Results The chronic cough patients had a much lower C2 than healthy controls (median 0.094 vs. 0.5M, p = 0.009). The UTC VAS and coughs evoked were similar at C2 and for the preceding concentrations in both groups, Figure 1. However, tickle, irritation and taste were rated more highly in healthy volunteers compared with chronic cough patients at C2 and for several preceding concentrations. For example, at C2, irritation VAS was significantly higher in healthy controls (dp = 0.035) and tickle VAS was borderline significant (p = 0.052) compared with chronic cough patients, however taste differences were not significant (p = 0.29). SSAS, STAI state and trait were not significantly different between the groups (p = 0.23, p = 0.096 and p = 0.62 respectively).

Conclusions These data suggest that as well as differences in cough threshold, chronic cough patients exhibit heightened urge-to-cough rather than other sensations in response to low level tussive agents.

S31 REPRODUCIBILITY OF FOUR CHALLENGE MODALITIES FOR CHRONIC COUGH

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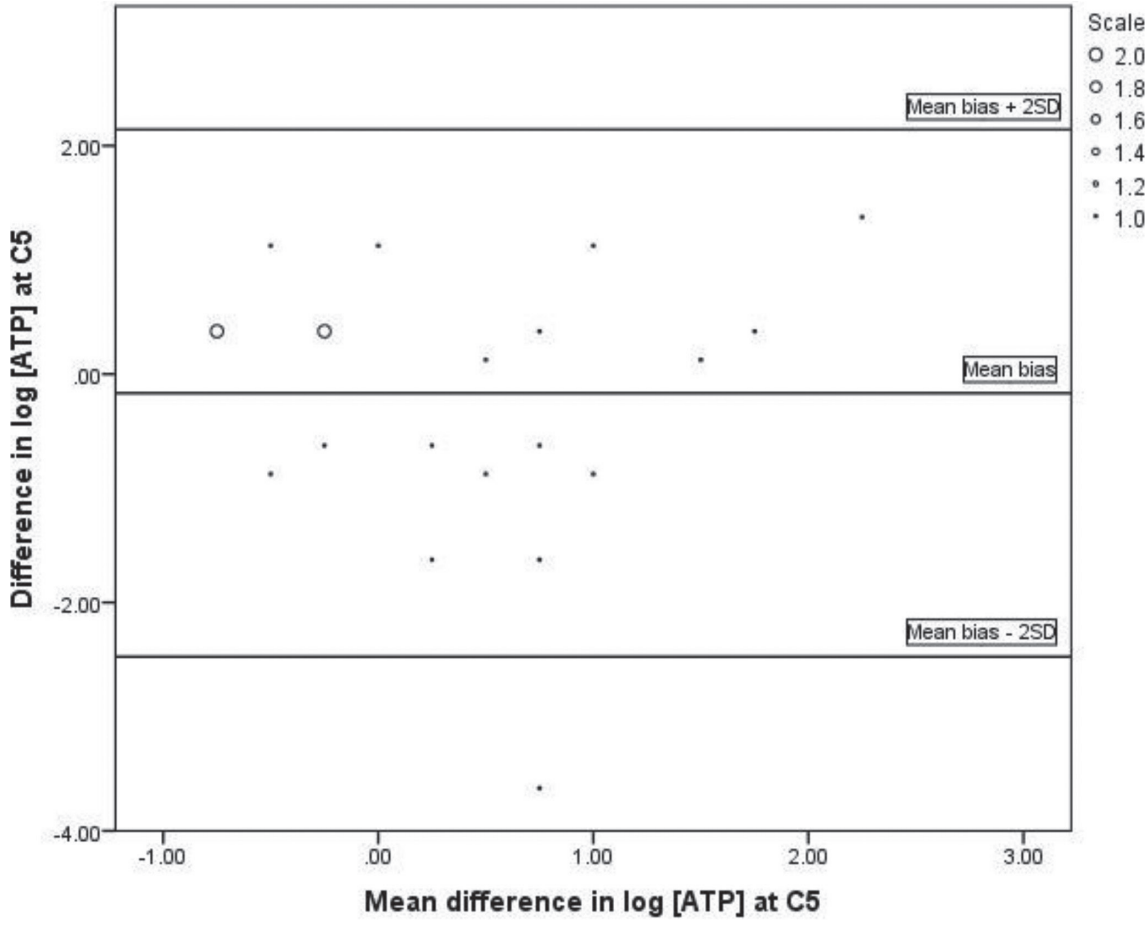
10.1136/thoraxjnl-2016-209333.37

Background Cough challenges are utilised in clinical research to help determine efficacy of treatments for cough. Recently adenosine triphosphate (ATP) has gained interest as a potential tussive agent. Previous research suggests such challenges are reproducible in healthy individuals, but little is known about their reproducibility in chronic cough patients, particularly the use of ATP as a tussive agent. This study aims to clarify if ATP is a reproducible tussive agent in chronic cough patients.

Method Data was collected on subjects undergoing cough challenges in the clinical trials unit. Subjects performed tussive challenges with four agents (capsaicin, ATP, citric acid and fog) in a randomly allocated order (visit 1); C2 and C5 were noted. This test was then repeated a week later (visit 2). Intra-patient variability was analysed using the Bland-Altman method for each tussive agent, presented as mean difference (95% limits of agreement). Inter-patient variability was analysed using paired t-tests. Pearson's correlation coefficient (r) between ATP and other agents was calculated.

Results 26 subjects were recruited; 21 with chronic cough. Average age of 57.4 ± 12.2, mean BMI of 26.8 ± 5.7, with an 85% female predominance. ATP showed a strong correlation with citric acid (r = 0.76, p < 0.001) and capsaicin (r = 0.66, p < 0.001). Bland-Altman analysis at C5 showed a 95% limit of agreement to be more than a two log dose difference except for fog: citric acid −0.07 (−1.7 to 1.5), capsaicin −0.1 (−1.5 to 1.2), ATP −0.2 (−2.5 to 2.1) (Figure 1), fog −0.01 (−0.3 to 0.3). Comparing visit 1 and visit 2 for each tussive agent showed no significant difference (p-value of 0.58, 0.80, 0.90, and 0.80 for ATP, fog, capsaicin and citric acid, respectively).

Conclusion ATP shows a strong correlation with other agents currently being utilised in cough challenges. This suggests direct



Abstract S31 Figure 1 Bland-Altman analysis of the 95% limit of agreement for ATP at C5

cell surface activation similar to other agents. Comparing challenges in chronic cough patients shows that whilst inter-patient variability is low, intra-patient variability is high. Therefore, in contrast to healthy subjects, cough challenges are unlikely to be a useful measure of determining individual improvement in chronic cough patients.

Beyond FEV_1 in COPD

S32 EPIDEMIOLOGY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) IN THE UK: FINDINGS FROM THE BRITISH LUNG FOUNDATION'S 'RESPIRATORY HEALTH OF THE NATION' PROJECT

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10.1136/thoraxjnl-2016-209333.38

Background We performed an analysis of UK respiratory disease epidemiology covering 2004–2012. Findings pertaining to COPD are presented here.
Methods Prevalence and incidence rates were estimated from The Health Intelligence Network database representing ~5 per cent of the population. Mortality figures came from official government statistics. WHO data were used for international mortality comparisons and numbers of hospital admissions/inpatient bed-days.
Results An estimated 1.2 million people (2% of the population) have diagnosed COPD – considerably more than the 835,000 estimated by the Department of Health in 2011 – making COPD the second most common lung disease in the UK, after asthma. Prevalence has increased by 27% in the last decade. Incidence fell 2004–2008 but has been stable since with just under 115,000 new diagnoses in 2012. Men are more likely to be diagnosed with COPD and to die from it than women. COPD is rare under 40 and becomes commoner with age, affecting 9% of those aged >70. COPD prevalence, incidence and mortality rates are highest in Scotland and the north of England. Prevalence and incidence are over twice as great in the most deprived population quintile than in the least. Nearly 30,000 people die from COPD each year, making it the second greatest cause of death from lung disease and the UK's fifth biggest killer. Mortality increased from 2004–2012. The UK COPD mortality rate ranks third in Europe. COPD accounts for over 140,000 hospital admissions and over a million bed days each year across the UK (1.7% of all hospital admissions and bed days). 97% of these admissions are for emergency care. London has notably more hospital admissions for COPD than other regions with similar prevalence.
Conclusions Gender, location, and deprivation differences in COPD epidemiology probably largely reflect differences in smoking behaviour. COPD continues to represent an enormous burden on UK health services.

S33 PHYSICAL ACTIVITY INTERVENTION VERSUS PULMONARY REHABILITATION IN COPD: THE LIVELY COPD PROJECT

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10.1136/thoraxjnl-2016-209333.39

Introduction and objectives The format of pulmonary rehabilitation (PR) may not meet the needs of all patients with COPD or lead to improved physical activity (PA) levels. Drop outs from PR can be high. A pedometer driven physical activity intervention (PAI) may offer patients an alternative method for increasing their PA. The aim of this study was to assess the feasibility of a 12 week clinician facilitated PAI versus PR in people with COPD.
Methods The design was a multicenter-randomised, parallel-group, feasibility study. Patients with COPD referred for PR were included. Spirometry and demographics were recorded. The following were assessed at baseline, post-intervention and follow up (12 weeks): PA using an ActiGraph GT3X+ accelerometer, sealed Yamax Digiwalker pedometer and the International Physical Activity Questionnaire (IPAQ) (long form); exercise capacity (Incremental Shuttle Walk Test (ISWT)); COPD Assessment Test (CAT). Recruitment, retention and completion/rates were recorded. Descriptive statistics and mean differences were used to analyse the data.
Results 50 patients (mean (SD) age 64 (8) years, 24M, FEV1 1.44 (0.63)) were recruited and randomised: PR n = 26, PAI n = 24. Of those screened 50/651, 13% were recruited. One participant randomised to the PAI started PR, a per protocol analysis was conducted; PR n = 27 and PAI n = 23. Completion of the PAI was 74% (17/23) and PR was 48% (13/27). Retention overall was 74% post-intervention (n = 18 PAI; n = 19 PR), and 66% at follow up (n = 15 PAI; n = 18 PR). There was a mean (95% confidence interval (CI)) change of 972 (−1080 to 3024) steps/day and 4 (−441 to 449) in the PAI and PR group respectively; results are found in Table 1. There were 4 minor adverse events (PAI n = 3 PR n = 1).
Conclusions This study will inform a future large scale randomised control trial (RCT). The LIVELY PAI intervention appears to be feasible and safe within this preliminary study, and enhanced physical activity in people with COPD. While the results require confirmation in a fully powered RCT, the mean increase in step count is in line with a recently published minimally clinically important difference.[1]

REFERENCE

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