84%, DLCO 50%, walk distance 292m. 48% had oxygen desaturation on 6-minute walk. 47 patients (26.9%) died. Mean follow-up was 19.8 months, median 14.4 months. 156 patients had >12 months follow-up and these were included in the prognostic evaluation.

Univariable survival analysis showed age, KBILD, FVC, DLCO, walk distance and exertional desaturation to have prognostic significance for all cause mortality. Univariable analysis of the sub-categories of the KBILD score showed the psychological ($p = 0.003$) and breathlessness ($p = 0.002$) domains to be significant, while the chest symptoms domain was not ($p = 0.269$).

After backwards stepwise selection the multivariable model contained age, KBILD, FVC and desaturation (Table 1). All included variables had prognostic significance.

AUROC analysis showed KBILD had equivalent sensitivity for 12-month mortality to FVC, DLCO and better sensitivity than walk distance (c-statistic in Table 1). A KBILD score of 34 had 75% sensitivity for 12-month mortality, but only 10.5% specificity. Estimated median survival with KBILD of <34 was 9.7 months, compared to 36.4 months for KBILD > 34 ($p = 0.02$).

Conclusions In this cohort, the KBILD has equivalent prognostic power in ILD to pulmonary physiology and exercise testing at a single point in time. It is important to assess HRQL to give ILD patients optimal prognostic information.

S21 IDENTIFICATION OF CLINICAL PROGNOSTIC PARAMETERS IN PATIENTS WITH IDIOPATHIC PULMONARY FIBROSIS

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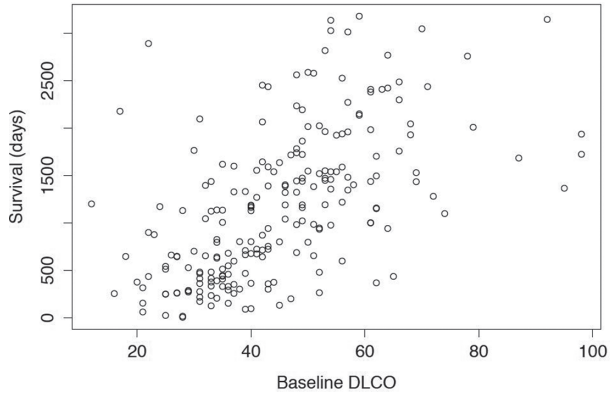
Idiopathic Pulmonary Fibrosis (IPF) is a progressive, scarring lung disease with a poor prognosis and median survival of 3 years. It is a heterogeneous disorder with varying rates of progression which presents a challenge for accurate prognostic prediction. The composite physiologic index (CPI) and the Gender, Age and Physiology (GAP) score are validated scoring systems for prognostic determination in IPF. Our data suggest these scoring systems have limited usefulness and we have undertaken a modelling approach to evaluate clinical prognostic parameters.

Methods Gender, age, smoking history, presence of emphysema on HRCT thorax and echocardiogram confirmed pulmonary hypertension were collected retrospectively from 253 IPF patients (in accordance with ATS/ERS criteria and MDT consensus) from a single centre in the UK between 19th April 2007 and 13th November 2014. Lung function including FEV_1, FVC, DLco and 6 minute walk test (distance, resting and minimum oxygen saturation and maximum heart rate) were collected at baseline, 6 and 12 months of follow up. Survival data were censored at 1st January 2016. The relationship between GAP or CPI and survival was analysed by Spearman's correlation, ROC area under the curve and Chi^2 analysis. Multivariate analysis and linear regression were used for the modelling.

Results Of the 253 patients included 188 were male (74%) with age 71.4 ± 8.3 years (mean ± SD). There were 164 (64.8%) ex-smokers and 12 (4.7%) current smokers. At presentation 19 patients had pulmonary hypertension and 35 had evidence of emphysema on HRCT thorax. Baseline lung function FEV_1 79 ± 22% predicted, FVC 82 ± 19% predicted, DLco 45 ± 15% predicted (mean ± SD). Median survival was 1169 days (3.2 years). The association between survival and CPI (r^2 0.59, $p < 0.01$) or GAP (r^2 0.45, $p < 0.01$) was modest. However ROC curve analysis demonstrated that GAP and CPI were poor predictors of survival. Chi^2 analysis shows there is no significant difference between these scoring systems. Multivariate analysis demonstrated that baseline% predicted DLco ($r^2 = 0.32$, $p = 6\times10^{-20}$) (Figure 1) had the strongest association with survival.

Conclusion Our data suggest that baseline percent predicted DLco may be a better predictor of outcome in patients with IPF. These results required validation by an independent cohort.



Abstract S21 Figure 1

Sleep Apnoea: The Big Sleep

S22 SEVERITY OF SLEEP DISORDERED BREATHING INDEPENDENTLY PREDICTS METABOLIC DYSFUNCTION IN A LARGE POPULATION OF SEVERELY OBESE SUBJECTS: THE ESADA STUDY

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Introduction Obstructive sleep apnoea (OSA) has an established independent association with insulin resistance and type 2 diabetes mellitus (T2DM). However, there are few data examining this relationship in severely obese populations, wherein any detrimental effect of OSA on metabolic health may conceivably be drowned out by the impact of morbid obesity. We assessed the relationship of OSA severity and nocturnal hypoxaemia with metabolic health in a cohort of severely obese patients attending sleep units across Europe.

Methods We performed a cross-sectional analysis of 1,434 participants in the European Sleep Apnea Cohort (ESADA) study with a body mass index (BMI) $\geq$35 kg/m^2, using multivariate regression analysis to assess T2DM prevalence according to OSA severity indices. Patients with diabetes were identified by history and medication prescription, and by screening for undiagnosed diabetes with glycosylated haemoglobin (HbA1c) measurement. The relationship of OSA severity with glycaemic control was assessed in diabetic subjects. Multivariate linear regression and multivariate analysis of co-variance were used to examine the