



Letters to the Editor

Relationship Between the BODE Index and the EuroQol-5D in Patients Hospitalized With COPD**Relación entre el índice BODE y EuroQol-5D en pacientes con EPOC hospitalizados**

To the Editor:

Health-related quality of life (HRQOL) scales are tools of great interest in chronic obstructive pulmonary disease (COPD). While currently available therapeutic measures do not noticeably improve lung function parameters, they can lead to an improvement of symptoms reflected in patient quality of life. HRQOL scales could therefore be used to justify a particular treatment even in the absence of changes to airflow obstruction.¹ They have also been shown to provide additional information in terms of predicting the risk of death,² hospitalization,³ and use of healthcare resources.⁴

The degree of correlation between the St George's Respiratory Questionnaire (SGRQ)—the most widely used specific HRQOL scale in respiratory diseases—and objective measures is generally low.⁵ Moreover, the time needed to apply the SGRQ makes its use in daily practice difficult.

In the light of these data, we decided to ascertain whether there was a relationship between an easy-to-implement generic scale consisting of 5 dimensions (EuroQol-5D) and the body mass index, airflow obstruction, dyspnea, exercise performance index (BODE), currently the best predictor of COPD. For that purpose, we studied a cohort of 95 patients with a prior diagnosis of COPD admitted to our hospital between October 2006 and April 2007. The BODE index was assessed prior to discharge, and HRQOL was estimated by applying the generic EuroQol-5D. For the BODE, 20% of patients had scores of 3 to 4, 25% of 5 to 6, and 47% of 7 or greater. For HRQOL, the mean (SD) estimated score was 0.63 (0.21) for the tariff values, and 0.474 (0.17) for the visual analogue scale (VAS). On analyzing the correlation

between the EuroQol-5D and the BODE index, we obtained coefficients of -0.449 ($P < .001$) for the tariff value and -0.442 ($P < .001$) for the VAS.

The EuroQol-5D generic instrument correlates well with the BODE index, currently considered the best prognostic indicator in COPD. This finding is not unusual. If we consider that most patients with COPD die of nonrespiratory disease, it is not surprising that a generic HRQOL measure produces good or even better results than a respiratory QOL tool, which is largely used to assess just respiratory symptoms.

It is not our intention to replace the BODE index with the EuroQol-5D, but to point out that this highly applicable tool can be useful in daily practice, particularly as it correlates with the BODE index better than other tools of choice in COPD.

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Reflections on the evaluation of diagnostic tests: usefulness of ultrasound guided transbronchial needle aspiration in the diagnosis of mediastinal adenopathy**Algunas consideraciones sobre la evaluación de pruebas diagnósticas: Utilidad de la punción transbronquial guiada con ultrasonografía (USEB) en el diagnóstico de adenopatías mediastínicas**

To the Editor:

We have read the study by Sánchez-Font A et al¹ with great interest. First, we congratulate them for researching diagnostic tests

(DT), as they are unpopular but important studies to create effective treatments.² Secondly, these studies should follow a basic methodology³ that facilitates their external and internal validity, also, to contribute to avoiding the introduction into practice of DT that have been incorrectly evaluated, which could lead to erroneous decision making with adverse consequences.⁴

The authors consider that the punctual estimation of parameters (without confidence intervals of 95%[CI_{95%}]) are valid, which is not correct, as all punctual determinations are subject to random errors, whose magnitude depends on the size of the sample and the dispersion of individual observations, therefore, with DT, not calculating the CI_{95%} and substituting them with the value of p .^{3,5} In fact, if they are calculated (table 1), we observe that as the CI_{95%}

Table 1

Defining parameters in a diagnostic test with confidence intervals of 95%

	Value (%)	CI 95%
Indexes for Conventional TBNA		
Sensitivity	68%	54% to 80%
Specificity	100%	100% to 100%
Positive predictive value	58%	45% to 75%
Negative predictive value	58%	(48% to 75%)
Positive probability coefficient	–	–
Negative probability coefficient	0.32	7.2 to 0.49
Indexes for radial EBUS		
Sensitivity	63%	56% to 83%
Specificity	100%	100% to 100%
Positive predictive value	100%	100% to 100%
Negative predictive value	66%	(48% to 78%)
Positive probability coefficient	–	–
Negative probability coefficient	0.37	7.2 to 0.47

TBNA: transbronchial needle aspiration; EBUS: Endo-bronchial ultrasound.

overlap for both tests, we cannot conclude that one is better than the other.⁵ In addition to this, the authors confirm that the S and E of the tests vary depending on the prevalence (Pv) of the disease, which is not correct, as these are intrinsic properties of the DT, they completely define their validity, independent of the Pv of the population to which it is being applied; on the other hand, the predictive values are influenced by the Pv, in such a way that, if the rate of the disease is low, a negative result would rule out the disease with greater conviction, as the negative predictive value (NPV) is greater. By contrast, a positive result would not allow to confirm the diagnosis, resulting in a low positive predictive value (PPV).³ From all of this, it is deduced that the S and E lack practical clinical utility, as they provide information about the probability of having a positive or negative result depending on the true condition of the patient regarding the disease. However, when we conduct a certain test, we lack said information a priori. The predictive values, by being dependent on the Pv in each place, they cannot be used as indexes either to compare two different diagnostic methods, nor to extrapolate results from other studies to our study.^{2,3,5} As a result, we must calculate the positive and negative probability coefficients (PPC and NPC, respectively), that are clinically useful and, as they do not depend on the prevalence in each place, they make it

possible to compare different studies.^{2,3,5} Conceptually, they measure the probability of obtaining a concrete result (positive or negative) according to the presence or absence of disease.³ If we calculate them in this study (table 1), we see that the PPC tends to infinity in both tests (we cannot say which test is better), and the NPC, in both tests is around 0.3, for which neither of the tests functions to rule out disease (a test is considered useful if its NPC is less than 0.1).

The authors as well as reviewers should keep in mind all of these details in order to improve, among all of us, the scientific level and the usefulness of the DT. Consequently, Gómez Sáez et al⁴ have shown in a magnificent study the lack of methodological quality in work done on diagnose studies that are published in Spain, especially between 2004 and 2007, since less than 50% of the 8 articles on diagnosis published in the *Archivos de Bronconeumología* journal meet the minimum requirements for a study of these characteristics.

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Authors' Reply

Considerations on the evaluation of diagnostic tests: Efficacy of ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) in the diagnosis of mediastinal lymphadenopathy

To the Editor:

We thank you for the Campillo-Soto et al letter regarding our recently published work in *Archivos de Bronconeumología*.¹ We agree with their assessment of the methodological limitations of some studies that reflect specific epidemiological designs, and for which there are specific guidelines on drafting the manuscript (see <http://www.equator-network.org/>). However, we disagree with the interpretation made of our study. It is not the diagnostic accuracy of the technique that is analysed, but its usefulness in clinical practice. Therefore, the STARD checklist and the

considerations deriving from it would not be applicable in our case.

Having clarified this point, we can only express our surprise regarding their assertion that "the sensitivity and specificity are not appropriate for clinical practice". Articles published in such prestigious journals as *Chest* or *JAMA*^{2,3} show the sensitivity, specificity and predictive values of endobronchial ultrasound without so far questioning the validity of the results obtained using this diagnostic technique. Moreover, an interesting meta-analysis published in *Thorax* by Holty et al⁴ shows that the sensitivity of transbronchial needle aspiration depends on the prevalence of tumour infiltration in the mediastinal lymphadenopathy. As stated by Burgueño et al⁵ "when the sensitivity and specificity are shown to be independent of prevalence, reference is made to the prevalence of patients in the overall sample to which the test is applied. The sensitivity does depend on the prevalence of various degrees of the disease in a group of patients". In our case, this