Abstract P104 Figure 1 Figure showing the effects of morphine and placebo on noxious sensations (A "Irritation" B "tickle") evoked by increasing doses of citric acid in our cough challenge * $p < 0.05$.

Results Compared with placebo, low dose morphine significantly reduced the VAS scores for tickle and irritation during the citric acid challenge ($p=0.021$, $p=0.039$), however UTC, taste and the number of coughs evoked were not improved ($p=0.105$, $p=0.167$, and $p=0.337$). Of particular note, morphine had no significant impact on C2 compared with placebo ($p=0.611$).

Conclusions This data shows that treatment with low dose morphine significantly reduces the noxious sensations driving cough. The effects on tickle and irritation appear more important than any impact on the UTC, numbers of coughs triggered or the traditional C2 endpoint, suggesting that reducing somatic sensations may be an important component of the mode of action of opioids in the treatment of cough.

P105 DOES FENO PREDICT CLINICAL CHARACTERISTICS IN CHRONIC COUGH?

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Objectives In this study we aimed to explore the efficacy of FeNO (The fraction of exhaled nitric oxide) measurement in determining airway inflammatory phenotype in chronic cough patients. FeNO is a biomarker of eosinophilic inflammation. Sequential patients attending a specialist cough clinic were classified as low FeNO (FeNO ≤ 20 ppb) or high FeNO (FeNO ≥ 30 ppb) to evaluate the profile of other eosinophilic biomarkers (blood and sputum), cough frequency, and demographics to determine if they exhibited phenotypic variability.

Methods In total 49 patients completed the baseline visit. Correlations between FeNO, blood and sputum eosinophil cell count were assessed. We then compared the objective and subjective measurements of cough in patients with high FeNO and low FeNO at baseline. 24 hour cough counts were measured using the Hull Automated Cough Counter (HACC). Hull Airways Reflux Questionnaire (HARQ) and Leicester Cough Questionnaire (LCQ) were applied to measure cough subjectively.

Results There was a marked gender difference between groups with the low FeNO group having 90% women whereas the sexes were equally represented in the high FeNO cohort. The predominantly female, low FeNO group had more than twice the number of coughs recorded. Again at baseline there was a significant difference in HARQ and LCQ scores between high and low FeNO groups. Patients with low FeNO suffered more from cough symptoms in comparison with patients with high FeNO according to the 24 hour cough count, HARQ and LCQ scores. FeNO value

had a strong correlation with blood and sputum eosinophil count ($r=0.79$ and $r=0.65$ $p<0.001$ respectively).

Conclusions By evaluating the demographic data, 24 hours cough count, HARQ and LCQ in high FeNO and low FeNO groups, different characteristics between these two cohorts observed. FeNO predicted the gender-related differences in demographic, with women markedly over represented in the low FeNO cohort. A female preponderance in patients with chronic cough has been well documented. However, the possible relationship between different inflammatory profiles as reflected by FeNO has not previously been described.

P106 THE USE OF GABAPENTIN AND PREGABALIN FOR THE MANAGEMENT OF CHRONIC COUGH IN A TERTIARY COUGH CLINIC

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Introduction and Objectives Chronic cough is a poorly understood condition with a limited number of treatment options available. Gabapentin and pregabalin are used in the treatment of neuropathic pain and may have some efficacy in patients with refractory chronic cough.^{1,2} We evaluated the real-world outcomes of using these medicines in a tertiary cough clinic.

Methods We performed a retrospective review of new referrals to a tertiary cough clinic (October 2013-October 2015). Patient characteristics (age, sex, duration of cough and test results) were collected. Follow up clinic letters were reviewed until April 2017. We recorded details regarding the prescribing of gabapentin and pregabalin for patients with refractory chronic cough, their impact on cough and the associated side effects.

Results 136 new patients were reviewed (mean age 56.3 years, 98 (72.1%) female) with a mean duration of cough of 7.5 years (SD 12.2). Gabapentin or pregabalin was prescribed for 38 patients (9 gabapentin and 29 pregabalin). Highest dose achieved was 1800 mg/day for gabapentin and 300 mg/day for pregabalin. Overall, fifteen patients (39%) responded favourably to these medicines initially. Fourteen (37%) tolerated them but derived no benefit and stopped the medication. Nine patients (24%) developed immediate side effects and were unable to tolerate the medications. Out of the 15 patients that tolerated these medicines, only 8 (21%) were able to continue with therapy long term, as the other seven (18%) eventually developed intolerable side effects. The most common side effect was drowsiness (see below).

Abstract P106 Figure 1 Side effects/interactions reported by patients when taking gabapentin/pregabalin for chronic refractory cough.

Conclusions Our data suggests that in clinical practice, alpha-two delta ligands are effective in a subgroup of chronic cough patients, but side effects may outweigh their potential benefits, affecting nearly half the population trialled.. Prospective work is needed to objectively quantify their anti-tussive effects and tolerability over longer treatment periods, allowing clinicians and patients to better understand the risk-benefit ratio associated with their use.

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P107 TIME TO RE-GROUP: A NOVEL APPROACH TO THE DELIVERY OF SPEECH AND LANGUAGE THERAPY FOR CHRONIC REFRACTORY COUGH

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Introduction Specialist speech and language therapy (SLT) has an important role in the treatment of chronic refractory cough (CRC). Therapy is typically delivered to patients individually; however, this approach is resource-intensive and reduces service capacity. Moreover, the content of SLT for CRC is often similar across patients. The aim of this work was to describe the efficacy of a SLT-delivered cough therapy group (CTG).

Methodology Eligible patients attended the CTG (2016–2017) after an initial 1:1 assessment to determine suitability. Individuals with an infectious cause of cough were excluded. All patients had undergone prior assessment and treatment optimisation at the RBH chronic cough clinic. Cough severity was rated using a visual analogue scale (VAS) at first attendance and on discharge from the group. Patients attended a maximum of four sessions with 4–8 patients per session, after which they were referred for individual review if they felt no improvement had been made. CTG sessions consisted of strategies to reduce cough frequency (through improved upper airway lubrication, reduction of laryngeal muscle strain and use of cough control strategies), sharing experiences, observing other patient-therapist interactions and time to talk individually with the SLT.

Abstract P107 Figure 1 Mean VAS scores of cough severity pre- and post-CTG attendance.

Results Ninety-one patients (n=26 males, 28.6%) aged between 30 and 83 years (M=61.4, SD 11.1) attended CTG. The majority of attendees (n=46, 50.5%) reported cough duration of greater than 15 years. There was a reduction in mean VAS following group attendance (p<0.05) (figure 1) with the greatest reduction noted after 3 attendances (p<0.05). The most common patient-reported benefits of group attendance were sharing advice (80.2%) and meeting other people with a cough (76.9%).

Conclusion A group-delivered SLT treatment intervention was associated with reduction in cough severity in a cohort of patients with CRC. Service benefits included reduced waiting time and improved access to individual SLT sessions. Future work should focus on qualitative analysis of patient-reported benefits of group therapy and evaluation of efficacy in a prospective, randomised study.

P108 CHRONIC PRODUCTIVE COUGH (CPC) CLINIC – STANDARDISING CARE FOR CHILDREN WITH NON-CF BRONCHIECTASIS

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Abstract P108 Figure 1

Introduction and Objectives Non-CF bronchiectasis is a major cause of morbidity in the UK. 60%–80% of adults with newly diagnosed bronchiectasis have had CPC since childhood. Studies show this condition can be prevented by interventions in childhood designed to improve airway clearance and elimination of bacteria. Children with CPC/non-CF bronchiectasis are often assessed in general paediatric clinics with no physiotherapy input. A study highlighted that patients attending specialist bronchiectasis clinics are more likely to be managed according to BTS quality standards. We setup a multidisciplinary clinic with standardised care for children with chronic productive cough.

Methods We introduced a one-stop multidisciplinary (CPC) clinic, lead by a designated respiratory consultant, respiratory physiotherapist and physiologist. CPC clinic runs on a monthly basis but patients can be seen between appointments if required in the physiotherapy department. We performed targeted clinical assessment using formal clinical assessment proforma, improved airway clearance techniques by regular assessment with respiratory physiotherapist and lung function by physiologist, engaged with patient and parents by providing information leaflets and involving them in formulating an individualised action plan.

Results 22 patients are assessed in CPC clinic with 90% attendance. 15 patients have established bronchiectasis among which 6 children have a diagnosis of primary ciliary dyskinesia, 7 children have CPC. All patients attending the clinic were seen by respiratory physician, chest physiotherapist and physiologist. 91% had clinical proforma sheet completed, 100% had airway clearance assessment by physiotherapist with sputum microbiology sent in 90%. 100% of children ≥ 5 years age had lung function performed and individualised action plan given.

Conclusions Since setting up the clinic, children with CPC are getting targeted care by a multidisciplinary team. The clinic is being extended to include children with immunodeficiency under joint care with a clinical immunologist. There will be a focussed annual review with involvement of a dietician, ENT, radiology and microbiology. Feedback from users is very positive and in the short term QoL for families has improved. However it will require long term follow-up to determine if the prognosis has also improved.

P109 UTILITY OF A MULTIDIMENSIONAL UPPER AIRWAY VISUAL ANALOGUE SCALE TO CHARACTERISE LARYNGEAL DYSFUNCTION

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Introduction Laryngeal hypersensitivity is now recognised as underpinning many features of laryngeal dysfunction, such as chronic refractory cough (CRC), inducible laryngeal obstruction (ILO) and globus sensation (Hull et al., 2016). Many respiratory patients present with overlapping upper airway symptoms, yet current subjective rating scales have focused narrowly on single clinical features and potentially failed to capture the importance of this overlap. The aim of this work was to assess overlapping laryngeal features in patients in an upper airway service, using a multidimensional upper airway visual analogue scale (VAS).

Methodology Patients with CRC, asthma, ILO and voice difficulties were referred from the RBH specialist cough and upper airway clinic to speech and language therapy (SLT). They rated cough severity, throat discomfort and voice change on the multidimensional upper airway VAS at their initial assessment. Mean VAS scores were calculated for each diagnostic group.

Results Data from 122 patients (91 females, 75%; 31 males, 25%) aged between 18 and 82 years ($M=52.4$, $SD=15.8$) were collected over a six month period. Sixty-nine patients were referred with CRC (56.5%), 16 (13.1%) with asthma, 32 (26.2%) with ILO and 5 (4.1%) with voice changes. There was an interaction between diagnosis and all three ratings combined ($p < 0.05$) and between all pairs of ratings for each diagnosis ($p < 0.05$), apart from cough severity and voice change in patients with ILO (figure 1).

Conclusion The multidimensional upper airway VAS captures the overlap between upper airway symptoms and highlights the importance of comprehensive assessment to ensure all features of laryngeal dysfunction are treated effectively. The multidimensional VAS will be further developed to include ratings of breathlessness and swallow function and used to evaluate response to treatment.