Asthma and chronic obstructive pulmonary disease (COPD) are highly prevalent in older people [1–4]. This well established fact has not, however, overcome the problem of underdiagnosis or misdiagnosis of both conditions in old age, with the inevitable effect on morbidity, and possibly mortality [1, 5]. Properly performed spirometric measurements of Forced Expiratory Volume in 1 second (FEV1) and Forced Vital Capacity (FVC), and the changes in those indices in response to bronchodilator or bronchoconstrictor drugs, are the cornerstones of the diagnosis. Moreover, the often subtle or atypical presentation of asthma and COPD in elderly patients places an even greater emphasis on the need for supporting spirometric evidence of those conditions in such patients [6]. There are several reasons for the under-use of basic spirometry in older patients, though one of the most ill conceived is the perception that older people are unable adequately to perform the tests. In this edition of Age and Ageing Pezzoli et al. present a paper which addresses directly the issue of data quality from spirometry in older people with respiratory symptoms [7]. They showed in a large sample that the majority (81.8%) were able to meet the ATS'94 criteria [8] for adequate diagnostic quality. A poor performance was associated with lower scores on cognitive and functional testing, or a lower level of educational attainment. Within the sample, age was not an independent determining factor for poor performance; an important finding particularly since the mean age in this study was only 75 but with a wide range of 65–94 years. These findings concord broadly with those of Bellia et al. [9] (although age was independently associated with a poor FEV1 technique in that study), and other studies of the relationship between cognition and lung function testing [10]. Of course, it must be born in mind that the prevalence of cognitive impairment rises with age, so in very elderly groups the proportion of patients unable to do spirometry would be expected to be higher than the mean found in this study, despite the lack of an independent effect of age. Not surprisingly, these findings are consistent with the observed relationship between cognitive function and the ability to use inhaler devices in elderly patients [11, 12].

The study also reinforces the need for strict quality criteria and good supervision of the spirometric tests especially in a patient group where performance is expected to be poor in a substantial proportion. Virtually all of the subjects were able to produce some result from an attempt at spirometry, so without a rigorous scrutiny, by eye or computer, of the resulting curves it would not be possible to view the results with confidence.

The implications for clinical practice

The message for all clinicians is therefore clear; most older people can have meaningful measurements made of FEV1 and FVC if there is careful attention to technique and data quality. These tests, when combined with an informed evaluation of respiratory symptoms, should lead to the timely and accurate diagnosis of asthma and COPD in elderly subjects [6, 9], which in turn should result in the better management of those conditions.

Another challenge is to address the needs of those elderly patients, about one fifth overall though a higher proportion of the very elderly, who cannot perform spirometry. This is a group now known to have lower cognitive and functional scores and in whom respiratory symptom reporting might be expected to be reduced or inconsistent, thus causing another barrier to the reliable diagnosis of airflow obstruction. They are also more likely to have co-morbidities which further cloud the diagnostic view. Objective measures of airflow obstruction are invaluable under such demanding clinical circumstances. Alternative methods are available for measuring airflow obstruction, some of which can be applied to patients who are unable to co-operate with spirometric testing, and this is particularly true of respiratory impedance measurement using the forced oscillation technique [10], though this method is rarely used in clinical practice. If such technology could be made more readily available it could have an important application in this clinical context, though much work would be needed to establish diagnostic criteria for asthma and COPD using that index. Therefore, the complex needs of such frail and impaired elderly people with suspected asthma or COPD, who frequently have impaired cognition and function, need to be subjected to further research.

Nevertheless, in the light of the evidence as it stands there is an obligation for clinicians generally, and geriatricians especially, to campaign for the more extensive use of spirometry in older patients, and to seek alternatives for those who are unable to perform spirometric tests.
References


