randomised placebo controlled studies are needed to support and confirm our findings.

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S57 PREDICTORS OF UPTAKE OF AMBULATORY OXYGEN ON COMPLETION OF THE AMBOX TRIAL, A STUDY TO ASSESS EFFECTS OF AMBULATORY OXYGEN ON QUALITY OF LIFE IN PATIENTS WITH FIBROTIC INTERSTITIAL LUNG DISEASE

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Background There are no ILD specific guidelines on the use of ambulatory oxygen. The AmbOx trial is a multicenter, randomised, cross-over controlled trial (NCT02286063), to assess quality of life during two weeks on ambulatory oxygen compared to two weeks off oxygen, in patients with fibrotic ILD.

Methods Individuals with fibrotic ILD whose oxygen saturation was normal at rest, but dropped to ≤88% on a 6MWT, with stable symptoms during a two week run-in period, were recruited and randomised. Primary outcome: health status assessed by King's Brief ILD questionnaire (KBILD). A simple question on whether breathlessness had changed (better, same, worse) over the previous two weeks was a key secondary outcome. Patients' experiences with portable oxygen were explored through interviews in a subgroup. At the end of the four week trial period, patients were asked if they wished to continue with the ambulatory oxygen.

Results Out of 84 randomised patients, 76 completed the trial. Mean age 64.5±1.1 years, 58 males, 53 ever smokers, FVC 73.3%±19.1%, DLCO 38.7%±12.8%. 43 patients had possible/definite IPF. Ambulatory oxygen, compared to no oxygen, was associated with improvements in total KBILD score ($p<0.0001$). At the end of the two weeks on oxygen, the majority of patients reported improved breathlessness (better:52/76 – same:23/76 – worse:1/76), compared to the two weeks on no oxygen (better 1/76 – same:57/76 – worse:18/76). On trial completion, 51/76 (67%) of patients chose to continue on ambulatory oxygen. On multivariate analysis, factors independently predictive of the patient's decision to continue, included younger age (64.8 vs 72.8 years, $p=0.002$), more severe disease (CPI 55.5 vs 49.1, $p=0.003$) and patient's global assessment of improvement in breathlessness (OR 3.2, $p=0.018$). Despite symptomatic improvements in the majority, ambulatory oxygen was also associated with a number of patient-reported challenges, explored in the patient interviews.

Paediatric asthma: big and real world data

S58 FEV1 AND FENO AS PREDICTORS OF ASTHMA OUTCOMES IN CHILDREN? AN INDIVIDUAL PATIENT DATA ANALYSIS USING DATA FROM SIX FENO TRIALS

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Introduction Some guidelines advocate using FEV_1 and/or fractional exhaled nitric oxide (FeNO) in the management of childhood asthma, but evidence supporting these recommendations is generally unsupportive. Our hypothesis was that reduced FEV_1 and/or elevated FeNO measurements were associated with increased risk of future asthma attacks and loss of asthma control.

Methods Data were obtained from six trials where FeNO was used to guide asthma treatment. Baseline% FEV_1 and FeNO were linked to exacerbation and loss of control between baseline and three months. Change in% FEV_1 and% change in FeNO between baseline and 3 months were also linked to exacerbation and loss of control between three and six months after baseline. A one-stage individual patient data meta-analysis was conducted using a random effect for study. Baseline confounders included in the model were age, sex, LABA, LTRA, ICS dose, trial arm, control and FeNO or FEV_1 as appropriate.

Results Data were available in 1049 children (58% male, mean age 12.7 years) from six trials. Each unit reduction in baseline% FEV_1 was associated with increased risk for future exacerbation (OR 1.02 [1.00, 1.03] n=935, $p=0.034$) and with increased risk for loss of control (1.01 [1.00, 1.02], n=940, $p=0.026$) after three months. Similar associations were present between change in%FEV_1 and outcomes after six months. Baseline FeNO was not related to asthma outcomes but each 10% increase in FeNO between baseline and three months was associated with increased risk for loss of asthma control by six months (OR 1.02 [1.01, 1.03], n=725, $p=0.009$) but not with asthma exacerbation. Falling% FEV_1 and rising% FeNO between baseline and three months were independently associated with loss of control at six months.

Conclusions Baseline% FEV_1 is rather weakly associated with future asthma outcomes, and change in%FEV_1 between visits does not strengthen this association. In contrast, baseline FeNO is not related to future outcomes but% change in FeNO has some precision for future asthma control. The utility of%FEV_1 and FeNO in childhood asthma management needs to be rigorously evaluated in a clinical trial.