Abstract S10 Figure 1. Adult ROC curve

REFERENCES

Kraemer, R *et al* 2006, *Respiratory Research*. Lee, T W R *et al* 2003, *Journal of Cystic Fibrosis*.

S11 FEASIBILITY OF CONDUCTING COMPLEX PHYSIOLOGICAL MEASUREMENTS IN LONDON PRIMARY SCHOOLS: THE SIZE & LUNG FUNCTION IN CHILDREN (SLIC) STUDY

¹S Lum, ¹S Sonnappa, ²A Wade, ¹J Kirkby, ¹R Bonner, ¹S Lee, ¹V Bountziouka, ¹S Legg, ¹E Raywood, ¹D Sears, ¹P Cottam, ¹J Stocks; ¹Portex Respiratory Unit, UCL Institute of Child Health, London, UK; ²Centre for Paediatric Epidemiology and Biostatistics, UCL Institute of Child Health, London, UK

10.1136/thoraxjnl-2013-204457.17

Despite recognised ethnic differences in lung function, most reference ranges are based on White subjects. Ethnic minorities comprise 40% of the London population, which impacts on healthcare provision. Even when available, selection of appropriate equations is complicated by the increase in admixed populations and complexities of defining 'ethnicity'. As part of the Wellcome Trust SLIC study (www.ucl.ac.uk/slic) to determine the extent to which body shape, size and composition contributes to ethnic differences in lung function, we examined the feasibility of conducting complex physiological measurements in a multi-ethnic population of London primary school children.

Methods 14 London schools participated in the study. Science workshops were presented one week prior to commencing assessments. Consent forms and information packs were distributed to all children. All children with parental consent were eligible and were categorised into 4 broad ethnic groups: White; Black; South-Asian (Indian subcontinent) and Other/mixed. Assessments were performed at school in 5–11 year-old children and included detailed anthropometry, 3D photonic scan for body shape; body composition; spirometry and saliva samples (cotinine and DNA analysis).

Results Parental consent for anthropometry and spirometry was obtained in 54% of those approached. Amongst these, 88% and 96% provided specific consent for DNA samples and access to GP records respectively (Table 1). Assessments were performed in 2175 children (mean (SD) age: 8.22(1.63); 34%White; 29% Black; 25%South-Asian; 12%Other/mixed ethnicities), 1045 (48%) of whom had follow-up assessments a year later. Preliminary analysis indicates: 18% had chronic respiratory illness or

Abstract S11 Table 1. Consent, asthma status & spirometry success rates of study population

	White	Black	S-Asian	Other/mixed
Total Tested (% boys)	742 (49.7%)	629 (43.6%)	540 (48.7%)	264 (46.6%)
DNA consent	89.3%	84.0%	85.8%	92.2%
GP record access consent	97.1%	93.8%	93.6%	97.4%
Asthma: ever	11.6%	11.1%	8.9%	19.7%
Asthma: current	5.5%	4.6%	5.6%	7.2%
Totalspirometry ^a	533 (71.8%)	435 (69.2%)	411 (76.1%)	195 (73.9%)

Data presented as %.

Abbreviations: DNA: Deoxyribonucleic acid (for genetic ancestry); GP: General Practitioner; Current asthma: defined as those having symptoms and/or asthma medication over the past 12 months;

^abased on data from healthy children and after exclusions from poor health and poor performance.

acute symptoms at time of test. 12% children had a diagnosis of 'asthma ever', with 6% having current asthma (Table 1). Acceptable spirometry¹ was obtained from 1574(72%) healthy children.

Summary Conducting a field study to undertake complex physiological measurements is feasible even in young children. However, the relatively high prevalence of chronic or acute respiratory disease at time of testing in this age group, combined with exclusions due to technically unsatisfactory spirometry means that results from ~30% of children may be excluded if analysis of results is to be based on a 'healthy' population. Such factors must be accounted for when designing respiratory field studies to ensure adequate sample size to reach definitive conclusions.

REFERENCE

1. Kirkby *et al*. *Pediatr Pulmonol* 2008.

Interstitial lung disease: clinical

S12 INTERSTITIAL LUNG DISEASE MULTIDISCIPLINARY DISCUSSION: SIX YEARS OF DATA FROM A TERTIARY SERVICE

A Wright, J Helm, L Spencer, C Leonard, P Bishop, M Greaves, N Chaudhuri; *University Hospital of South Manchester NHS Trust, Manchester, England*

10.1136/thoraxjnl-2013-204457.18

Introduction Accurate diagnosis in Interstitial Lung Disease (ILD) is vital in optimising patient management. An integrated approach involving a multidisciplinary team (MDT) of physicians, radiologists and pathologists is strongly advised in ATS/ERS guidelines.¹ This has been shown to improve diagnostic confidence.² Consensus diagnosis post multidisciplinary team discussion often differs from that reached by individual clinicians. Our centre, which provides a tertiary interstitial lung disease service in the North of England, implemented multidisciplinary discussion in 2005. Our patient cohort is larger than series previously presented at both national and international respiratory meetings. Literature search also did not identify any published data with either an equal or greater patient population.

Aims To review interstitial lung disease MDT outcomes and to determine if discussion resulted in a change of diagnosis and whether this impacted on subsequent patient management.

Methods Retrospective review of both patient clinical notes and MDT outcomes from 2005 to 2013 was performed. Data from

2009 and 2010 was unavailable as it was not stored electronically.

Results 385 patients were referred for MDT review from 2005 to 2008 (n = 167) and 2011 to 2013 (n = 218). Usual Interstitial Pneumonia (UIP) was the pre-MDT diagnosis in 144 (37%) cases. Post-MDT 71 (49%) individuals had their diagnosis altered, leading to a change of treatment in 37 (52%) cases. A further 3 patients were referred for biopsy. One individual died pre-MDT and therefore was not discussed.

Of the 68 cases referred with no diagnosis multidisciplinary consensus was reached in 60 (88%) cases. The remaining 172 were referred with a range of aetiologies.

Conclusion Our findings support ARS/ERS consensus guidelines¹ which strongly advise the implementation of multidisciplinary discussion in the care of the individual with interstitial lung disease.

REFERENCES

1. Flaherty K *et al.* *Am J Crit Care Med* Vol 170. pp904–910, 2004
2. Raghu G *et al.* *Am J Crit Care Med* Vol 183. pp788–824, 2011

S13 SOLE USE OF FORCED VITAL CAPACITY AS PER NATIONAL INSTITUTE OF HEALTH AND CARE EXCELLENCE CRITERIA DISADVANTAGE 2 IN 5 PEOPLE WITH IDIOPATHIC PULMONARY FIBROSIS

N Chaudhuri, A Duck, M Greaves, CT Leonard; *United Hospitals of South Manchester, Wythenshawe Hospital, Manchester, UK*

10.1136/thoraxjnl-2013-204457.19

Introduction Pirfenidone has undergone NICE approval and is recommended for patients with IPF if the FVC is 50–80% 1. We hypothesised that the NICE guidance would disadvantage a significant cohort of IPF patients who have moderate reduction in transfer factor despite preserved FVC.

Methods We retrospectively reassessed the eligibility of fifty IPF patients on the named patient programme using the NICE guidance. Electronic CT and clinical reports were analysed for the presence of coexisting emphysema.

Results Of fifty patients we identified that 20/50 (40%) would not have been prescribed pirfenidone as per the NICE criteria. The average FVC was significantly higher in the 20 patients that did not meet the NICE criteria compared to those that did ($97.6 \pm 16.24\%$ vs. $65.48 \pm 8.56\%$ ($p < 0.001$) respectively. In contrast there was no difference in transfer factor between the two groups ($42.35 \pm 14.66\%$ vs. $44.74 \pm 12.29\%$ respectively).

The frequency of emphysema was statistically different between those that met the NICE criteria and those that did not (3 vs. 8 $p = 0.0409$). Of those patients that had an FVC greater than 80%, 12/20 (60%) had no emphysema visible on CT imaging and 2 (10%), 4 (20%) and 2 (10%) had evidence of mild, moderate and severe emphysema respectively. However, the average transfer factor was not significantly different between those with or without emphysema (35.75% vs. 46.75% respectively).

Conclusion This retrospective data demonstrates that the sole use of FVC in the NICE criteria for treating IPF disadvantages 40% of patients who demonstrate a significant reduction in transfer factor despite FVC greater than 80%. In this study this reduced transfer factor and preserved FVC can only be attributed to the presence of coexisting emphysema in 8/20 (40%) of patients. 60% of patients had IPF alone with FVC greater than 80% despite an average transfer factor of 47%, which was not

statistically different to those with coexisting emphysema. We would therefore advocate the use of both FVC and DLCO when assessing patient suitability for pirfenidone treatment for IPF. The use of FVC alone excludes a substantial cohort of IPF patients who have preserved FVC, reduced DLCO with or without coexisting emphysema.

S14 FVC AS A SURROGATE MARKER FOR DEATH AND HOSPITALISATION IN IPF, SARCOID AND BRONCHIECTASIS CLINICAL TRIALS

M Gimzewska, N Hirani, DA McAllister; *University of Edinburgh, Edinburgh, United Kingdom*

10.1136/thoraxjnl-2013-204457.20

Introduction & Objectives Decline in Forced Vital Capacity (FVC) is predictive of mortality in IPF and is commonly used as an end-point in IPF clinical trials. FVC has not, however, been formally validated as a surrogate end-point for death or hospitalisation, making it difficult to interpret the clinical importance of differences in decline in FVC, and its use controversial. Change in FVC has also been used in other chronic lung diseases as a clinical trial end-point. The aim of this project was to determine if FVC is a surrogate end-point for mortality and/or hospitalisation in IPF, sarcoidosis and bronchiectasis trials. We also aimed to comment on the reporting of FVC in chronic lung disease trials.

Methods A systematic review was conducted. MEDLINE, EMBASE, LILACS and CENTRAL (1990-present) were searched on 25/03/2013. Reference lists and relevant journals (Jan-Apr 2013) were hand-searched, and experts in the field contacted to identify further studies. Only randomised controlled trials of drug interventions in adult participants with IPF, sarcoidosis and bronchiectasis were considered.

Results 42 studies were identified, 37 of which were included in linear regression analysis. All studies reported mortality, and 17 studies reported hospitalisation. No association was found between difference in annual decline in FVC and annual mortality or hospitalisation rate (see graph). It was frequently difficult to combine results across studies due to variation in measures reported, or due to insufficient detail in reports. 32 studies reported change in FVC: 24 studies reported absolute changes (e.g. 7.2% decline from 67.6% to 60.4%), 4 reported relative change (e.g. 7.1% decline from 70.7% to 65.7%), and one study reported both. Clarification of change type from authors was required for 16 studies.

Abstract S14 Figure 1.