pathology and post mortem databases for the five hospitals in the network. A full review of the clinical records was performed.

**Results** 81 patients were identified. Average age was 72 and 94% were male. 82.7% of patients had a performance status of 0 or 1 at presentation but 21% had a significant co-morbidity, most commonly cardiac in nature. 77.8% of patients had definite or probable asbestos exposure. At presentation symptoms had been present for a mean of 3.7 months, the commonest being breathlessness and chest pain. A definitive diagnosis was made in 84% of patients, either on histology (75%) or cytology (9%) and the epithelioid subtype was most common (40.7% of cases). VATS was the main diagnostic modality (61.7%). Despite 61.7% of patients technically being fit for chemotherapy, only 29.6% received it. Mean survival was 269 days (8.8 months). Survival was longer in those with a better performance status at presentation (PS0=344 days, PS1=270d, PS2=125d, PS3=89d), and in those who received chemotherapy (448d vs 269d).

**Conclusion** MM remains a common problem in the South West of the UK. Despite recent treatment advances the prognosis remains poor, with our survival data being similar to that described in earlier population based studies and in chemotherapy treatment trials. Only a small proportion of our patients received chemotherapy and this may reflect the lack of NICE guidance for use of pemetrexed which was only issued in 2008. However, those patients who recieved chemotherapy had a better survival time (14.7 months vs 8.8 month).

## P70 TALC SLURRY PLEURODESIS: DOES MIXING TALC WITH 50% DEXTROSE RATHER THAN NORMAL SALINE INCREASE SUCCESS RATE?

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**Introduction** Symptomatic malignant pleural effusions can be managed effectively with talc pleurodesis. Various studies document the success rate for talc pleurodesis around 80%. In these studies, talc was mixed with normal saline to make the slurry prior to pleurodesis. We audited the success rate for pleurodesis in our hospital using slurry made by mixing talc with normal saline and slurry made by mixing talc with 50% dextrose to see if changing the 'solvent' made any difference to the success of the procedure. The hypothesis that 50% dextrose, being 'stickier' than normal saline, will achieve a better success rate was thus tested.

**Method** In group 1, 28 patients underwent pleurodesis using slurry obtained by mixing talc with normal saline. The findings were presented to BTS in 2008. Subsequently we re-audited our practice with group 2, in which 18 patients were pleurodesied using slurry obtained by mixing talc with 50% dextrose.

**Results** Procedure success was defined as absence of fluid reaccmulation requiring intervention at 3 months post pleurodesis. The success rate for the first group was 34% while the success rate for the second group was 76%. The second group underwent more rigorous protocol ensuring drain clamping for 1-h post procedure and use of suction in 100% compared to 80% and 87.5% in the first group. However, subgroup analysis of the first group did not reveal a statistically significant difference in success rate for these variables. Use of NSAID analgesia for 28% patients in group 1 compared to none in group 2 could have influenced the results significantly. Lastly, better patient selection and operator bias might have resulted in better success rate in the second group as recommendations from first audit were implemented in second cycle. Overall best success rate of 76% was inferior to that reported in previous studies due to more liberal patient selection.

**Conclusions** Use of 50% dextrose rather than normal saline to mix talc for talc slurry with strict patient selection and a rigorous pleurodesis protocol as recommended by BTS guidelines can result in better success rate. This is possibly because of the resulting stickier inert slurry. However, research with a randomised control trial is required to assess this question further.

# Paediatric lung diseases

## P71 REDUCED AIRWAY BETA-DEFENSIN 2 LEVELS IN CHILDREN WITH CYSTIC FIBROSIS AND VITAMIN D-DEFICIENCY

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Vitamin D (vD) levels have been reported to correlate with (a) lung function in healthy populations and (b) disease severity in pulmonary TB, COPD and asthma. The proposed mechanism, supported by in vitro studies, relates to vD response elements in the promoter regions of genes encoding molecules involved in innate immunity such as defensins and cathelicidin (LL-37). As patients with CF are at risk of fat and fat-soluble vitamin malabsorption, we sought to explore this relationship in a cohort of CF children. Frozen serum and bronchoalveolar (BAL) fluid samples, which had been donated for research at the time of a clinically-indicated bronchoscopy were available from 49 children with CF. Mean age at the time of the procedure was 6.8 years (range 0.03–15.99). 44 (90%) were biochemically pancreatic insufficient and were prescribed pancreatic enzyme supplementation and fat-soluble mulitvitamins. Serum 25OH vD3 was measured using HPLC and mass spectrometry. BALF human beta defensin-2 (hbD2) and LL-37 were quantified using ELISA. vD deficiency was defined as <20 ng/ml based on internationally-accepted criteria. Deficient and sufficient groups were compared with Mann–Whitney tests and Spearman's correlations were performed. 16 (33%) children were vD-deficient (including two of the five pancreatic sufficient patients); they did not differ in age from the vD sufficient group. BALF hbD2 was significantly lower than in the vD sufficient group (median (range) 185.3 (7.8–615.7) pg/ml vs 385.5 (7.8–1002) pg/ml; $p<0.05$). In contrast, no relationship was observed between serum vD and BAL LL-37. As this molecule is known to be highly sensitive to proteolysis, we considered the possibility that degradation could be masking an effect of vD on LL-37 expression. However, no inverse relationship with neutrophil elastase or MMP-9 was found to support this hypothesis. Children with CF are at risk of low vD levels even if they are clinically pancreatic sufficient or if vitamin supplements are being prescribed. vD deficiency is associated with low levels of antimicrobial defence molecules within the airway. Whether this is a clinically important phenomenon leading to susceptibility to infection and increased inflammation will be the focus of future work.

## P72 FEASIBILITY OF RECRUITING NEWBORN BABIES WITH CYSTIC FIBROSIS DIAGNOSED BY NEWBORN SCREENING TO A CLINICAL STUDY WITH INVASIVE OUTCOME MEASURES

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**Background** Newborn screening (NBS) for cystic fibrosis (CF) has been available throughout the UK since 2007. Such screening is only

justified if it improves outcome. NBS offers the potential for early intervention in order to preserve lung function and nutritional status. There are few, if any, ways of satisfactorily monitoring such babies non-invasively. To date the feasibility of recruiting newborn babies to invasive studies within the first few weeks following diagnosis is unknown.

**Aim** To assess the feasibility of recruiting and retaining infants diagnosed by NBS to an invasive observational study, prior to proposing an interventional study.

**Methods** All children presenting from the CF NBS programme from six centres comprising the London CF Collaboration (LCFC: Great Ormond St, Royal Brompton, Kings College, Royal London, Lewisham University and Epsom and St Helier's Hospitals) are being invited to participate in a study which involves infant lung function under sedation at ~3 and 12 months plus a combined CT, bronchoscopy and BAL under GA at ~12 months, within 3 weeks after the lung function test.

**Results** Since commencement of this study, 63 infants have screened positive for CF of whom five were ineligible (co-existent morbidities or moving away from area). Of the 58 eligible babies, seven have either declined (6) or withdrawn (1), eight families are currently considering participation and 43 have consented to participate. Infant lung function at 3 months has been undertaken in 43 babies (mean age at test 10.8 (SD 2.4) weeks. Of the 16 babies that have now reached one year of age, all have completed their follow-up lung function test and 15 have had their CT and BAL, with one awaiting an appointment. To date, parents' attitudes to taking part in this study have been universally positive.

**Conclusions** Despite initial concerns from some reviewers regarding the ability to recruit and retain families whose infants have been diagnosed with CF by NBS into clinical studies with invasive outcomes, these preliminary data indicate that it is possible to recruit a high proportion of babies to such a study. These results suggest that future interventional studies will be feasible.

## P73 THE COMPLEXITIES OF DEFINING ATOPY IN SEVERE CHILDHOOD ASTHMA

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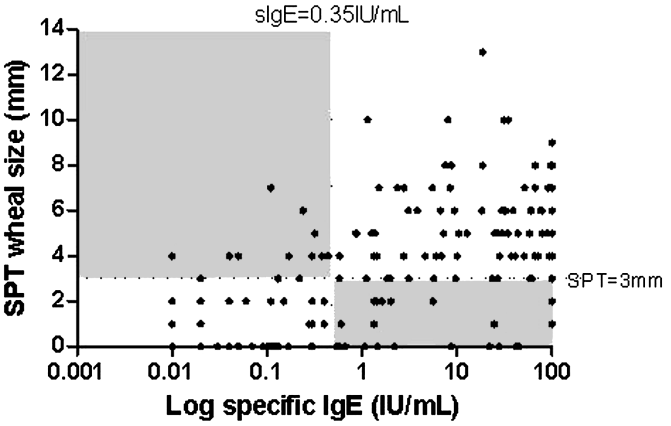
**Background** Defining atopy in children with severe therapy resistant asthma is complex. There is currently no gold standard test; skin prick testing (SPT) and allergen specific immunoglobulin E (sIgE) are both used. Atopy is increasingly considered to be a spectrum, not an all-or-none phenomenon (Allergy 2007;**62**:1379–86).

**Hypothesis** SPTs and sIgE cannot be used interchangeably, and that if both tests are not performed opportunities for intervention will be missed. Furthermore, severity of atopy will be defined differently by the two tests. Total IgE and fractional exhaled nitric oxide ($FeNO_{50}$) may also help quantify atopy.

**Methods** Cross-sectional study of 47 children with severe therapy resistant asthma, mean age 11.8 years (range 5.3–16.6 years) who underwent measurement of a standard panel (house dust mite (HDM), dog, cat, weed pollens and grass pollens) of SPTs and sIgEs, total IgE and $FeNO_{50}$ as part of their clinical work up.

**Results** Overall 42/47 (89%) were atopic (defined as either a single positive SPT or sIgE). There was 98% concordance between the two tests in classifying atopy. When each allergen was considered individually, in 40/201 (19.8%) the SPT and sIgE results were discordant (Abstract P73 Figure 1), most commonly, 25/201 (12.4%) the SPT was negative and the sIgE was positive. HDM and cat sensitisation were more likely detected by sIgE, but dog by SPT. When atopy was quantified the sum of sIgEs compared with the sum of SPT wheal diameter showed only moderate correlation (r=0.66, p=<0.001). Total IgE increased with an increasing number of positive sIgEs (p=0.028), but not significantly with number of positive SPTs. There was a significant correlation between $FeNO_{50}$ and total IgE (r=0.34, p=0.02), but no difference in $FeNO_{50}$ when patients were defined as atopic on either SPT or sIgE, and no relationship with increasing numbers of positive SPTs or sIgEs.




Abstract P73 Figure 1 Comparison of sIgE and SPT wheal diameter for each individual allergen from the standard panel (n=201). Dotted lines show the cut-off for a positive test result. Discordant results indicated by shaded areas.

**Conclusions** SPT and sIgE identify the group prevalence of atopy equally well; however for some allergens, concordance is poor, and when used to quantify atopy SPT and sIgE show only moderate correlation. If allergen avoidance is contemplated in children with severe therapy resistant asthma, then both tests should be performed in order to detect sensitisation.

## P74 BRITISH ASTHMA GUIDELINE REVISION DOES AFFECT PRESCRIBING PATTERNS IN CHILDREN

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**Background** Although audits of prescribing practice referenced to the British asthma management guidelines have been reported little is known on the impact of guideline revisions. Concerns about the use of high dose inhaled corticosteroids (ICS) in children, implicit in earlier adult oriented guidelines, has resulted in the promotion of add on therapy with long acting beta agonist (LABA) and/or leukotriene receptor antagonist (LTRA) and advice on age appropriate doses of short courses of oral corticosteroids (OCS) for exacerbations.

**Methods** Prescribing of asthma medication for children 0–18 years from 46 Scottish General Practices contributing to the Practice Team Information (PTI) database was assessed before (2001–2) and after the 2003 BTS/SIGN guideline revision[1] (2005–6). PTI represents the rural/urban and socioeconomic make up of the whole Scottish population and includes 155 230 children in the 0–18 year age group (7.2–7.8% with at least one prescription for an asthma medication per year).

**Results** In those children prescribed at least one asthma medication in each year of study, ICS at high dose (>400 μg beclometasone equivalent) decreased from 16.3% in 2001–2 to 11.7% in 2005–6 (p<0.001). This was accompanied by an increase in the prescribing of add-on therapy (LABA and/or LTRA) from 15.0% in 2001–2 to 26.2% in 2005–6. Prescribing of short courses (5–7 days) of OCS increased most prominently in children aged <5 years (from 6% in