

REFERENCES

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**P7 NEURONAL DYSFUNCTION IN ASTHMA; INSIGHTS FROM THE STUDY OF THE COUGH REFLEX**

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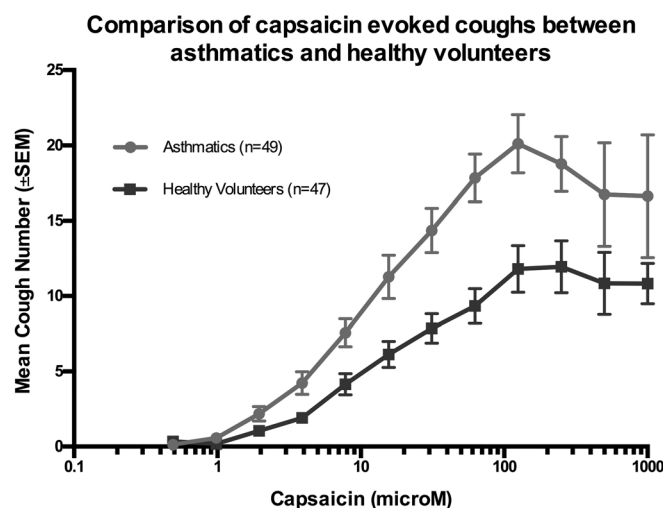
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**Introduction** Cough in asthma is common, troublesome, predicts severity and poor prognosis, yet remarkably little is understood about the underlying neuronal mechanism. Currently available asthma medications are not designed to directly treat cough, the archetypal airway neuronal reflex. Previous studies have commonly used the dose of capsaicin that evokes two coughs (C<sub>2</sub>) or five coughs (C<sub>5</sub>) as the standard measure to assess the sensitivity of the cough reflex. These measures poorly discriminate between health and disease, and correlate only weakly with objective cough rates.<sup>2</sup> A novel challenge methodology that uses the maximum number of evoked coughs (E<sub>max</sub>) as an end point better discriminates between health and disease and correlates strongly with subjective cough measures.<sup>2</sup>

**Objective** To assess the differences in the maximum cough responses evoked by capsaicin (E<sub>max</sub>) between asthmatics and healthy volunteers.

**Method** A capsaicin inhalational challenge (doubling doses 0.49 to 1000[μM]) was performed. 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. The highest total number of coughs evoked at any dose of capsaicin is denoted E<sub>max</sub>.

**Results** Forty nine asthmatics were compared with 47 healthy volunteers. There was a significant difference in the median age between groups (asthmatics 22.9 (IQR 20–27), healthy volunteers 38.0 (29–47) p < 0.001). Equal ratios of females were recruited in both groups (31 in asthmatics and 30 in healthy volunteers). There were no significant differences in gender, body mass index, smoking history or lung function. Asthmatics were of the mild to moderate category (BTS steps 1/2/3, 45/39/16%). There was a significant difference in the E<sub>max</sub> between asthmatics



Abstract P7 Figure 1

(mean coughs 20.5 (SD±10.1) and healthy volunteers 13.1 (±7.2) (p < 0.001). See Figure 1.

**Conclusion** Using this novel full dose response methodology, this data suggests that even during stability, asthmatics have an exaggerated cough response to capsaicin. This suggests that subgroups of asthmatics have neuronal dysfunction which can be identified by this capsaicin challenge.

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**P8 OBJECTIVE COUGH FREQUENCY MONITORING IN BRONCHIECTASIS**

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**Introduction and objectives** Cough is a major symptom in bronchiectasis. Cough monitors are emerging as an important tool that assesses cough objectively. The aim of this cross-sectional study was to assess cough frequency in non-cystic fibrosis bronchiectasis, investigate its association with patient-reported symptoms and health-related quality of life (HRQOL), and investigate potential factors of cough frequency variability.

**Methods** Patients with non-cystic fibrosis bronchiectasis were recruited from 2 outpatient bronchiectasis clinics. All patients underwent 24-hour ambulatory cough monitoring with the Leicester Cough Monitor, and reported sleeping time in a diary. The patients also completed the Leicester Cough Questionnaire (HRQOL), and visual analogue score (VAS) for sputum and cough severity. Sputum bacteria colonisation status was assessed, and defined as at least 2 positive cultures, minimum 3 months apart and within one year.

**Results** 49 patients were recruited; median (IQR) age 65 (52, 70) years, 64% female. The aetiology of bronchiectasis were: idiopathic (45%), post infective (29%) and other (25%). The prevalence of sputum colonisation were: pseudomonas aeruginosa

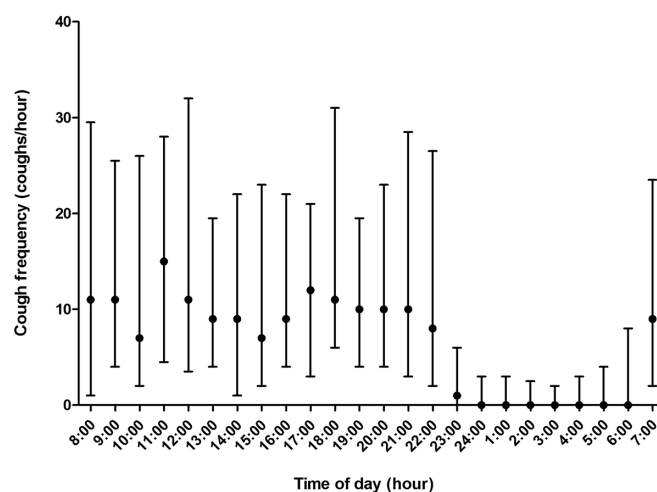


Figure 1. Cough frequency in patients with non-cystic fibrosis bronchiectasis. Data presented as median (IQR).

Abstract P8 Figure 1 Cough frequency in patients with non-cystic fibrosis bronchiectasis. Data presented as median (IQR)