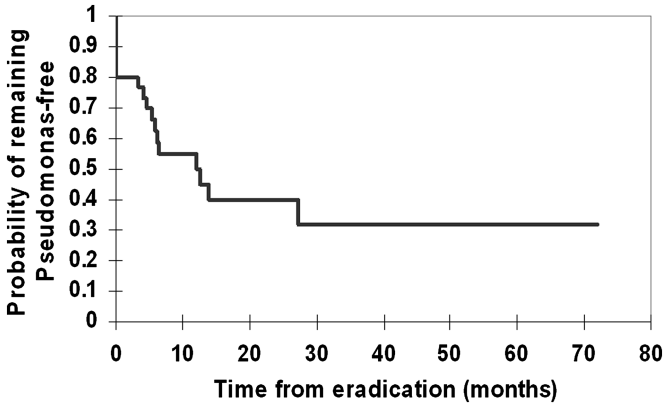

Abstract S130 Figure 1 Kaplan–Meier curve showing Pseudomonas-free time following eradication therapy.

eradication (p=0.002). Mean number of hospital admissions per year were similar, at 0.39 pre-eradication and 0.29 post-eradication (p=NS). At first follow-up, 20 patients (66.7%) reported overall clinical improvement, with reduced cough in 12 (40.0%), reduced sputum volume in 14 (46.7%) and reduced sputum purulence in 11 (36.7%). Of the 21 patients followed up to 1 year, 6 (28.6%) had further overall improvement and 13 (61.9 %) remained stable. Lung function was not affected by eradication therapy, with mean percentage predicted FEV_1 62.1% pre and 64.1% post-eradication (p=NS).

Conclusion This study demonstrated that *Pseudomonas* eradication therapy can lead to prolonged clearance of this organism and highly significantly reduces exacerbation rate. This important outcome requires confirmation in a prospective study.

S131 FATIGUE IN BRONCHIECTASIS: ITS RELATIONSHIP TO PSEUDOMONAS COLONISATION, DYSPNOEA AND AIRFLOW OBSTRUCTION

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Introduction and objectives Fatigue is a complex and disabling symptom in non-CF bronchiectasis (nCF-Br) and can be formally measured using the Fatigue Impact Scale (FIS). FIS scores of >40 out of 120 are clinically significant. The FIS score has been shown to be prognostic of premature death in Primary Biliary cirrhosis but is not linked to markers of organ dysfunction (liver function tests). As poorer outcomes have been recently reported in *Pseudomonas* infected nCF-Br patients we aimed to measure the correlation between FIS scores and parameters of severity in nCF-Br, for example, *Pseudomonas* infection, degree of dyspnoea and airflow obstruction.

Methods FEV_1% predicted, MMRC dyspnoea score (MMRCD) and FIS were recorded in stable adult nCF-Br patients attending specialist clinic. All previous sputum cultures isolating *Pseudomonas aeruginosa* were reviewed. Two groups of patients were studied: those with *Pseudomonas* 'colonisation' (organism cultured ≥2 occasions, 3 months apart within 1-year period) and those with 'isolation' (organism cultured ≥1 occasion). Statistical comparison used χ^2, Fisher's correlation and Mann–Whitney U tests.

Results 73F, 41M patients were included; average age 60 (range 24–90) with an average FEV_1 66% predicted (SD +/−26%). 54 (47%) patients had *Pseudomonas* isolation; 38 (33%) patients had colonisation. Fatigue levels were similar in patients with and without colonisation (median 48.5 vs 36.5, p=0.31). Significant fatigue (FIS>40) was more common in patients with *Pseudomonas* isolation (47%) than those with no previous isolates (p=0.04, OR=2.2) However, fatigue levels, although increased, were not significantly different (median FIS 50 vs 32; p=0.064). Fatigue correlated with MMRCD (r=0.54, p<0.0001) but less well with FEV_1% predicted (r=0.2, p=0.04). FEV_1% predicted was lower in patients with *Pseudomonas* colonisation (median FEV_1 49% vs 74%, p=0.0007) and in patients with *Pseudomonas* isolation (median FEV_1 52% vs 74%, p=0.002).

Conclusions *Pseudomonas* infection (past or present) appears to be associated with greater clinically significant fatigue scores and poorer lung function. Fatigue doesn't strongly correlate with FEV_1 % predicted but is correlated with MMRCD. Further regression analysis of variables is underway to understand these inter relationships further. Systemic aspects of Pseudomonas infection may be different to other infections explaining the divergence.

Clinical and translational observations in asthma

S132 AIRWAY DYSFUNCTION AND INFLAMMATION IN POOL AND NON-POOL BASED ELITE ENDURANCE ATHLETES

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Introduction Previous studies have suggested that eosinophilic airway inflammation is common in elite swimmers; the chemical pool environment often blamed. We set out to address this question in a cross-sectional study of 109 international athletes from a variety of sporting backgrounds.

Methods All had symptoms suggesting exercise-induced asthma and were either inhaled corticosteroid naïve or withdrew these for >4 weeks. β_2-agonists, exercise and caffeine were withheld for 8 h prior to testing. Symptoms were assessed using the Juniper ACQ, airways dysfunction using the eucapnic voluntary hyperventilation (EVH) test and airways inflammation using exhaled nitric oxide (FE_{NO}) and induced sputum eosinophil % (eos). Athletes were classed as pool based if they exercised in an indoor pool environment for >5 h per week, and non-pool based if they exercised in a pool for <1/2 h per week.

Results Demographic details were similar. Mean (±SEM) % fall in FEV_1 post EVH was 18.96±1.701 (n=47) in pool and 11.39±1.249 (n=62) in non-pool athletes (mean difference 7.569; 95% CI 3.480 to 11.66; p=0.0004), 76% of pool and 39% of non-pool athletes had a positive test (>10% fall). The geometric mean (log SD) eos (pool 2.667 (0.797)), non-pool 3.060 (0.867), p=0.802), and FE_{NO} (pool 25.05 (1.570), non-pool 28.06 (1.475) ppb, p=0.914) was no different between groups; 14.9% of pool and 12.9% of non-pool athletes had eos >3%. % fall in FEV1 had good correlation with log eos (r=0.551, p<0.0001); a 25% fall being the optimum (AUC 0.89, p<0.0001, sens 79%, spec 93%). Log FE_{NO} and log eos correlated strongly (r=0.644, p<0.0001); FE_{NO} of >47 being most predictive of eos>3% (AUC 0.912, p<0.0001, sens 78%, spec 92%). Symptoms correlated poorly with either airways dysfunction or inflammation.

Conclusions Individual athletes with symptoms vary markedly in the levels of airways dysfunction and inflammation expressed. There is more airway dysfunction in pool athletes but not more eosinophilic airways inflammation suggesting that the pool