

has been seen, both have developed CIS at distant sites to the resection margin. Nine patients (41%) were found to have no evidence of CIS at the resection margin and during a median surveillance period of 37 months (range 19–126), all were found to have normal bronchial epithelium. One patient in this group developed a second primary lung cancer that was surgically resected.

**Conclusion** CIS at the bronchial resection margin is a strong indicator of its fate to progression to invasive carcinoma. Its persistence sets precedent for the development of multiple, consecutive CIS lesions and invasive squamous cell carcinomas, and highlights the importance of routine AFB surveillance following surgery in these cases.

**P78 CAN PET STANDARD UPTAKE VARIABLE (SUV) PREDICT DISEASE PROGRESSION IN EARLY-STAGE NON-SMALL CELL LUNG CANCER (NSCLC)?**

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**Introduction** The correlation between SUV on PET-CT and prognosis in NSCLC has been the subject of much debate. We were interested in whether SUV<sub>max</sub> values could be used to determine which cases of early stage (1–2) NSCLC were likely to progress.

**Methods** We reviewed all 93 histologically proven early stage NSCLCs seen at our tertiary centre over a one year period. We defined those with SUV<sub>max</sub> in the upper quartile as the high SUV group and compared these with the remainder. Historical data were considered to allow subsequent outcomes to be established.

**Results** Median follow up was 772 days during which time there was a 17% mortality rate [all-cause median time to death 338 days]. The median SUV<sub>max</sub> for the cohort was 10.1, and those in the upper quartile all had results over 15.0.

The high SUV<sub>max</sub> group (n = 27) and low SUV<sub>max</sub> group (n = 68) had similar baseline characteristics, received similar treatment regimens and there were no significant differences in tumour size between the groups. Disease progression and mortality were both significantly higher in those with SUV<sub>max</sub> in the upper quartile, despite this group tending to have earlier disease (see Table 1).

Retrospective analysis using Youdin’s index suggested that the optimal threshold for predicting disease progression was not significantly different when cases with nodal involvement were excluded [SUV<sub>max</sub> 15.0 vs 15.5]

**Conclusions** Our results suggest that SUV<sub>max</sub> may indeed help identify those patients with early stage NSCLC at higher risk of progression. In our large cohort those with an SUV<sub>max</sub> of >15 were over 3 times more likely to develop progressive disease than those with lower results and this was independent of tumour size or nodal involvement. Whether individuals in the

higher-risk group would benefit from increased surveillance or adjuvant therapy remains to be established.

**Clinical management of pulmonary infection**

**P79 BRONCHIECTASIS SEVERITY IN PRIMARY IMMUNODEFICIENCY - A TWO CENTRE STUDY**

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**Introduction** Up to 70% of patients with Primary Immunodeficiency syndromes such as Common Variable Immunodeficiency (CVID) have bronchiectasis. Within this population it is a major driver of morbidity.<sup>1</sup>

The Bronchiectasis Severity Index (BSI) is capable of accurately categorising non-cystic fibrosis bronchiectasis patients into three severity groups that predict risk of hospitalisation and mortality at one and four years.<sup>2</sup> It consists of nine clinical parameters, and was derived and validated in a diverse international bronchiectasis population. Mild disease is defined as a BSI score of <4, moderate 5–8 and severe >9.

This study aims to assess the relative severity of bronchiectasis associated with primary immunodeficiency.

**Methods** 24 Patients from the Royal Free Hospital, London and 22 patients from the Freeman Hospital Newcastle were recruited. Age, body mass index,% predicted FEV1, number of hospitalisations in the last 2 years, number of exacerbations in the last year, medical research council dyspnoea (MRC) score, Pseudomonas and other pathogen colonisation status and number or lobes involved on CT chest were obtained to calculate the BSI. Statistical analysis was carried out using SPSS V11.

**Results** The 46 patients were 67.4% female with a mean age of 55.9. There were no significant differences in age, gender or disease severity between the two centres. The median BSI was 4 (i.e. mild disease).

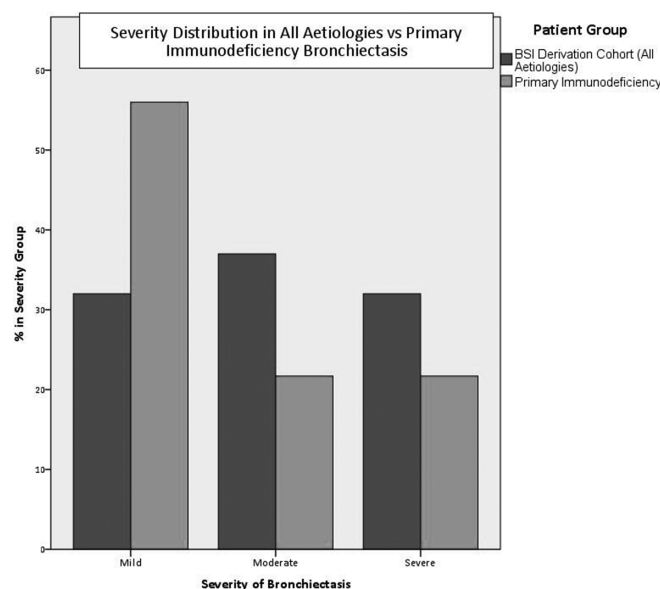
56% of patients had mild disease, 21.7% were moderate and 21.7% severe bronchiectasis. These patients had markedly less severe disease than the mixed aetiology population of 603 patients used to derive the scoring tool.

**Conclusion** Patients with primary Immunodeficiency associated bronchiectasis were younger with less severe disease compared to the BSI cohort population previously reported. This suggests good multidisciplinary care in Primary Immunodeficiency with earlier referral to respiratory specialists. It also correlates with our prior longitudinal data that FEV1 decline in immunodeficiency-related bronchiectasis is less rapid than other aetiologies.<sup>1</sup>

**Abstract P78 Table 1** Early stage NSCLC

	Age	% female	Predicted FEV1%	Median PS	%treated with curative intent	Median Stage	Disease Progression*	All cause Mortality*
High SUV <sup>†</sup> (n = 27)	70.5	50%	80.8%	1	89.5%	1b	40.7%	30.8%
Low SUV <sup>†</sup> (n = 68)	70.8	53%	77.6%	1	92.3%	2a	13.2%	11.9%

<sup>†</sup>Cut off SUV<sub>max</sub> =15; \*Denotes significant statistical difference p < 0.05.



**Abstract P79 Figure 1** Severity Distribution in all aetiologies vs primary immunodeficiency bronchiectasis

**REFERENCE**

- Hurst JR *et al.* Activity, severity and impact of respiratory disease in primary antibody deficiency syndromes. *J C Immunol* 2014;34:68–75
- Chalmers JD *et al.* The bronchiectasis severity index. An international derivation and validation study. *Am J RCCM* 2014;189:576–585

**P80 CHARACTERISATION OF THE EQ-5D-5L AND EXERCISE PERFORMANCE IN BRONCHIECTASIS**

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**Introduction and objectives** NHS England have been looking at using the EQ-5D-5L as a measure of health outcome across the NHS. It is a simple measure which patients complete at the start and end of treatment to evaluate quality and effectiveness of interventions. To date there is no evidence on its use in Bronchiectasis (Bx). Moreover, evaluation of exercise performance is also vital as this can be associated with increased dyspnoea, reduced lung function or increased malaise. Sit to stand (5STS) and six minute walk test (6MWT) can be used to evaluate exercise performance but there is limited guidance on responsiveness and feasibility in Bx. This abstract provides novel data for these outcome measures (OM) in Bx patients during a routine inpatient stay.

**Methods** 20 Bx inpatients (Male: Female 20:20, Median age: 63 (29–74) Median FEV<sub>1</sub>: 1.26 (0.51–2.9) were assessed. 6MWT, 5STS and EQ-5D-5L were completed on all patients during their initial and final assessment.

**Results** Median length of stay was 10 days. Data is presented as median difference and comparisons were made using Wilcoxon Signed Rank tests.

**Conclusion** The EQ-5D-5L improved but did not show a significant difference, moreover there is currently no reported MCID for this OM. Significant differences were seen in both the 6MWT and 5STS. The 5STS is quick and feasible to complete and therefore maybe more preferable to use than the 6MWT. More understanding is needed on the utility of the EQ-5D-5L in this population.

**Abstract P80 Table 1** Outcome measures completed on Bx inpatients on admission and discharge

	Pre	Post	Median difference (MD)	Significance level	MCID
6MWT (m)	310	360	50	0.028	35
STS (seconds)	12.53	10.40	-2.13	0.019	-1.7
EQ-5D-5L	65.9%	75.8%	9.8%	0.508	Not known

Minimal clinically important difference (MCID)

**REFERENCES**

- Pasteur *et al.* 2010 'BTS Guidelines for non-CF Bronchiectasis'
- EQ-5D-5L ([www.euroqol.org](http://www.euroqol.org))

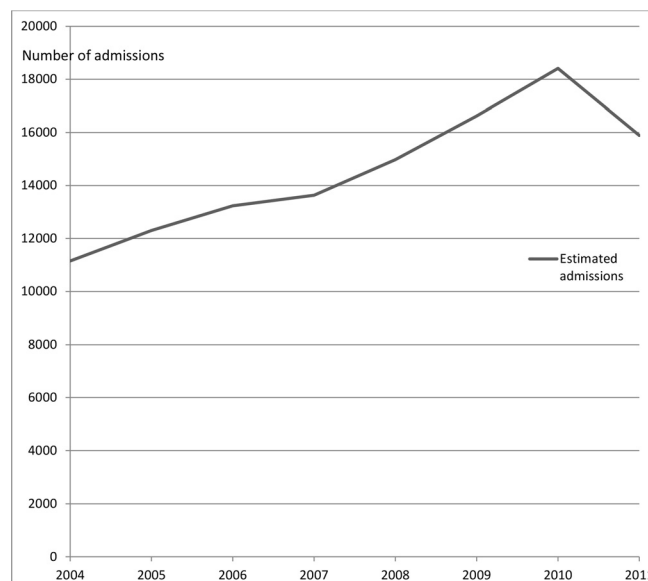
**P81 THE INCREASING SECONDARY CARE BURDEN OF BRONCHIECTASIS IN ENGLAND**

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**Background** A recent study suggested that the bronchiectasis is now a relatively common condition in the UK.<sup>1</sup> The healthcare burden of bronchiectasis on secondary care, in terms of hospital admissions is also unknown, yet is essential for allocation of healthcare resources and planning of service pathways. We used data from Hospital Episode Statistics (HES) to determine age standardised annual hospital admission rates in England.

**Methods** We obtained annual number of hospital admissions (finished consultant episodes), total number of bed days and mean age at time of admission where bronchiectasis was the primary reason for admission for all hospital trusts in England. The ONS mid-year England population for 2011 was used as the standard population. Age specific admission rates for bronchiectasis were calculated for each year and these rates were applied to the 2011 population in order to generate annual standardised estimated number of admissions. An estimate of the average



**Abstract P81 Figure 1** Hospital admissions from bronchiectasis in England from 2004–2011