P238 CHARACTERISTICS, TREATMENT PATTERNS AND OUTCOMES OF PATIENTS WITH NON-CF BRONCHIECTASIS: A SINGLE INSTITUTION DISTRICT GENERAL HOSPITAL (DGH) ANALYSIS

doi:10.1136/thx.2010.151068.39

M J McDonnell, C Mashamba, A Foden. *County Durham and Darlington NHS Foundation Trust, Darlington, Tyne and Wear, UK*

Introduction Non-CF bronchiectasis has been the subject of analysis for several years with limited guidelines available regarding appropriate investigation and management strategies to optimise patient care. Non-CF bronchiectasis is common and, unlike CF, is often managed by general respiratory physicians in a DGH setting. BTS consensus, based largely on case-control series and cohort studies, has recently been published to aid clinicians in diagnosis and management.
Objectives The aim of this retrospective study is to present data on patient characteristics, treatment patterns, and treatment results in an unselected patient group with non-CF bronchiectasis over a 9-year period.
Methods From January 2000 to December 2009, we reviewed the clinical, radiological, microbiological, and physiological findings in 73 well-studied patients with proven non-CF bronchiectasis. We collected data on drug and non-drug management, including side effects and response to treatment-measured as improvement in pulmonary lung function (PFTs).
Results There was a male:female ratio of 1:2 with mean age of 51.4 years (range 3–81); 46.6% were lifetime non-smokers. Idiopathic bronchiectasis was confirmed in 54.7% patients on completion of full bronchial sepsis screen. Of the idiopathic group, 42.5% were smokers; 22.5% of these were confirmed to have COPD prior to diagnosis of bronchiectasis. HRCT confirmed diagnosis of bronchiectasis in 82.2% of patients with bibasal predominance in majority. Initial CXR was abnormal in 62.8%. PFTs documented airway obstruction in 54% of lifetime non-smokers. Smokers had greater degree of airway obstruction than non-smokers and greater number of exacerbations/patient/year. Pathologic microbial flora isolated from sputum included Haemophilus influenza and other opportunistic organisms. 17.8% patients were colonised with *Pseudomonas aeruginosa* and treated with prophylactic nebulised antibiotics. There was no relationship between COPD and pseudomonas colonisation. 5.5% patients were treated with prophylactic oral antibiotics. Side-effects occurred in 4.1% overall (*Clostridium difficile*). Factors contributing to worsening of PFTs include increased number of exacerbations/patient/year, pseudomonas colonisation and smoking status.
Conclusion We provide a comprehensive analysis of a contemporary patient population. Treatment patterns fit well in the context of current consensus based on international trials. We suggest a likely correlation between the pathophysiology of COPD and bronchiectasis which warrants further investigation with randomised controlled trials.

P239 AUDIT OF ONCE DAILY NEBULISED HYPERTONIC 6% SALINE (HTS) IN ADULT NON-CF BRONCHIECTASIS

doi:10.1136/thx.2010.151068.40

H Pyne, B Kane, B R O'Driscoll. *Salford Royal Foundation hospital Trust, Salford, UK*

Background Nebulised hypertonic 7% saline enhances sputum clearance in patients with bronchiectasis and hypersecretion (Kellet F *et al* Med 2005; **99**:27–31) but is not licensed for this purpose. It is expensive to produce, has a short shelf life and is difficult to administer. Mucoclear® 6% saline does not have these disadvantages so we wished to evaluate its clinical benefits.
Method Patients with troublesome bronchiectasis were invited for a nebulised 6% HTS challenge. If no adverse reaction occurred, they administered HTS daily for 2 months
Results 60 patients were assessed over 18 months. Ten had bronchospasm after HTS, 9 did not wish to continue treatment and 41 reported an initial positive response and administered HTS once daily for 2 months. All 41 patients reported improved ease of sputum clearance with a median 3 point increase on a 10 unit Viausal Analogue Scale. 49% reported increase in sputum volume. 10 patients had baseline oxygen saturation ≤95% with ≥2% rise on HTS. 59% reported an increase in quality of life on Juniper mini asthma quality of life questionnaire (mean 0.6 unit rise overall and 1.0 for responders; rise of >0.5 units is significant). Mean FEV_1 rose 9.5% (from 1.68 to 1.84 litres) and mean FVC rose 10.5% (from 2.48 to 2.74 litres). (Wilcoxon test $p<0.001$). There was no change in spirometry for seven patients with normal baseline measurements but FEV_1 rose by 13% and FVC rose by 12% among 34 patients with abnormal lung function. All patients reported a noticeable improvement in their condition (12% reported "life changing improvement").
Conclusion Despite standard therapies some adults with bronchiectasis have persistent troublesome hypersecretion. Two thirds of our patients reported a significant improvement in symptoms using HTS and, for some, this was life changing. This suggests that Mucoclear® 6% hypertonic nebulised saline is a viable option but controlled trials are needed.

P240 LONGITUDINAL STUDY OF SPUTUM MICROBIOLOGY IN ADULT NON-CF BRONCHIECTASIS

doi:10.1136/thx.2010.151068.41

[1]J G Macfarlane, [2]P McAlinden, [3]A De Soyza. *[1]Freeman Hospital Respiratory Department, Newcastle Upon Tyne, UK; [2]William Leech Clinical Research Centre, Newcastle upon Tyne, UK; [3]Institute of Cellular Medicine, Newcastle University, Newcastle upon Tyne, UK*

Introduction and Objectives Monitoring longitudinal sputum microbiology in adults with non-CF bronchiectasis (nCF-Br) is a key strategy in guiding targeted antibiotic therapy. There is minimal published data on the microbiological profile over time in bronchiectasis.[1 2] Similar to CF, greater pathogen diversity is now being observed; hence we have revisited this area.
Methods 12 years of previous sputum culture results obtained from 143 nCF-Br patients attending a specialist clinic were retrospectively reviewed. 'Colonisation' (organism cultured ≥2 occasions, 3 months apart within 1-year period) and 'isolation' (organism cultured ≥1) were recorded.
Results 88F, 55M patients; average age 60.6 (range 16–90); average FEV_1 65% predicted (SD ± 26%). The most common pathogens were *Haemophilus influenzae* (52% isolated and 33% colonisation; 8% were beta-lactam producing) and *Pseudomonas aeruginosa* (43% isolated and 35% colonisation) whilst 20% patients had no pathogens cultured. 81 patients (57%) have never had *Pseudomonas*. Of 62 patients (43%) isolating *Pseudomonas,* 12 patients (8%) had single isolates, 8 (6%) had colonisation with successful eradication therapy. *Streptococcus pneumoniae* (34%), Coliforms (30%), *Moraxella catarrhalis* (27%), *Staphylococcus aureus* (24%) were other common isolates. Rarer pathogens include *Aspergillus* sp. (9%), *S.maltophilia* (8%), non-tuberculous mycobacteria (NTM 3%; *M. terrae*, *M. avium* and *M. simiae*), MRSA(3%), *Acinetobacter* sp. (3%) and *Achromobacter xylosoxidans* (3%).
Conclusions We note similar rates of *H. influenzae* colonisation as previously (33% vs 40%[1]) but higher rates of *Pseudomonas* colonisation (35% vs 18%[1] and 24%[2]). Including those with any prior *Pseudomonas,* the rates of *Pseudomonas* isolation reach as high as 43% (higher than reported at 31%[2]). Our unit receives referrals from the local immunodeficiency centre and other respiratory

units but this is not felt to account for the high *Pseudomonas* rates. Ongoing surveillance of individual and geographically local microbiological profiles is important in managing patients with nCF-Br.

Abstract P240 Table 1 Longitudinal study of sputum microbiology in adult non-CF bronchiectasis

	Isolated*	Colonising†
Organism	n (%)	n (%)
Haemophilus influenzae	75 (52)	47 (33)
Pseudomonas aeruginosa	62 (43)	50 (35)
Streptococcus pneumoniae	42 (30)	13 (9)
Coliforms (including *Klebsiella sp, Serratia sp, Proteus sp, E. Coli and Enterobacter cloacae*)	42 (30)	13 (9)
Moraxella catarrhalis	39 (27)	9 (6)
Staphylococcus aureus	34 (24)	12 (8)
Aspergillus sp.	13 (9)	3 (2)
Stenotrophomonas maltophilia	12 (8)	2 (1)
MRSA	5 (3)	3 (2)
Acinetobacter sp.	5 (3)	3 (2)
Achromobacter xylosoxidans	4 (3)	2 (1)
Non-tuberculous mycobacteria	4 (3)	1 (0.7)
Comamonas testosteroni	2 (1)	1 (0.7)
Others	9 (6)	1 (0.7)
No organism isolated	28 (20)	

*Organism isolated from a patient one or more times within a 1-year period.
†Organism cultured on at least two occasions, 3 months apart within a 1-year period.

REFERENCES

1. **King PT,** *et al*. Microbiologic follow-up study in adult bronchiectasis. *Respir Med* 2007.
2. **Pasteur MC,** *et al*. An investigation into causative factors in patients with bronchiectasis. *Am J Respir Crit Care Med* 2000.

P241 FUNCTIONAL IMPAIRMENT IN PATIENTS WITH BRONCHIECTASIS

doi:10.1136/thx.2010.151068.42

[1]N S Gale, [2]J M Duckers, [3]M Munnery, [1]S Enright, [2]D J Shale. *[1]School of Healthcare Studies, Cardiff University, Cardiff, UK; [2]Department of Respiratory Medicine, Cardiff University, Cardiff, UK; [3]Wales Heart Research Institute, Cardiff University, Cardiff, UK*

Background Patients with bronchiectasis have impaired quality of life and exercise capacity[1]; however, other functional impairments have not been fully evaluated. We hypothesised that patients with bronchiectasis would have impaired functional activities; reduced grip strength, increased timed up and go test (TUG) and increased fatigue which would be associated with reduced quality of life (QoL).
Methods We studied 20 (4 male) clinically stable patients with bronchiectasis and 20 age, sex and smoking matched controls. In all subjects FEV_1%, BMI, TUG, grip strength and 6 minute walk distance (6MWD) were measured. The TUG is a measure of functional mobility which records the time for a person to stand up from a chair, walk 3 m, turn around and sit down again. All subjects completed the multidimensional fatigue inventory which includes five domains of fatigue (each scored out of 20, higher scores indicate greater fatigue), and a self-reported physical activity score. Quality of life was measured in patients using the validated Saint Georges Respiratory Questionnaire (SGRQ).[2]
Results Patients and controls had similar demographics (Abstract P241 Table 1). However, patients had increased TUG and reduced grip strength and 6MWD compared to controls. They also reported greater fatigue and reduced physical activity. In patients, the TUG was inversely related to grip strength ($r=-0.528$, and 6MWD ($r=-0.478$), (both $p<0.05$) but not fatigue, QoL or FEV_1%. The 6MWD related directly to all domains of fatigue (except mental) and the SGRQ (all $p<0.05$). All domains of fatigue (except mental) related to total SGRQ.

Abstract P241 Table 1

	Controls (n=20)	Patients (n=20)
Age (years)	62 (36–69)	65 (42–80)
FEV_1 (% predicted)	105.1 (9.1)	67.8 (25.8)**
BMI (kg/m^2)	25.1 (4.6)	25.8 (4.3)
6MWD (m)	498.8 (86.4)	352.5 (115.8)**
Time up and go (s)	7.0 (5.3–8.0)	8.5 (7.0–17.8)**
Handgrip (kg)	27.3 (14.0–44.5)	23.5 (15.0–41.0)*
Physical activity score (METs)	39 (29–75)	33 (26–47)*
General fatigue	10 (4–13)	16 (5–20)**
Physical fatigue	6.5 (4–11)	13.5 (5–20)**
Reduced activity	6 (4–9)	10 (4–20)**
Reduced motivation	5.5 (4–8)	9 (4–16)**
Mental fatigue	8 (4–15)	8 (4–19)

*$p<0.05$, **$p<0.001$.
Data are mean (SD), or median (range).
6MWD, 6 min walk distance; METs, metabolic equivalents.

Conclusions Patients with bronchiectasis have impaired functional activities and increased fatigue. Fatigue may result in reduced physical activity and reduced endurance (measured by 6MWD) which affect QoL more than short-lived functional activities.

P242 THE TREATMENT OF *PSEUDOMONAS AERUGINOSA* (PA) IN NON-CF BRONCHIECTASIS

doi:10.1136/thx.2010.151068.43

[1]O Hewitt, [2]L Mc Crossan, [1]R Hanna, [1]J Rendall, [3]J M Bradley, [2]J S Elborn. *[1]Regional Respiratory Centre City Hospital Belfast, Belfast, UK; [2]Queens University Belfast, Belfast, UK; [3]University of Ulster, Belfast, UK*

Introduction Pseudomonas aeruginosa (PA) is a common bacteria in bronchiectasis, and infection with PA is associated with worsening symptoms that may lead to an accelerated decline in FEV_1.
Aims To review the current treatment of infection with PA, at the Regional Respiratory Centre, City Hospital Belfast to determine the success rate of eradication treatment and to assess if PA had any impact on lung function following 3 months of treatment.
Methods Medical notes of patients that had positive culture for PA requiring nebulised antibiotic treatment from August 2007 to October 2008 were reviewed. Where available, data relating to antibiotic therapy prescribed, presence of PA and lung function was recorded at the start of treatment, following 1 month of treatment and following 3 months of treatment.
Results Data from 91 patients, mean age (SD) 65 (11) years, baseline FEV_1 1.5 (0.7) %, FVC 58 (21.4) % were analysed. 58/91 (64%) patients had a first ever recorded isolate of PA and 29/91 (32%) had previous sputum cultures with PA. First line treatment included oral ciproxin (n= 49/91; 54%) and IV anti pseudomonal antibiotics (n=27/91; 30%). 10/91 (11%) did not have a complete treatment due to side effects. Mean (SD) treatment duration of oral ciproxin was 3.67 (2.1) weeks; range 2–12 weeks. Patients were also prescribed nebulised antibiotic treatment: colomycin (n=84/91; 92%) and tobramycin (n=7/91; 8%). After 1 month of nebulised treatment (n=76) 55/76 (72%) had eradicated PA. Following 3 months of treatment (n=83), treatment of new isolates of PA in sputum was successful in eradication in 57/83 (69%) of patients. No improvements in lung function were noted.