Evaluation of patients with symptoms of chronic lung disease in primary care

See linked article by Lamprecht et al. on pg 195

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In this issue of the PCRJ, Lamprecht and colleagues have drawn attention to the vexing problem of diagnosing COPD in primary care.1 Their study highlights the problem of failing to identify and diagnose patients with COPD in this setting. However, it also demonstrates an alternative problem: incorrectly attaching the label of COPD to patients who do not have the disease. Of course, the key to accurate diagnosis of COPD – as defined by the Global Initiative for Chronic Obstructive Lung Disease (GOLD) – is correct performance and interpretation of spirometry. Lamprecht et al. show us that, although accurate diagnosis of COPD was more likely in patients who reported having performed a lung function test, it was by no means a guarantee of accurate diagnosis. This report leaves open the critical question of whether enhanced lung function testing in primary care is likely to lead to improved outcomes for patients with chronic lung disease. Do we need to develop and evaluate new strategies for appropriate targeting of therapeutic strategies for chronic lung disease in the primary care setting?

The fact that COPD is underdiagnosed in primary care, and in the community at large, is well established in several studies4,5 and has become an article of faith within the respiratory community. However, this is unsurprising given that many people in the general population who meet the spirometric definition for persistent airflow obstructive
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(That is, a low FEV1/FVC ratio) do not have symptoms and are unlikely to be assessed for, or diagnosed with, any disease. As there is no evidence that specific therapeutic intervention is beneficial for patients with asymptomatic airflow obstruction, many of these “undiagnosed” cases are not disadvantaged by not having been diagnosed with COPD. More relevant are the patients with symptoms or disability attributable to airflow obstruction – particularly those who have sought medical care for this problem – who have not been diagnosed. I am not aware of published data on the population prevalence of undiagnosed symptomatic COPD, although this information could feasibly be derived from the Burden of Obstructive Lung Disease (BOLD) study.

The converse to the under-diagnosis problem is over-diagnosis. In Salzburg, 48% of all people who reported a COPD diagnosis did not have spirometric evidence of persistent airflow obstruction when tested.1 This problem has been less widely studied, but in south-west Sydney, Australia, Zwar et al. found that only 58% of patients whom GPs identified as having COPD had spirometry consistent with this diagnosis.2 A further 4% had reversible airflow obstruction consistent with asthma, and 20% had other spirometric abnormalities, mainly restriction. However, 18% of these patients had entirely normal spirometry. Both studies raise the concern that patients have been exposed to treatments they do not need (with the attendant costs and risks of adverse effects) and have not received effective treatment for the real cause of their symptoms.

Since GOLD defines COPD in terms of spirometry, the diagnosis can only be made after correctly performing and interpreting spirometry. The observed very poor concordance between diagnosis and spirometric findings in many studies strongly implies that the diagnosis is commonly made without the benefit of correctly performed and interpreted spirometry. Although 41% of people aged 40 and over living in Salzburg reported having had lung function measured,1 as the authors point out this may not be representative of “undiagnosed” cases are not disadvantaged by not having been diagnosed with COPD. More relevant are the patients with symptoms or disability attributable to airflow obstruction – particularly those who have sought medical care for this problem – who have not been diagnosed. I am not aware of published data on the population prevalence of undiagnosed symptomatic COPD, although this information could feasibly be derived from the Burden of Obstructive Lung Disease (BOLD) study.

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It remains to be seen whether accurate spirometric diagnosis of COPD in the primary care setting substantially improves outcomes for patients. Chronic lung disease in older people is a heterogeneous condition which cannot readily be classified simply as “asthma” or “COPD”.2 A diverse range of therapeutic options are available, including (but not limited to) bronchodilator therapy (both β2-agonist and anti-muscarinic), inhaled and oral corticosteroids, theophylline and other phosphodiesterase inhibitors, exercise-based pulmonary rehabilitation, long-term home oxygen therapy, enhanced sputum clearance techniques, vaccination against influenza, and a range of novel therapies currently under investigation. The heterogeneity in both the disease and the therapeutic options raises the possibility that these therapies would be used most effectively and efficiently if they were targeted at particular sub-groups of patients with chronic lung disease.

We are only at the beginning of attempts to design disease management strategies in accordance with this model. Measurement of pulse oximetry to identify patients with chronic lung disease who would benefit from long-term oxygen therapy is one example. It seems likely that performing spirometry for the detection of airflow obstruction in symptomatic patients will be most useful for identifying those who will benefit from bronchodilator therapy. However, as yet there are no feasible tests to assist in targeting β2-agonist and anti-muscarinic inhaled therapy specifically, nor are there tests that identify who will benefit from any of the other available therapeutic options. In the absence of such tests, available therapies tend to be added to each other in a patient who remains symptomatic, even if one of more of these therapies is not actually helping.

Hence, while improving the performance and interpretation of spirometry among breathless patients who are seen in primary care is a worthwhile objective, we need further research to identify and evaluate new tests that will help primary care doctors to utilise effectively and efficiently all of the therapeutic options that are available for patients with chronic lung disease.

Conflicts of interest The author declares that he has no conflicts of interest in relation to this article.

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