Prognostic significance of chronic respiratory symptoms in individuals with normal spirometry

To the Editor:

The study by ÇOLAK *et al.* [1] concludes that chronic respiratory symptoms are associated with respiratory hospitalisations and death in individuals with normal spirometry without known airway disease. Whilst guideline-led spirometric diagnostic criteria revolve around the ratio of forced expiratory volume in 1 s (FEV_1) to forced vital capacity (FVC), in a recent study we concluded that almost a third of patients with a diagnosis of COPD in primary care do not meet those criteria [2]. Whilst a proportion of those could be due to poor spirometry technique, FVC is a difficult manoeuvre to perform. Our study supports the finding of ÇOLAK *et al.* [1] in that airflow obstruction as defined by FEV_1/FVC may be a poor diagnostic tool. Two thirds of our patients with normal ratio had abnormal FEV_1 % predicted. In the presence of normal chest radiography and examination, perhaps FEV_1 is a better diagnostic marker of COPD in primary care.

In patients with normal ratio and FEV_1 % predicted, rather than trying to diagnose COPD without obstruction(!), it is surely better to consider alternative chronic symptoms such as chronic cough. The recent publication of the guidelines from the European Respiratory Society task force on chronic cough suggests that this disease is poorly recognised and we would argue that the majority of patients in the study by ÇOLAK *et al.* [1] will actually have a diagnosis of chronic cough [3]. If the diagnostic criteria and the treatment recommendation within the cough guidelines are applied, perhaps a reduction in the morbidity and mortality described by ÇOLAK *et al.* [1] can be achieved by a correct diagnosis and applying appropriate treatment.

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From the authors:

We thank G. Hamad, A. Rigby and A.H. Morice for their interest in our study [1]. They raise some interesting points related to difficulties of spirometry performance and underdiagnosis of COPD, and poor recognition of chronic cough.

We agree that difficulties in spirometry performance can easily lead to underdiagnosis of COPD [2–4]. Since airflow limitation in COPD is defined as a low ratio of forced expiratory volume in 1 s (FEV_1) and forced vital capacity (FVC), many physicians, including general practitioners, may only focus on this measurement alone. However, patients with COPD often perform insufficiently during spirometry due to exhaustion or severe airflow limitation. Nonetheless, common sense dictates that individuals complaining of chronic respiratory symptoms with a normal spirometry should be reassessed within a short time period and, if symptoms persist, they should be referred to additional diagnostic assessment; preferably, to units with experience in advanced lung function measurements and other modalities, such as computed tomography imaging, to diagnose obstructive lung disease.

Even with a normal ratio of FEV_1 to FVC, a substantial proportion of patients with COPD will demonstrate low FEV_1 and/or FVC, a condition termed preserved ratio impaired spirometry (PRISm). Recently, individuals with PRISm have been observed with poor survival, and some of them fulfil airflow limitation criteria for COPD after relatively short follow-up time [5, 6]. Interestingly, individuals with normal spirometry but with chronic respiratory symptoms were still observed with poor prognosis after adjustment for lung function in our study [1], suggesting that PRISm alone is unlikely to explain our findings.

We agree that chronic cough is underdiagnosed, and is a condition that is highly treatable after a proper diagnostic workout [7–9]. Recently, we have shown that chronic cough is highly prevalent in the general population, including among non-smokers, and most of the identified risk factors were potentially modifiable [10]. Individuals with normal spirometry reporting cough had an increased risk of respiratory hospitalisations and death in the present study, comparable to the other chronic respiratory symptoms dyspnoea, chronic mucus hypersecretion and wheezing [1]. Although cough in the present study was not defined strictly as chronic cough [7], we still believe that most symptomatic individuals had chronic cough. Again, whether it is chronic cough or any other type of chronic respiratory symptoms, individuals with persistent symptoms should be referred to additional diagnostic assessment.

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