



A survey of UK respiratory specialists' opinion on the management of chronic cough

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To the Editor:

The current understanding of the disease of chronic cough by UK respiratory specialists is unknown. Between February and April 2023, a survey was conducted of the knowledge, therapeutic choices and educational needs of the membership of the Yorkshire Thoracic Society (YTS) and the North-East Thoracic Society (NETS).

The survey was based on a previous report of the experiences of Spanish physicians [1] adapted for UK practice. It consisted of 17 questions assessing the demographics of the survey population, the population of chronic cough patients that they saw in their clinical practice and their definition of when a cough could be classified as a chronic. The diagnostic work up routinely performed for patients presenting with chronic cough was assessed. Three questions asked about therapy, one about the drugs prescribed and one about the effectiveness of these prescriptions. Lastly, usual treatment duration was assessed. The opinion as to the aetiology of chronic cough and underlying conditions/phenotypes was evaluated. Finally, perceived educational needs concerning chronic cough were determined.

The survey was conducted *via* an Internet-based program, and was available on laptop, tablet and smartphone. Following approval by the societies' executive committees, the membership of the YTS and NETS were contacted *via* e-mail requesting participation in the survey. Responses were anonymised and descriptive data collated. Where appropriate, opinion was elicited using a numerical rating scale of 1–10, 1 representing never and 10 representing always.

From a mailing list of 566 society members, 91 undertook the survey, with approximately half completing all 17 questions. There was an equal division of the sexes. Two thirds were aged between 30 and 50 years. Just over half were respiratory consultants and a further quarter, junior doctors in training. Nurses and physiotherapists made up the remainder. There was an even split between teaching and district general hospital practice.

Chronic cough was a frequent presentation in the respondents' clinical practice, with ~60% suggesting that a quarter or more of their patients had this as their primary complaint. There was, however, much diversity in the diagnostic criteria used by the respondents, with the majority having either no established criteria or suggesting that the cough should be of >12 weeks duration for it to be classified as chronic.

With regard to investigating a patient with chronic cough, there was almost universal agreement that spirometry, full blood count (eosinophilia) and chest radiography should be performed. Opinion as to whether a thoracic computed tomography (CT) scan was a routine investigation was evenly divided among the respondents. Bronchial challenge tests, bronchoscopy and oesophageal function tests were rarely performed (figure 1d).

Prescribing was generally limited to a few agents. Morphine was the opiate of choice, with codeine being rated as equally efficacious. Gabapentin and other psychotropic medications were rarely used. Proton pump inhibitors, carbocysteine and nasal corticosteroids were the class of drugs with some use, with a spectrum of responses as to their efficacy. Unsurprisingly, given the profession of the respondents, inhaled medication was frequently used, with the choice of bronchodilators, inhaled corticosteroids and



Shareable abstract (@ERSpublications)

Chronic cough is a common presentation to respiratory specialists. Here, we survey their opinion on diagnosis, investigation and management. Whilst investigations were appropriate, treatments were not guideline-based. Further education is needed. <https://bit.ly/4a7W7Ay>

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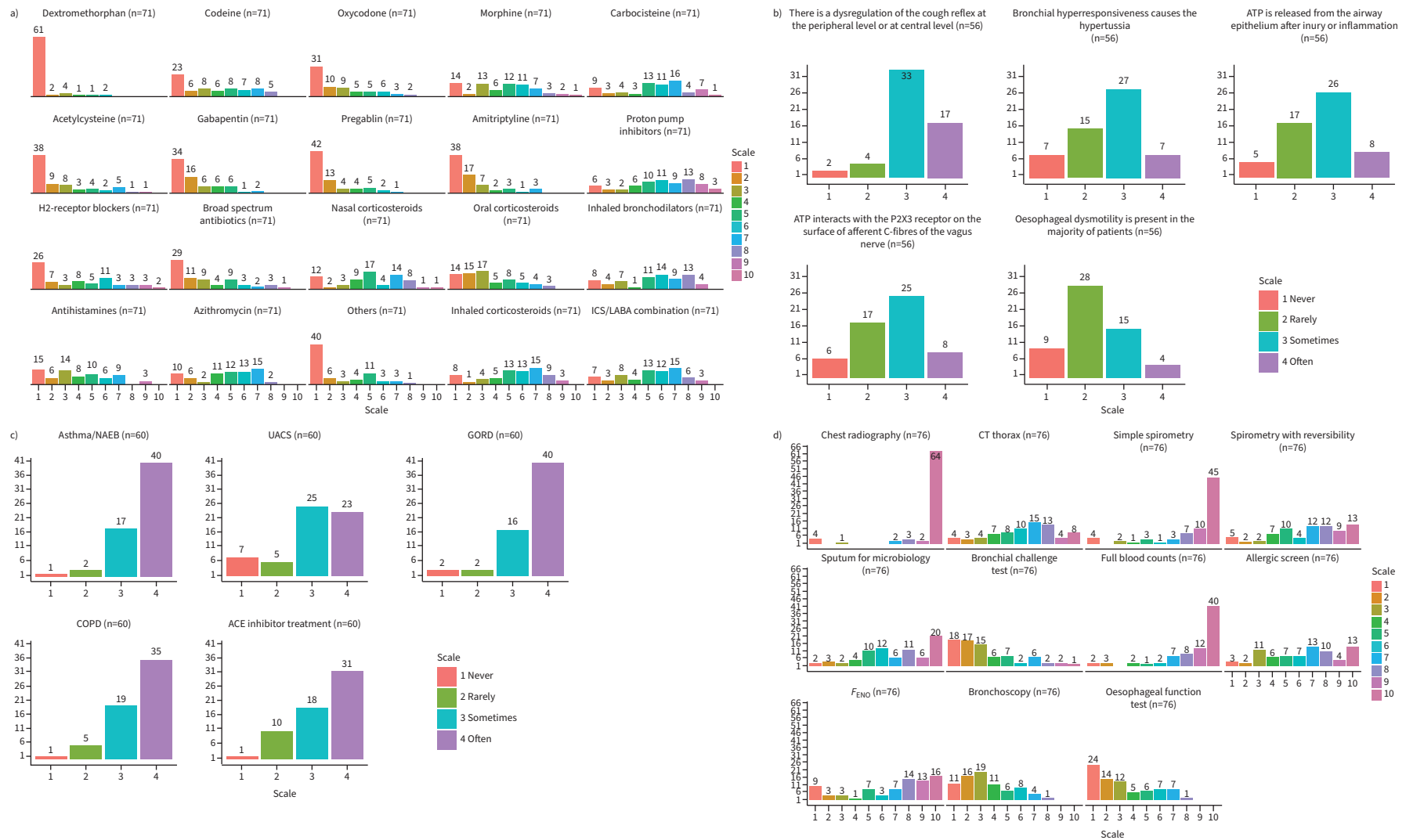


FIGURE 1 Survey responses. **a)** Based on your experience treating with chronic cough, please indicate how often you prescribe/recommend each of the following drugs. **b)** Which of the following are true regarding our current understanding of the possible mechanism of disease behind refractory chronic cough/unexplained chronic cough (RCC/UCC)? **c)** What are the most common underlying conditions that need to be ruled out before a diagnosis of RCC/UCC can be made? **d)** Regarding the diagnosis of chronic cough, indicate which of the following examinations you would perform routinely in patients with chronic cough of whatever aetiology. ICS/LABA: inhaled corticosteroid/long-acting β_2 -agonist; NAEB: nonasthmatic eosinophilic bronchitis; UACS: upper airway cough syndrome; GORD: gastro-oesophageal reflux disease; ACE: angiotensin-converting enzyme; CT: computed tomography; F_{ENO} : exhaled nitric oxide.

combination inhalers being equally ranked. Nasal corticosteroids were similarly prescribed in contrast to oral corticosteroids, which were rarely favoured although their efficacy was ranked relatively highly. Azithromycin use and efficacy was considered similar to that of inhaled medication (figure 1a).

As to the duration of treatment, the majority considered treatment should be given for at least 2–3 months followed by continuous treatment if response was satisfactory. As-required treatment was not a popular option and many respondents had no established criteria for prescribing.

Respondents were almost universal in the desire to rule out the different phenotypes of cough. The least popular diagnostic group was upper airway cough syndrome (figure 1c)

The overwhelming majority of the respondents (83%) felt that refractory chronic cough/unexplained chronic cough was a disease in itself with the aetiology of the condition being equally thought to be due to underlying respiratory disease or of a nonrespiratory origin.

As to the mechanism of disease, dysregulation of the cough reflex was thought to be the most likely pathophysiological feature. Bronchial hyperresponsiveness was commonly thought to be a cause of the hypertussia. The ATP/P2X3 axis was commonly considered relevant and oesophageal dysmotility dismissed as never or rare by the majority of respondents. This question demonstrated the only major difference between the groups of respondents. Those from NETS were uniformly negative in their opinion whereas the YTS members, having had recent educational sessions on chronic cough, were more likely to consider this as a potential aetiological mechanism (figure 1b top right).

Knowledge of guidelines was good, with the British Thoracic Society (BTS) and European Respiratory Society (ERS) guidelines the most popular. However, 20 of the respondents had never read any guideline. Whilst the majority of respondents had attended a lecture specifically concerning chronic cough, there was a desire to attend training sessions, with only 8% of those surveyed not interested in further education. The type of training desired included an online training package, dedicated face-to-face training and training when at respiratory meetings. Self-training was unpopular.

The concept that chronic cough is a disease in its own right has only recently gained acceptance [2]. Whilst different phenotypes of this condition, such as asthmatic cough and reflux cough, are recognised, the underlying common characteristic is hypersensitivity of the vagus nerve and its central projections. The previous paradigm of the triad of diseases, asthma, gastro-oesophageal reflux disease and postnasal drip, causing the symptom of cough was promulgated from the 1980s onwards. However, when it became apparent that many patients suffering from chronic cough with a particular disease label failed to respond to treatments for that condition, recent guidance changed [2]. Given this conceptual transformation in our understanding of chronic cough it is unsurprising that there is a wide diversity in the perception and experience in the management of this condition.

A number of studies have now been undertaken to capture the understanding and knowledge of chronic cough by healthcare professionals. PUENTE-MAESTU *et al.* [1] conducted a survey of four medical scientific societies in Spain. The format of this electronic questionnaire has been used as a template, adapted for local circumstances in this current investigation, and those in Canada [3] and Switzerland [4].

The demographics of the population surveyed differed between each study. Here, we surveyed two local thoracic societies consisting of respiratory specialists. In both Spain and Switzerland, the respondents were mainly family physicians. In Canada, there was an even split between general practitioners and specialist physicians. These differences are an important factor when comparing the responses to these surveys and preclude direct comparison. Thus, rounded data are discussed here.

Both the ERS and American College of Chest Physicians (CHEST) [5] guidelines define chronic cough as a cough lasting >8 weeks and, whilst this definition is arbitrary, it has been the basis for entry into multiple clinical trials. In contrast, the majority of UK respiratory specialists in the current study had either no established criteria or felt that the cough had to be >12 weeks in duration. In Switzerland, three quarters of respiratory specialists used the guideline definition compared to one third of family physicians. Knowledge of the guidelines was very dependent on the respondent's country of origin. Thus, the Spanish guideline from the Spanish Society of Respiratory Medicine was followed by the majority of participants in the Spanish survey and the CHEST guidelines by the Canadians. An exception is the current survey, where both the ERS guidelines (2020) and the BTS guidelines (2006) [6] were frequently acknowledged. However, one third of these respiratory specialists had not read any guideline.

In all of the studies, chest radiography was performed by the overwhelming majority of respondents. Spirometry was again almost universally performed with the exception being Canada, where it was not undertaken by half of general practitioners and a third of specialists. Full blood count was also seen as mandatory. Thus, the ERS guideline recommended strategy for initial investigation was observed by the overwhelming majority of respondents whatever their country of origin.

The current study contrasted markedly with the findings of the other reports in that very few respondents undertook other assessments. Less than one in five UK specialists frequently undertook (scoring >5/10) bronchial provocation tests. Whereas Spanish, Canadian and Swiss specialists perform the examination to a much greater extent. 91% of Swiss specialists reported performing the test often or very often. They also much more frequently utilised body plethysmography and exhaled nitric oxide fraction (both 94%). Routine CT scanning is not recommended in the ERS guidelines but was performed by the majority of the respondents from Switzerland (73%), who were also keen on allergy testing as were, unsurprisingly, Spanish allergists. Whether these differences in practice reflect differences in the understanding of the diagnostic utility of these investigations or whether they reflect differences in remuneration within the different healthcare systems is not clear.

The pharmacotherapy of chronic cough differed dependent on geography. Prescription of the opiates codeine and morphine was much more frequent in the European studies but rarely used in Canada, probably due to prescribing restrictions in the Americas (Imran Satia, McMaster University, Dept of Medicine, Division of Respiriology, Firestone Institute of Respiratory Health, St Joe's Hospital, Hamilton Health Sciences, Hamilton, Canada, and University of Manchester, Manchester, UK; personal communication). In contrast, neuromodulators are rarely used in Europe whereas quarter of a Canadian specialists prescribed them. In divergence to the recommendation in the ERS guidelines that clinicians should "not routinely use anti-acid drugs in adult patients with chronic cough", proton pump inhibitors were used by half of the respondents in the Canadian survey and considerable usage was seen in the current study. This may reflect a growing perception that reflux may be an aetiological factor in chronic cough but revealing the misapprehension that proton pump inhibitors treat reflux. In fact, they effectively treat peptic symptoms by blocking acid secretion but have a little effect on the number of reflux events. A systematic review [7] found no significant benefit over placebo for proton pump inhibitors in patients with cough but without acid reflux and only modest benefits even in patients with acid reflux.

In surveys that were conducted across specialities, there was also lots of variation in prescribing between the specialities. For example, in Spain, primary care physicians and pulmonologists were three times more likely to prescribe opiates than the allergists.

Inhaled therapy – bronchodilator, corticosteroid or combination – was widely used in all of the surveys but it was unclear whether this was just as a recommended 4-week trial to assess efficacy or continuing therapy. Nasal corticosteroids were widely prescribed despite very poor evidence supporting their use. Azithromycin prescription was only asked in the current survey and a modest usage was reported despite the recommendation for its use in productive cough in the ERS guidelines. With regard to treatment duration, the most favoured response was for 8–12 weeks treatment followed by continuous therapy if the patient relapses.

The current survey contrasted markedly with that performed in Canada, where half of respondents did not think that chronic cough was a disease in itself, whereas this was the overwhelming majority of opinion in this report. This may reflect the difference between the different guidelines used by the respondents. There was a fair degree of unanimity in the current survey that the ATP/P2X3 axis underlay the dysregulation of the cough reflex. Bronchial hyperresponsiveness was thought to be linked whereas oesophageal dysmotility was not recognised, despite evidence to the contrary [8].

The majority of respondents were interested in further education concerning chronic cough, with the preferred modes of education being either online or face-to-face events. This was reflected in the other surveys.

Whilst the three guideline-led investigations of chest radiography, spirometry and full blood count were performed routinely in this and the other surveys, there was disparity in that further investigations, particularly CT scan and measures of bronchial hyperresponsiveness, were much more frequently performed elsewhere. Prescribing was very dependent on the geographical location and specialism, probably reflecting different guideline opinion and uptake. This was also reflected in opinion on the aetiology of chronic cough. There was an almost universal desire for further education in this chronic debilitating condition.

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