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## Usefulness of the COPD assessment test (CAT) in primary care

See linked article by Gruffydd-Jones *et al.* on pg 37

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Optimum management of COPD can improve prognosis and reduce the impact of the disease on quality of life and health status. For this purpose, optimal assessments of multiple dimensions of the disease are necessary.

Previous guideline recommendations were often based on limited evidence of therapeutic effectiveness and limited study of the feasibility of incorporating recommendations into primary care. Assessment of COPD severity was based solely on the degree of bronchial obstruction, despite a weak correlation between lung function parameters and perceived symptoms and limitations.<sup>1</sup> However, current guidelines recommend assessment of patient-focused outcomes; these can be measured using various validated health status measures, from the simple one-question Medical Research Council (MRC) dyspnoea grade to the more complex St George's Respiratory Questionnaire (SGRQ).

The difficult question is how we should incorporate patient-related outcome measures into routine primary care practice. One solution has been to use composite measures of disease severity including lung function and health status. The BODE index (Body mass index, Obstruction, Dyspnea, Exercise) uses the MRC as a measure of health status and has proved to be robust as a measure of disease severity and prognosis,<sup>2</sup> but is not widely used in routine care. The latest GOLD guidelines<sup>3</sup> suggest dividing patients into four categories based on current symptoms (assessed using the MRC or the COPD

assessment test (CAT)), percent predicted FEV<sub>1</sub>, and the number of exacerbations. However, this system has met with significant objections since it was neither derived nor validated statistically, is complex to use, and may not be suitable for primary care.<sup>4</sup>

Valid and reliable tools for health status measurement in COPD patients are beneficial for comparative studies between populations as well as for measuring short- and long-term changes, perhaps especially for health authorities, researchers and pharmaceutical companies. Pivotal questions remain, however, such as whether these tools improve the communication between health professional and patient, contribute to improved patient outcomes, or if they are feasible to use in routine general practice. Newer scales could facilitate use in routine care.

One of the aims during the development of the CAT was to improve communication between COPD patients and the clinician, thus enabling a common understanding of the severity and impact of the disease.<sup>3</sup> This is not easy to determine, but in this issue of the *PCRJ*, Gruffydd-Jones *et al.* report a very interesting randomised controlled study on the utility of the CAT in primary care consultations.<sup>5</sup> As many as 165 primary care physicians from six European countries conducted six consultations with standardised COPD patients (played by trained actors) covering a variety of COPD severities and co-morbidities. Physicians were randomised to see the patients in videoed consultations with or without the completed CAT. The physicians were scored according to their ability to identify and address A) relevant patient issues, and B) ten standard COPD issues, as well as being scored on their understanding of the case and their overall performance in 10-minute consultations. The physicians with access to the completed CAT more often achieved "high quality reviews" of the items included in COPD sub-score B, but no difference was found between the two groups as regards questions on tobacco smoking and exacerbations, non-COPD symptoms (sub-score A), co-morbidities or other consultation quality measures. Therefore, the CAT aided primary care physician assessment of COPD-related issues but not the detection of non-COPD symptoms or co-morbidities. There are, of course, limitations in standardised studies such as this, but the authors deserve credit for performing an ingeniously-designed and important study.

The Clinical COPD questionnaire (CCQ) was developed in 2003 and contains 10 items with three domains (symptoms, functional and

mental state).<sup>6</sup> The CCQ is well validated and has been widely used in research and clinical practice. The CAT was developed later,<sup>7</sup> and was specifically designed to be quick and easy to use. Candidate items regarding daily symptoms, activity limitations and other manifestations of the disease were identified, but in order to retain good psychometric properties the 21 draft items was reduced to eight and not to four or five as had been hoped.<sup>7</sup> The 8 items of the CAT cover cough, phlegm, chest tightness, breathlessness going up hills/stairs, activity limitation at home, confidence leaving home, sleep and energy. Good psychometric properties of the CAT have been confirmed in comparison with other measures such as the SGRQ, the Hospital Anxiety and Depression score, the CCQ, and different walking tests. The CAT is a reliable measure of overall COPD severity from the patient's perspective, is independent of tested languages,<sup>7,8</sup> has an excellent internal consistency, has high agreement between repeated measures in the stable disease phase,<sup>7,9</sup> and has good discriminative properties between the stable phase and exacerbation, by severity of exacerbation as well as before and after pulmonary rehabilitation.<sup>10-13</sup>

Comparing the CAT with other questionnaires, Ringbaek *et al.* reported an average time to complete the SGRQ, CAT, and CCQ, of 578, 107, and 134 seconds, respectively,<sup>13</sup> though we find these times somewhat optimistic compared with our own experience. The percentages of patients who needed help while answering the questions were 87%, 54% and 36% for the SGRQ, CAT and CCQ, respectively, with the highest figures among patients with low education level.

Tsiligianni *et al.*, in a comparison between the CAT and CCQ in COPD patients in the stable phase, confirmed good psychometric properties of both tools, and concluded that the tools should be easy and reliable to be used in studies as well as in daily clinical practice.<sup>9</sup> However, the study included few patients with severe COPD, some 10% were lost to follow-up and, as in other studies,<sup>6,7</sup> patients older than 80 years and those with significant co-morbidities were excluded.

Considering all these factors, recently the International Primary Care Respiratory Group (IPCRG) published a "Users guide to COPD wellness tools"<sup>14</sup> where the CCQ and the CAT were scored as the two best scores for use in daily practice, both of them being practical, easy to use, and possible to complete in two minutes. The scorers were active members of the IPCRG with a special interest in respiratory diseases, and so they might not necessarily represent most GPs. Interestingly, in a study across five European countries, Jones *et al.* found that GPs rather successfully graded COPD clinical severity without such tools with a greater discriminative power for assessing severity than FEV<sub>1</sub>-based staging.<sup>15</sup>

Despite these tools and recommendations, performing these tasks in routine practice requires incentives and organisation. In the UK, the MRC dyspnoea scale is now widely used since GPs are paid to include it in annual COPD reviews. Without corresponding incentives, the CAT or CCQ will have limited use in normal consultations.

The CAT and CCQ are both useful tools to assess patients' experience of COPD. Whether or not the implementation of these tools provides benefit beyond the use of the MRC or ordinary clinical

severity evaluation in a holistic, patient-centred consultation,<sup>15</sup> remains to be answered.

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