however should exercise caution with using interpretation of spirometry values documented in primary care records.

P224 THE ASSOCIATION BETWEEN DEGREE OF AIRFLOW LIMITATION AND DEGREE OF CORONARY ARTERY ATHEROMA IS NOT ATTRIBUTABLE TO SMOKING HISTORY

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Introduction Prevalence of coronary artery disease (CAD) in chronic obstructive pulmonary disease (COPD) is 16–53% (Smith and Wrobel. Int J Chron Obstruct Pulmon Dis. 2014;9:871–888), with ~25% COPD patients dying from cardiovascular disease. Diverse studies demonstrate ~2-fold increased risk of CAD in COPD after adjustment for known cardiovascular risk factors. By contrast, in asthma increased CAD risk appears to be restricted to smokers (Colak *et al*. Am J Respir Crit Care Med. 2015 Apr 27). Our objectives were to investigate the association between airflow limitation and severity of coronary artery atheroma in patients undergoing coronary angiography and to determine the effect of smoking on this relationship.

Methods Patients attending for elective coronary angiography March–July 2015 underwent clinical assessment and spirometry prior to the procedure. Coronary artery disease burden was quantified from angiograms using the Gensini score (Needland *et al*. Am Heart J 164:547–552). A single rater (Professor of Interventional Cardiology), blinded to clinical diagnosis, determined number and severity of lesions. Blinded repeats were performed and ratings compared to clinical reports to ensure reliability. A nonlinear score was assigned to each lesion based on the severity of stenosis and a multiplier applied depending on lesion location in the coronary tree. Lesion scores were summed to derive total score, which was log-transformed for analysis.

Results 233 people (age 66 ± 10 years (mean±SD), 69% male) had FEV_1 82 ± 21% predicted, FVC 89 ± 21% predicted, FEV_1:FVC ratio 73 ± 10%, Gensini median score 14 (IQR 6–33). On univariate analysis (Table 1), FEV_1 and FEV_1:FVC were significantly and inversely correlated with Gensini score, but Gensini was not significantly associated with smoking status or pack year load. On multivariate analysis, neither airflow limitation nor smoking were significant determinants of Gensini.

Conclusions People with more severe airflow limitation have more coronary atheroma, but smoking does not appear to be a direct determinant of this relationship. Shared comorbid disease (e.g. dyslipidaemia) between COPD and CAD may be more important than smoking in determining the association, supporting the hypothesis that COPD and CAD are part of a multi-morbid disease complex.

Abstract P224 Table 1 Univariate and multivariate relationships between log Gensini score, lung function and clinical variables

	Univariate analysis		Multivariate analysis (ANOVA)	
Pearson's correlation	**R value**	**P value**	**Partial eta^2**	**P value**
FEV_1% predicted	-0.149	0.036	0.01	0.191
FVC predicted	-0.116	0.105		
FEV_1:FVC	-0.157	0.027	0.000	0.964
Age	0.192	0.007	0.003	0.475
Waist to hip ratio	0.129	0.071		
Body mass index	-0.157	0.027	0.006	0.291
Systolic blood pressure	0.052	0.469		
Diastolic blood pressure	-0.056	0.436		
LDL cholesterol	0.145	0.049	0.049	0.003
HbA_{1c}	0.053	0.705		
Creatinine	0.165	0.02	0.002	0.518
hsCRP	-0.022	0.759		
Fibrinogen	0.078	0.285		
Charlson index	0.231	0.001	0.017	0.086
Pack year smoking history	0.080	0.259	0.000	0.795
Number of chest infections in last year	-0.141	0.047	0.012	0.152
ANOVA (categorical variables)	**F statistic**	**P value**		
Gender	8.6	0.004	0.035	0.013
Ever smoked	1.4	0.261		
Childhood respiratory illness	0.6	0.432		
Recurrent chest infections	3.0	0.084		

FEV_1, forced expiratory volume in 1 s, FVC, forced vital capacity; LDL, low density lipoprotein; HbA1c, glycated haemoglobin; hsCRP, high sensitivity C reactive protein; ANOVA, analysis of variance.

P225 IDENTIFYING ASTHMA PATIENTS IN WALES USING LATENT CLASS ANALYSIS OF ROUTINE DATA

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Background The Wales Asthma Observatory aims to produce current estimates of asthma prevalence and disease burden using routine data. In the absence of a feasible gold standard to validate case definitions, latent class analysis (LCA) can be employed.

Objectives To estimate the prevalence of treated asthma in Wales using LCA of routine health data.

Methods We performed LCA using observed variables of asthma-related healthcare diagnostics and utilisation in the fiscal year 2011–2012 for a random sample of 98,042 individuals in the Secure Anonymised Information Linkage (SAIL) databank. The observed variables were chosen if they exhibited expected distributions. Diagnostic performance of each of the observed variables was calculated. The model was tested for stability over multiple time windows and small area configurations. Since COPD can be misdiagnosed as asthma, a separate LCA was performed to identify COPD patients and cross-validate the asthma model.

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