Evaluation of the accuracy of several symptoms and domains in distinguishing patients diagnosed with fibromyalgia from healthy controls

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Received on February 12, 2015; accepted in revised form on May 4, 2015.

Key words: fibromyalgia, core symptoms, clinical assessment, reference standard, algometry.

Funding: The research reported in this manuscript has been funded by the Spanish Ministry of Science and Innovation (ref PSI2009-14555).

Competing interests: none declared.

ABSTRACT

Objective. *To assess the discriminative power of several symptoms and domains that may assist in the diagnosis of subjects with Fibromyalgia (FM).*

Methods. *79 individuals with FM and 66 healthy controls participated in the study. The potential domains proposed by the American College of Rheumatology (ACR) criteria were considered (Wolfe et al., 1990). Binary logistic regression and area under a ROC curve (AUC) were used to rank the importance of the variables in distinguishing patients from pain-free controls. Z values were then calculated to compare the AUC values obtained for each variable with that which yielded the highest AUC (reference standard). For each measure, the cut-offs that maximise sensitivity and specificity were also calculated.*

Results. *The mean pressure pain threshold (PPT) yielded the highest discriminative power (AUC, 0.991) and was therefore chosen as the reference standard; considering an optimal cut-off ≤3.97, it correctly classified 95% of patients and 97% of controls. The discriminative powers of tender point count (cut-off ≥9), health-related quality of life (cut-off ≤63.27) and vitality (cut-off ≤46.97) were as good as that of the reference standard. Finally, items related to physical role and function, body pain, fatigue and memory loss showed adequate discriminative power, although slightly lower than that of the reference.*

Conclusion. *In addition to pain, health-related quality of life and fatigue/vitality were confirmed as the best predictors of individuals with FM. The study findings indicate that tender point count and especially pressure pain threshold (measured with an algometer) continue to be key issues in the clinical assessment of subjects with FM relative to pain-free controls.*

Introduction

As early as 1989, Yunus advocated that diagnosis of FM should not be made by exclusion but through positive assessment of a constellation of symptoms (1). In 1990, the American College of Rheumatology (ACR) published the first classification criteria for fibromyalgia (FM): tenderness in 11 out of 18 discrete regions (tender points) and widespread pain during 3 months (2).

Although the 1990 ACR criteria have been validated and shown to be reliable, it has been argued that patients with FM display increased sensitivity to pressure pain throughout the body, not only at tender sites, and that the tender point count is influenced by physical and/or mental states (3-5). Moreover, applying the 1990 ACR criteria in clinical practice may overestimate the importance of tenderness (*e.g.* by oversampling in women) (6, 7). It has also been suggested that the 1990 criteria are not reproducible in 36% of fibromyalgia patients over a 6-month period (8). Taking into account these criticisms and on the basis of previous findings, Wolfe and colleagues proposed provisional modified criteria in 2010 (9). Thus, un-refreshed sleep, fatigue, cognitive symptoms and widespread pain, along with a number of symptoms such as pain or cramp in the lower abdomen, depression and headache were proposed as key variables in the diagnosis of FM (9-12). Although disregarding tender points decreased the specificity of diagnosis, the new classification criteria correctly classified 88.1% of cases (9).

The ACR provided provisional endorsement of the 2010 FM diagnostic criteria proposed by Wolfe, while waiting for external validation. Nevertheless, the modified criteria have not received full endorsement by the ACR, because this society has established a