medication. Baseline sweat chloride was recorded, and repeated at 2 months. Baseline pulmonary function, height and weight were recorded and repeated at monthly visits for 3 months.

Results To date 24 of 27 suitable subjects have commenced Ivacaftor. Mean FEV_1% predicted was 64.3% predicted at Ivacaftor commencement and mean BMI was 22.1 kg/m^2. Mean FEV_1 percent predicted increased in absolute terms by 8.9% at 1 month and 8.7% at 3 months ($p < 0.001$ at both time points). Mean BMI improved to 22.7 kg/m^2 at 1 month and 23.0 kg/m^2 at 3 months ($p = 0.002$, 0.003 respectively). There was a significant fall in sweat chloride at 2 months (median 114 to 51 mmol/L, $p < 0.001$). Improvement in sweat chloride was not correlated in absolute or relative terms with improvements in pulmonary function or BMI. Four subjects with a mean absolute FEV_1 improvement of 14.5% had sweat chloride responses not meeting pre-specified criteria at 2 months. Two of these subjects had a subsequent repeat test meeting continuation criteria. In one subject a suboptimal response was attributed to the omission of a single dose.

Conclusions The use of sweat chloride as a surrogate for clinical efficacy and a criterion for drug continuation is not supported by this data. Sweat chloride may be a marker of 100% adherence to therapy.

P103 CULTURE AND CULTURE INDEPENDANT IDENTIFICATION OF BACTERIAL COMMUNITIES IN THE CYSTIC FIBROSIS RESPIRATORY TRACT

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Introduction and Aims The identification of complex chronic polymicrobial infections, such as those observed in the cystic fibrosis (CF) airways, are often a diagnostic challenge. Few studies have compared culture-dependent methods with molecular identification making it hard to describe bacterial communities in a comprehensive manner. The aim of the study is to compare four different methods with respect to their similarities and differences in detection of bacteria.

Methods We compared41 sputum samples fromroutine clinical-culture, extended-culture (aerobic and anaerobic), and molecular identification such as Roche 454-FLX Titanium and T-RFLP to assess concurrence between methodologies in detecting bacteria. The agreement between methodologies in detecting either absence or presence of bacterial taxa was assessed by Kappa ( ) statistics.

Results The majority of bacterial taxa identified by culture were also identified with molecular analysis. In total 2, 60, 25, and 179 different bacterial taxa were identified with clinical-culture, extended-culture, T-RFLP and 454-FLX respectively. Clinical-culture, extended-culture and T-RFLP were poor predictors of species richness when compared to 454-FLX ($p < 0.0001$). Agreement between methods for detecting *Pseudomonas* sp. and *Burkholderia* sp. was good with ≥ 0.7 [$p < 0.0001$] and ≥ 0.9 [$p < 0.0001$] respectively. Detection of anaerobic bacteria, such as *Prevotella* sp. and *Veillonella* sp., was moderate between extended-culture and 454-FLX with $= 0.461$ [$p < 0.0001$] and $= 0.311$ [$p = 0.032$] respectively, and good between T-RFLP and 454-FLX with $= 0.577$ [$p < 0.0001$] and $= 0.808$ [$p < 0.0001$] respectively. Agreement between methods for other main bacterial taxa, such as *Staphylcoccus* sp. and *Streptococcus* sp., was poor with only a moderate agreement for detection of *Streptococcus* sp. observed between T-RFLP and 454-FLX ($= 0.221$ [$p = 0.024$]).

Conclusions This study demonstrates the increased sensitivity culture-independent microbial identification such as the 454-FLX have over clinical-culture, extended-culture and T-RFLP methodologies. The extended-culture detected majority of the most prevalent bacterial taxa associated with chronic colonisation of the CF airways which were also detected by culture-independent methodologies. However, agreement between methods in detecting number of potentially relevant bacteria is largely lacking.

P104 NEBULISED HYPERTONIC SALINE IMPROVES QUALITY OF LIFE IN ADULT PATIENTS WITH NON-CYSTIC FIBROSIS BRONCHIECTASIS

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Background Nebulised hypertonic saline (HTS) improved lung function, quality of life and exacerbation frequency in a study of patients with non-cystic fibrosis (CF) bronchiectasis[1]. It may improve chest clearance by increasing water content of airway surface liquid, enhancing mucociliary clearance. A protocol was developed for the use of HTS in a district hospital setting. Safety, tolerability, lung function and quality of life data are presented.

Methods Patients with non-CF bronchiectasis were assessed on a locally developed chest clearance pathway consisting of active cycle breathing technique, postural drainage, flutter device and mucolytic. Patients with ongoing symptoms were given a trial dose of 4 mls HTS 7% with spirometry measured pre and post. Patients continued on 4 mls HTS od/bd for 12 months if tolerated. Adverse effects, quality of life and spirometry was collected at 4 weeks and 6 months. Data were compared using paired t tests.

Results 34 patients (mean age 62, 25 female, mean FEV_1 66% predicted) were assessed. 2 (6%) patients did not proceed with treatment due to (a. FEV_1 decline >15% and b. severe nausea).

Abstract P104 Table 1. Changes in LCQ and SGRQ scores.

Leicester Cough Questionnaire	Pre HTS Mean (SD)	4/52 Mean (SD)	p value	6/12 Mean (SD)	p value
Physical	3.7 (1.4)	4.1 (1.4)	0.002*	4.0 (1.5)	0.28
Psychological	4.2 (1.7)	4.8 (1.4)	0.001*	4.7 (1.6)	0.28
Social	4.1 (1.9)	4.7 (1.6)	0.001*	4.6 (1.7)	0.20
TOTAL	11.8 (4.6)	13.7 (4.3)	0.0003*	13.3 (4.5)	0.15
St Georges Respiratory Questionnaire	**Pre HTS Mean (SD)**			**6/12 Mean (SD)**	**p value**
Symptoms	83.2 (14.2)			74.6 (19.0)	0.02*
Activity	78.0 (22.5)			68.7 (27.0)	0.14
Impact	57.2 (18.7)			43.7 (22.9)	0.07*
TOTAL	67.8 (18.7)			56.1 (20.7)	0.01*

9 (26%) patients experienced mild side effects. FEV_1 improved significantly at 4 weeks (1.53 vs 1.41 p = 0.01). Leicester Cough Questionnaire improved significantly at 4 weeks (mean total score 13.7 vs 11.8 p = 0.0003) with a mean difference in LCQ of 1.9 (minimum clinically important difference MCID > 1.3[2]). St Georges Respiratory Questionnaire improved significantly at 6 months (mean total score 56.1 vs 67.8 p = 0.01) with a mean difference of 11% (MCID > 4%[3]).

Conclusions In this uncontrolled study, HTS was well tolerated and resulted in improved lung function and quality of life in patients with non-CF bronchiectasis.

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P105 OUTPATIENT SURVEY OF PATIENT EXPERIENCE OF HYPERTONIC SALINE USE IN NON-CYSTIC FIBROSIS BRONCHIECTASIS

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Introduction and Objectives Hypertonic Saline (HTS) is known to accelerate tracheobronchial clearance and is felt to provide a useful adjunct to physiotherapy for airway clearance in bronchiectasis[1]. Previous studies have demonstrated improvement in lung function, quality of life and healthcare utilisation with the use of HTS in non-CF bronchiectasis[2]. We have surveyed use and patient experience of HTS in our non-CF bronchiectasis clinic.

Method All patients seen in our non-CF Bronchiectasis clinic over a four month period were invited to answer a questionnaire. Questionnaires were filled in anonymously and either returned to a box in clinic or by post.

Results A total of 96 patients returned a questionnaire. Overall 114 patients were invited to respond, resulting in a response rate was 84%. 55 respondents (57%) were current or past users of HTS, with 36 (65%) of these still using HTS. 49 (89%) of those who had used HTS had done so for at least a month. The percentage of patients using HTS who indicated an improvement in Airway Clearance, Breathlessness and Quality of Life, were 80%, 60% and 67% respectively. Of the 19 patients who had stopped treatment, only 6 (32%) did so due to side effects. The total number of patients who had experienced side effects was 10 (18%).

Conclusion Our survey demonstrates that a significant proportion of attendees to our non-CF Bronchiectasis clinic are taking, or have taken HTS treatment. Continued treatment is supported by positive feedback by patients on impact on symptoms and quality of life, as well as reasonable tolerability and side effect profile.

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P106 LUNG CLEARANCE INDEX IS A REPEATABLE TEST OF LUNG FUNCTION AND SUPERIOR PREDICTOR OF CT SCAN ABNORMALITIES IN BRONCHIECTASIS

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Introduction In cystic fibrosis, lung clearance index (LCI) is a sensitive predictor of CT scan determined lung pathology. In bronchiectasis (BE) there is a need for improved markers of lung function to gauge disease severity and response to interventions in clinical trials.

Aims To assess if LCI is a repeatable and superior predictor of CT scan abnormalities compared with FEV_1 in BE.

Methods 60 patients with stable BE were recruited. LCI (using SF_6 multiple breath washout), spirometry and CT scores were collected. Health related quality of life (HRQoL) was measured using the St. George's Respiratory Questionnaire. A separate group of 30 BE patients were recruited and LCI, spirometry and HRQoL were assessed when clinically stable on 2 occasions, 2 weeks apart.

Results Mean (SD) age was 62 (10) years, FEV_1 76.5 (18.9)% predicted, LCI 9.1 (2.0) and total CT score 14.1 (10.2)%. FEV_1 negatively correlated with LCI (r = -0.51, p < 0.0001.) Across all CT score subscales, there was clear evidence of a relationship with LCI, with no or very weak evidence of any additional effect of FEV_1. The strongest correlations of subgroup CT scores with LCI were seen in),% parenchymal score (r = 0.56, p < 0.001), % mucus plugging (r = 0.49, p < 0.001),% total score (r = 0.55, p < 0.001)% bronchiectasis (r = 0.41, p < 0.01. There was no association for either FEV_1 or LCI with% airway thickening and for % bronchiectasis score and FEV_1. There were no significant associations between LCI or FEV_1 and HRQoL. The inter-visit ICC for LCI was 0.94 (95% CI 0.89 to 0.97, p < 0.001).

Conclusions LCI is a valid and repeatable test of lung function in BE. It is a superior predictor of lung function than FEV_1 in the detection of abnormalities demonstrated on CT scan. LCI is a useful test in patients with early lung disease or those with preserved spirometric scores. LCI also has the potential to be an alternative outcome measure to spirometry in clinical trials.

P107 IMPLICATIONS OF ADVERSE DRUG REACTIONS TO ANTIBIOTICS IN THE MANAGEMENT OF BRONCHIECTASIS

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Introduction and Objectives Antibiotic adverse reactions present a challenge when choosing appropriate treatment for patients with Bronchiectasis. We explored our data for antibiotic allergy and microbiological resistance in Bronchiectasis patients in a specialist clinic at the Queen Elizabeth Hospital Birmingham.

Methods We collected retrospective and prospective data on 243 patients from our Bronchiectasis clinic. We limited our microbiological data to colonised or most recent sputum culture.

Results We have 243 patients on our register. There were 84 (34.6%) males and 159 (65.6%) females. Bronchiectasis was confirmed in 234 patients with CT (Computerised Tomography) scan. The most common aetiology was post-infective.