38% and other organisms 29% of patients. Median (IQR) 24-hour, day time and night time cough counts were: 249 (112, 438), 240 (109, 404.5) and 24 (5, 56.5) coughs respectively. There was diurnal variation in cough frequency (Figure 1). Day time cough frequency was significantly greater than night time (Wilcoxon signed rank test $p < 0.01$). 24-hour total coughs were significantly associated with HRQOL (Spearman ρ=-0.54, $p < 0.01$), cough VAS (ρ=0.56, $p < 0.01$) and sputum VAS (ρ=0.48, $p < 0.01$). There was an association between 24-hour cough counts and gender (linear regression $p = 0.05$), but no association with bronchiectasis aetiology, sputum colonisation status or age.

Conclusions Cough frequency monitoring in patients with bronchiectasis is feasible. Higher cough frequency was associated with poorer HRQOL and worse patient-reported symptoms of cough and sputum. Patients coughed more during the day than at night. 24-hour cough frequency was variable and gender was identified as an influential factor. Future studies should investigate other potential factors for cough variability in bronchiectasis and evaluate the potential of cough frequency as an outcome measure for assessing the efficacy of therapy.

P9 COUGH IS PREVALENT IN HIGHER PROPORTION OF OLDER PATIENTS WITH BOTH IDIOPATHIC PULMONARY FIBROSIS AND NON-SPECIFIC INTERSTITIAL LUNG DISEASE

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Introduction Cough is a major symptom of Idiopathic Pulmonary fibrosis (IPF), a progressive, fatal lung disease with median survival of 3 years. The first study to suggest cough as an independent predictor of disease progression, reported it in 84% of the population.[1] The only study to quantify cough in 19 IPF patients, reported strong correlation between objective cough counts and cough related quality of life[2] There is a lack of studies investigating the prevalence, pathogenesis or treatment of cough in IPF. We set up a study to evaluate the prevalence of cough in an incident IPF and Non specific Interstitial Pneumonia (NSIP) population.

Methods A prospective, multi-centre, observational, cohort study, PROFILE-Central England (September 2009 to June 2014) was set up. Patients had a diagnosis of definite or probable IPF or NSIP based on the ATS consensus. Leicester cough questionnaire (LCQ) was used to assess presence or absence of cough at baseline. Furthermore,the cohort was divided into 3 groups to assess severity of cough: Mild (17–20), Moderate (11–16.9) and Severe (<11).

Results 312 incident patients with IPF or NSIP were enrolled. 261/312(83.6%) patients had incident IPF whilst 51/312(16.4%) had NSIP. The mean age of the cohort was 73.5 years (35–90 years). 235/312(76%) were males with mean age 73.7 years (47–90 years); 74/312(24%) were females with mean age of 72.9 years (35.8–88.8 years).

261/312(83.6%) reported cough compared with 51/312 (16.4%) who reported no cough. Of the patients who reported cough, 45/261(17.2%) had severe cough, 112/261(42.9%) had moderate cough and 104/261(39.8%) had mild cough. There was no effect of gender, however, older cohort reported more cough (age >55 years; $p = 0.014$). Smoking may be a confounder, however the number of current smokers in the cohort is too small ($p = 0.05$).

Interestingly both NSIP and IPF cohort reported cough; however, proportionally NSIP patients have less cough (14/51,27.4%) compared with IPF (37/261, 14%).

Conclusions Cough occurs in a huge majority of patients with both IPF and NSIP. Cough appears to be a greater problem in older patients.

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P10 THE EFFECT OF NALTREXONE, AN OPIOID RECEPTOR ANTAGONIST, ON CAPSAICIN EVOKED COUGH, IN HEALTHY MALE SUBJECTS

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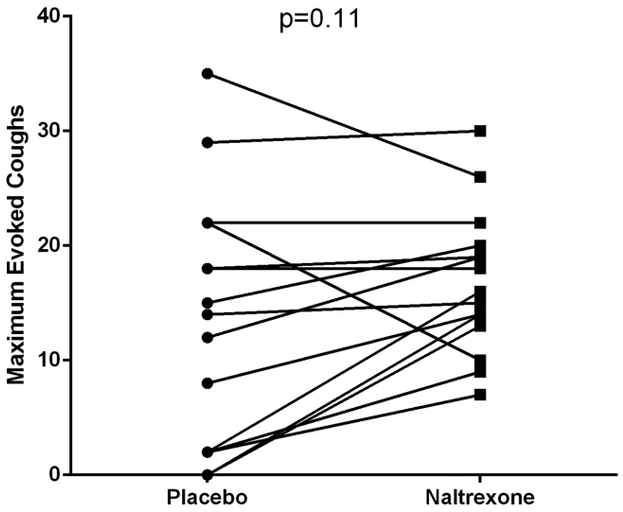
Introduction Chronic cough is a troublesome condition that reduces patient quality of life. Recent evidence suggests that healthy females cough more than healthy males but the mechanism underlying this in unclear.[1] We hypothesise that opiate-sensitive inhibitory control mechanisms determine capsaicin-evoked cough responses in healthy subjects.

Aim To show that in healthy males the number of capsaicin-evoked coughs is increased following administration of naltrexone, an opiate receptor antagonist, compared with placebo.

Method 15 male subjects (median age 30 yrs (21–59)) were recruited in to a randomised double blind cross-over trial of single doses of naltrexone vs. placebo given 1 week apart. A capsaicin inhalational challenge (doubling doses 0.48 to 125[micro]M) was performed 60 min after ingestion of naltrexone/placebo using a dosimeter. Four inhalations 30 seconds apart were performed at each concentration and the total coughs evoked at each dose were recorded and verified using a cough monitor.

Results There was a tendency for subjects to cough more when treated with naltrexone (16.7 ± 2.7 (SEM) compared with placebo (13.7 ± 1.6), ($p = 0.11$, general estimating equations). See Figure 1



Abstract P10 Figure 1

Conclusion This small pilot study suggest that opiate sensitive inhibitory mechanisms may have a role in controlling the cough reflex even in healthy subjects.

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P11 THE ROLE OF GABAB RECEPTOR MECHANISMS IN THE HUMAN COUGH REFLEX

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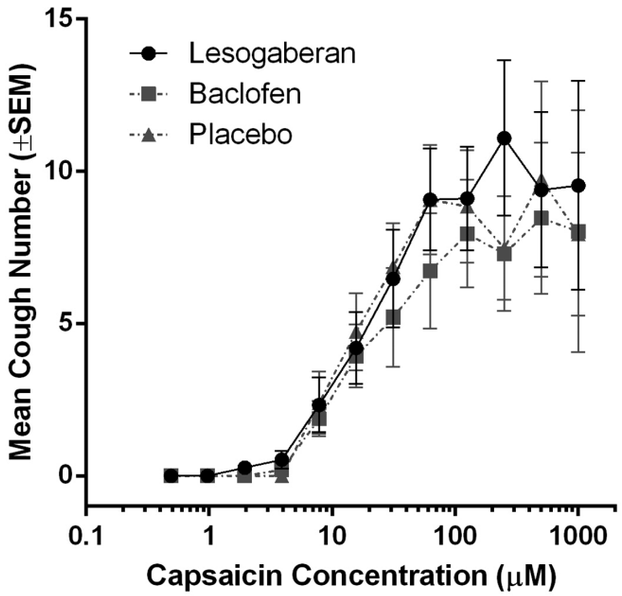
Background Chronic cough represents an important unmet clinical need. Gamma-aminobutyric acid is a major inhibitory neurotransmitter in the central nervous system (CNS). $GABA_B$ receptors have been identified peripherally, as well as centrally. Studies in guinea-pigs, have suggested that the activation of $GABA_B$ receptors in the CNS and PNS can inhibit cough. The only clinically available $GABA_B$ agonist is Baclofen, and although it has been shown to suppress cough in animals and humans, it causes drowsiness as it is centrally acting. Lesogaberan, is a novel, predominantly peripherally acting $GABA_B$ agonist.
Objective To determine whether both peripherally acting (Lesogaberan) and centrally acting (Baclofen) $GABA_B$ agonists modulate cough responses to inhaled capsaicin compared with placebo in healthy volunteers.
Methods Single centre, double-blind, double-dummy, three-way crossover trial in healthy controls of Lesogaberan (120 mg MR), Baclofen (40 mg) and placebo. Subjects were treated with single doses of each study medication with a washout period of ≥7 days between doses. Cough responses to inhaled capsaicin were assessed using a novel challenge protocol (1) measured at screening and 2 hrs post dosing (tmax) on each study day. The primary end point was the maximum number of coughs evoked at any concentration of capsaicin (Emax). The secondary end point was the concentration of capsaicin evoking 50% of the maximal response (ED50).
Results There were 15 patients enrolled onto the study with a median age of 29 years old (IQR25–44); 7 female; mean BMI was 24.6 (±3.0).

Lesogaberan treatment was associated with a small, statistically significant increase in Emax (mean 13.4 coughs, 95% CI 10.1–17.9) compared with placebo (11.8, 95% CI 8.8–15.9) (p = 0.04), but had no effect on ED50 (geometric mean 47.4 μM 95% CI 24.4–91.7 vs Placebo 37.6 95% CI 19.2–73.5 p = 0.37), see Figure 1.

In contrast, Baclofen had no significant effect on Emax (11.1, CI8.1–15.4) (p = 0.23), but, ED50 was significantly increased compared with placebo (geometric mean 75.2 μM 95% CI 37.2–151.8 p = 0.002).
Conclusion This data suggests the anti-tussive actions of $GABA_B$ agonists, against capsaicin-induced cough in healthy volunteers, occurs in the central rather than the peripheral nervous system.



Abstract P11 Figure 1

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P12 THE USEFULNESS OF HEARTBURN AS A MARKER OF THE SUCCESS OF ACID SUPPRESSION THERAPY IN CHRONIC COUGH

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Background A recent retrospective analysis of randomised controlled trials has suggested that patients with chronic cough reporting heartburn are more likely to benefit from acid suppressive treatment than those without heartburn.[1] Therefore we set out to investigate the response rate to acid suppression treatment (PPI and or H2 antagonists) in patients attending our specialist cough clinic.
Objective To determine the relationship between reported responses to acid suppression treatment and the presence or absence of heartburn.
Methods We performed a retrospective review of 59 consecutive new referrals to the clinic. The presence or absence of heartburn is collected routinely in our standard clinic proforma. Patients who were treated with acid suppression either at our clinic or previously at another centre were included, together with their reported response to treatment. A Fisher's exact test was used to assess whether those with heartburn were more likely to report a response of their cough to acid suppression treatment than those without heartburn.
Results Of 59 new referrals (median age 58 (range 26–76), 44 female), 21 (35.6%) reported heartburn, whereas 38 (64.4%) did not. Forty-four subjects had completed a trial of acid suppression therapy; 7 (15.9%) reported either a partial or complete resolution of their cough, but 37 (84.0%) reported no response. Of those reporting heartburn, 5/21 (23.8%) also reported a response to acid suppression. Of those not reporting heartburn, 2/23 (8.7%) reported a response to acid suppression. Although a greater proportion of those with heartburn reported improvement of cough with acid suppression, this did not reach statistical significance (p = 0.23).
Conclusion This data suggests that in the setting of a specialist cough clinic few patients report a response of their cough to