COPD Assessment Test: rapid and easily applied test that promotes patient self-management

COPD Assessment Test: teste rápido e de fácil utilização que promove o automanejo

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In 2001, the Global Initiative for Chronic Obstructive Lung Disease (GOLD) released a consensus report that ushered in a new era in the diagnosis, management, and prevention of COPD. The somewhat long document was aimed at general practitioners. However, because it was developed by leading experts in pulmonology in various parts of the world, it was adopted as COPD guidelines virtually worldwide. One of the chapters that drew the most attention at the time and that virtually universalized the diagnosis of COPD was the chapter on which the adoption of a FEV_1/FVC ratio < 0.70 is described.[1] At the time, there were two opposing views. One was that the FEV_1/FVC ratio was appropriate for the diagnosis of COPD, and the other was that the use of the FEV_1/FVC ratio might lead to false-positive diagnoses in elderly individuals. In addition, spirometry was reported to serve as a method for assessing the severity of COPD exclusively on the basis of FEV_1 in percentage of predicted. A chart was developed in order to guide treatment decisions based on disease severity. However, studies published over the years (and the consequent increase in knowledge of COPD) showed that FEV_1 alone was not a good marker of COPD severity. The study that best demonstrated that was a study conducted by Celli et al. and published in 2004; the study showed that a multisystem evaluation approach, including body weight, FEV_1, degree of dyspnea, and exercise capacity, was better at predicting the probability of survival of COPD patients than was the assessment of FEV_1 alone.[2] The resulting index, which was designated BODE, was shown to correlate with exacerbations, hospitalizations, quality of life, and various other parameters. After the publication of the study in which the BODE index was devised, other indices have been devised, emphasizing other measures, notably exacerbations.

In 2011, the GOLD published its quinquennial review. In response to the concerns of the scientific community, the GOLD revolutionized the classification of COPD, which now included, in addition to lung function (as assessed by FEV_1), the number of exacerbations, the symptom of dyspnea, and the quality of life in COPD patients, as assessed by the COPD Assessment Test (CAT). The combination of those parameters led the GOLD to classify COPD patients into quadrants (A, B, C, and D).[1] More recently, hospitalization and another questionnaire, the COPD Clinical Questionnaire (CCQ), were included in the classification.[1]

The CAT was developed as a simple, patient-completed questionnaire that is rapidly administered and that can provide information on a variety of areas. The first author of the CAT is Paul Jones, recognized for his expertise in developing respiratory disease questionnaires, the most well-known being the Saint George's Respiratory Questionnaire (SGRQ), which was translated to Brazilian Portuguese and culturally adapted for use Brazil in 2000.[3] However, the SGRQ and other specific or generic questionnaires commonly used in research are not used in the everyday clinical care of patients with COPD, because those questionnaires are long and complex.

The CAT was designed to be a simple health status measure for use in daily practice, being designed to aid in patient-clinician communication and in optimizing treatment. The essential requirements established by the authors were that the CAT should provide a valid and reliable measure of health status, be rapid and easy to use (having 5-7 questions), and be applicable worldwide. In an initial study, the authors sought to understand the experiences of COPD patients regarding the disease. The authors assessed the variability of those experiences, seeking to understand the language used by patients to describe them. At the same time, the authors sought to explore the patient characteristics used by physicians to determine whether their patients are being optimally managed, as well as seeking to determine the methods used by physicians to evaluate those characteristics. To that end, three focus groups of 58 patients were formed, 21

questions being initially developed in order to address breathlessness, wheezing, cough, sleep, energy/fatigue, social functioning, and anxiety.[4]

Those questions were tested in 1,503 COPD patients in six countries. In order to reduce the number of items, the authors used the Rasch model, which tests how items fit a one-dimensional model through an iterative process and a statistical guide for removing the items. At the end of seven rounds, the authors concluded that it would be impossible to limit the CAT to 5 questions, as initially intended. The final version of the CAT comprises 8 questions addressing the following: cough; phlegm; chest tightness; breathlessness going up a hill/stairs; activity limitation at home; confidence in leaving the house; sleep; and energy. The CAT was tested and showed good internal consistency (Cronbach's alpha coefficient = 0.88) and good reproducibility (intraclass correlation coefficient = 0.80). However, the correlations of the CAT with gender and age were weak or nonexistent. Nevertheless, the CAT correlated well with the CCQ (0.83) and the SGRQ (0.87), having correlated moderately with exacerbation (r = 0.60). To date, there have been 25 published studies investigating COPD patients and using the CAT as a dependent variable.

In a study published in this issue of the Brazilian Journal of Pulmonology, Silva et al. validate a Brazilian Portuguese-language version of the CAT for use in Brazil.[5] The version was available on a website[6] containing different language versions of the CAT. However, it had yet to be validated for use in Brazil, and its reproducibility had yet to be determined.

A series of steps are required in order to use a questionnaire in a language other than that in which it was originally written. The first step is the translation and cross-cultural adaptation of the questionnaire by using appropriate words and methods. A questionnaire originally addressing fatigue when shoveling snow evidently cannot be administered to patients living in a tropical country. The substitution of a given activity in the original questionnaire for another in the translated version should always be carried out with the participation of the first author of the original questionnaire, because the first author is the person who knows the degree of difficulty that he/she had in mind when developing the question. That is why the first author of the original questionnaire should be one of the authors of

the study validating a translated version of the original. The first author of the CAT, Dr. Paul Jones, did not participate in the study published in this issue of the Brazilian Journal of Pulmonology, because the questionnaire had previously been translated and was posted on the website of the company holding the copyright. However, he did participate in the initial translation. After the final version of the translated questionnaire is arrived at, the questionnaire is back-translated into the original language by a person who is proficient in both languages and has had no previous contact with the questionnaire. The back-translated version (i.e., in the original language) is sent to the original author for comparison with the original version, the original author subsequently giving his/her opinion on it.

The intraobserver and interobserver reliability of the CAT (as assessed by the intraclass correlation coefficient) was found to be excellent. This means that the same individual or different individuals will obtain the same results when administering the questionnaire to the same patient. This shows that the questions in the CAT are objective and are not influenced by whoever administers the questionnaire. To validate a questionnaire is to prove that it provides the same information as does a physiological test or a more complex questionnaire that has previously been validated for its intended purpose. The Brazilian Portuguese-language version of the CAT correlated weakly with the six-minute walk test. This was expected because it has been shown that quality of life does not correlate with exercise capacity. In addition, the CAT has only one question directly related to exercise capacity. It is of note that, although the original CAT correlated well with the SGRQ (r = 0.80), the translated version correlated moderately with the SGRQ. It is difficult to understand this difference. However, questionnaires are developed for a given population, habitually that of the country of origin of the authors. Although translated versions of a given questionnaire are cross-culturally adapted for use, it is possible that the translated questions do not fully reflect the situation in the country where the translated version will be used. The CAT was developed on the basis of focus groups in three different countries, none of which are developing countries. Nevertheless, the fact that the study did not show a high correlation between the questionnaire and the parameters evaluated does not invalidate the

use of the test, because it had previously been validated. Strictly speaking, there is no need to validate a questionnaire in the country where it was translated.

The study by Silva et al.[5] opens the possibility of using the CAT in studies conducted in Brazil, with the confidence that the answers to the questions will reflect the quality of life of COPD patients in the country. The CAT will allow us to classify COPD patients in Brazil more accurately, so that they can be compared with those in other countries.

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