 17% (39/227), Enlarged Pulmonary artery diameter (more than or equal to 29 mm): 38% (87/227), Coronary artery plaques: 55% (124/227).

Summary Preliminary analysis indicates a high incidence of potentially treatable extra pulmonary comorbidities. Incidence of co-existing radiological bronchiectasis is 40%.

Conclusions To our knowledge this is the first report quantifying the added value of non-contrast CT Thorax in the assessment of COPD patients. Our recommendation is that a list of imaging diagnoses linked to well recognised COPD comorbidities should be part of the standard work up in the assessment of COPD patients undergoing CT Thorax.

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P94

CARDIORESPIRATORY PHYSIOLOGY IN PATIENTS WITH COPD ACCORDING TO BLOOD EOSINOPHILIA: DATA FROM THE ERICA COHORT

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Introduction Blood eosinophils level in Chronic Obstructive Pulmonary Disease (COPD) is a candidate biomarker for Regulatory qualification as a drug development tool identifying individuals who may benefit from targeted therapies. Current evidence focused on association with exacerbations and response to therapy, however the association of eosinophilia with cardiorespiratory physiology has not been determined.

Methods The ERICA (Evaluating the Role of Inflammation in Chronic Airway Disease) study is a large multicentre study of patients with COPD.¹ Aortic pulse wave velocity (PWV), carotid intimal thickness (CIMT) and spirometry were measured. Health Status (CAT) was recorded. From the full blood count, both absolute and percentage eosinophil counts were considered. We used previously validated cut offs² of 0.3×10^9 cells/L and 2% to compare aortic PWV, CIMT and spirometry variables using a Student's t-test. A multivariate model was then built to examine the effect after adjusting for confounding factors.

Results 519 subjects were included in this analysis. Of these, 58% were men, mean (SD) age of 66.9 (7.6) years with a

median smoking history of 42 pack years. Mean (SD) resting heart rate was 75 (13)bpm, mean arterial pressure 104 (12) mmHg and percentage predicted FEV₁ 52.5 (16.1)%. When comparing high and low eosinophil groups at both 0.3×10^9 cells/L and 2% cut-offs there was no difference in smoking status or pack years, spirometry variables or CAT score. There was no difference in prevalence of ischaemic heart disease, stroke or diabetes. Aortic PWV or CIMT were not different between groups. Multiple regression confirmed this (Table).

Conclusions A phenotype defined by blood eosinophilia does not relate to cardiorespiratory physiological variables in subjects with COPD.

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Abstract P94 Table 1

Cardiorespiratory variables *	Absolute eosinophil count			Percentage eosinophil count		
	Beta co-efficient	95% CI	p-value	Beta co-efficient	95% CI	p-value
Aortic PWV (m/s)	0.23	−1.3 to 1.7	0.77	0.090	−0.29 to 0.47	0.64
CIMT (mm)	0.16	−0.60 to 0.69	0.69	0.04	−0.15 to 0.23	0.71
Diameter right	0.17	0.91	0.65	0.05	0.23	0.59
Diameter left		−0.56 to 0.89			−0.13 to 0.23	
FEV ₁ (L)	0.10	−0.11 to 0.51	0.21	0.06	−0.02 to 0.13	0.15
FVC (L)	0.17	−0.29 to 0.64	0.46	0.12	0.01 to 0.23	0.04

* Adjustment for sex, age, MAP, HR, FEV₁, FVC, smoking pack years, history of diabetes and peripheral vascular disease

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CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SYMPTOMATIC AORTIC STENOSIS: A MAIN UNDERLYING DIAGNOSTIC CONFOUNDER AND PROGNOSTIC FACTOR

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Introduction and Objectives COPD is associated with increased prevalence of cardiovascular comorbidities and mortality from cardiac pathologies. In heart valve diseases, the onset of dyspnoea is the main determinant of outcome and treatment. Thus, COPD may represent a confounding factor in patients with severe aortic stenosis (AS) whilst influencing management. Moreover, the correct diagnosis of COPD in symptomatic AS is extremely challenging. We investigate the prevalence of COPD in patients with symptomatic AS and its relation with all-cause mortality.

Methods Consecutive patients with symptomatic severe AS referred to a cardiology tertiary centre for their clinical management were recruited. The severity of aortic valve disease, diagnosis of COPD and symptomatic status were recorded. Patients were treated with either surgical or percutaneous

Abstract P95 Figure 1

valve implantation or were excluded from any invasive option at the discretion of the responsible physician. Full pulmonary function testing (PFT) was performed.

Results A total of 425 symptomatic AS patients were included. Of these, 313 (74%) underwent PFT. COPD was clinically recognised in 25% (n=110) of the total group and in 20% (n=64) of the AS patients with PFT. On PFT Results analysis, the actual prevalence of COPD was even higher (33%). COPD severity in AS based on FEV₁ was classified as follows: mild in 46%, moderate in 41%, severe in 12%, and very severe in 1%. There were no differences in terms of aortic disease severity, body habitus, functional class nor cardiac function in patients with or without COPD. AS patients with COPD were more likely to be males (56% vs 43%, $p<0.001$) and with a non-significant tendency to older age (80 ± 7 vs 78 ± 8 , $p=0.07$). Of the AS COPD patients, only 9% were on inhaled treatment. During a mean follow-up of 16 ± 10 months, patients with COPD showed higher rates of all-cause mortality compared to patients without COPD (39% vs. 20%, $p<0.001$). COPD was an independent predictor of all-cause death (HR: 2.1, 95% CI: 1.4 to 3.2, $p<0.001$).

Conclusion COPD in symptomatic AS is common, under-treated and associated with an increased risk of death. Spirometry and COPD case-finding should be performed when managing patients with symptomatic AS.

P96 DEATH RELATED TO CARDIOVASCULAR DISEASE IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Chronic obstructive pulmonary disease (COPD) kills over 5.6% (3.2 million) of the world population every year and is projected to increase to 7.8% by 2030. According to the literature about a third of patients with COPD die of cardiovascular disease (CVD). However, these findings do not match clinical data from the Evaluating the Role of Inflammation in Chronic Airways disease (ERICA) cohort – a multi-centre observational cohort study of 729 patients with COPD – nor published data from the late 60s indicating only about a tenth of patients dying of CVD. The aim of our study was to categorise causes of death, and compare self-reported CVD incidence with electronic health records. Clinical data were linked to mortality data from the Office for National

Statistics. Causes of death were categorised by cardiovascular and respiratory physicians. Self-reported cardiovascular events were compared with hospital episode statistics. Results indicate that after 5 years of follow-up, a majority of deaths (n=119) are due to pulmonary causes (53%), followed by cancer (24%) with fewer cases than expected having a cardiac cause of death (14%). Eight per cent died of other causes. In addition, there were only few severe cardiovascular events such as stroke and heart attack. It might be that globally the cause of death within COPD has changed over several decades with increased numbers of cardiac causes of deaths but our findings do not indicate as many cardiac deaths and this trend might at least exclude the UK and warrants further exploration.

P97 A CROSS-SECTIONAL ANALYSIS OF DOMAIN SPECIFIC COGNITIVE IMPAIRMENT IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction and Objectives The typical profile of patients with Chronic Obstructive Pulmonary Disease (COPD) includes a wide range of co-morbidity, with increasing evidence demonstrating an association between COPD and cognitive impairment. This cross-sectional study aims to demonstrate domain specific cognitive function and deficit in patients with mild-moderate COPD using the comprehensive Addenbrookes Cognitive Examination-III assessment (ACE-III). It also aims to compare the nature of cognitive impairment in patients with COPD to patients with Alzheimer's type dementia (AD).

Methods We enrolled 44 patients with mild or moderate COPD, 17 patients with mild or moderate AD and 28 control patients with a similar age profile and gender distribution. We analysed the difference in ACE-III total scores and domain specific scores between the groups and additionally performed logistic regression analyses to account for cardiovascular co-morbidity and smoking exposure.

Results Patients with COPD had significantly lower total ACE-III scores ($p<0.001$) compared to the control group with 47.5 percent of patients demonstrating scores below the recognised cut-off score for cognitive impairment of 88 out of 100. This association remained even when accounting for cardiovascular co-morbidity and smoking exposure. There was no significant difference in the visuospatial cognitive domain ($p=0.062$),