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Title: Patterns of spirometry in bronchiectasis patients and relationship to markers of disease severity and hospitalisation

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Body: Introduction: Bronchiectasis can be associated with obstructive, restrictive or normal spirometry. Reduced FEV1 is associated more severe disease, but no studies exist comparing these 3 patterns of lung function. Methods: Data from 89 consecutive patients with HRCT confirmed bronchiectasis was collected and patients classified as having obstructive spirometry (FEV1 <80% pred, FEV1/FVC ratio <70%), restrictive spirometry (FEV1 <80% pred, FEV1/FVC >70% pred) or normal spirometry. Results: Patients with obstructive spirometry had more bacterial colonisation, particularly with Pseudomonas aeruginosa (Table 1). There was a trend suggesting more severe bronchiectasis using the modified Reiff score (HRCT disease severity) in patients with obstruction and restriction. Patients with restrictive spirometry had a similar severity of bronchiectasis and hospitalisation rate to patients with airflow obstruction.

Table 1

	Normal Spirometry	Restrictive Spirometry	Obstructive Spirometry	p-value
N (%Male)	35 (51.4%)	11 (27.3%)	43 (46.5%)	
Age (Years)	66 (56-73)	67 (54-74)	67 (58-73)	0.9
FEV1% Pred	96% (93-105%)	62% (47-74%)	59% (37-84%)	<0.0001
HRCT score	3.4 (3.3)	4.2 (3.9)	4.0 (3.5)	0.08
Bacterial Colonisation	60.0%	63.6%	88.4%	0.01
Pseudomonas	0%	9.1%	23.3%	0.008

Data are presented as median (IQR) or %

17% of patients with normal spirometry were hospitalised over 2 years, compared to 27.3% of patients with restrictive and 32.6% of patients with obstructive spirometry. Conclusion: Bronchiectasis can be associated with normal, restrictive or obstructive spirometry. Obstructive and restrictive spirometry are associated more

severe disease and a higher frequency of hospital admissions.