Reviewer's report

Title: The interest of gait markers in the identification of subgroups among fibromyalgia patients

Version: 1  Date: 28 March 2011

Reviewer: Virginia Aparicio

Reviewer's report:

The interest of gait markers in the identification of subgroups among fibromyalgia patients, by Auvinet et al.

General Comments:

This is a well organized and interesting study. The study is easy to read, can add a valuable contribution to the fibromyalgia (FM) literature, and is relevant for clinical practice.

The authors justified the importance of measuring and comparing some gait parameters between persons with and without FM and the establishment of three different FM subgroups. Moreover, they did a good job on defining the limitations of the study (see minor comments). Despite this, I have some major and minor comments:

Major Compulsory Revisions:

-The main objection to this paper is that obese FM women have been excluded. Obesity prevalence is frequent between FM patients and, indeed almost the 40% percent of the female FM patients are obese (1-3) and thus, the present studied sample might not have been totally representative. Obesity affects gait, but other possibility would have been to adjusting by BMI in the statistic analysis without excluding the obese group of patients. Other option could have been to analyze both groups separately.

Where obese healthy women also excluded? If not, would be a methodological mistake, especially if, as is rightly advocated by the authors, obesity affect gait markers. In that sense, it would be useful to see weight and BMI data for both samples in the descriptive Table 1.

-Please define to what “primary FM refers”, (non existence of other comorbidities?, because some authors currently do not differ between primary and secondary FM…) Also try to describe more deeply by who and how this selection of primary FM patients was done.

-In the same way as it has been done in the FM group, are you aware of other comorbidities in the control group? (cancer, cardiovascular or rheumatic diseases, etc).
Minor Essential Revisions:

- Abstract:

Please include the age range in the methods section.

In the results section, after physical components and before Short-Form, it’s necessary to add a nexus (from…)

- Introduction:

The introduction is mainly focused on other studies where FM’s subgroups/subtypes have been established and the possible potential and relationship of gait in this sense. However, introduction does not mention others similar and practical studies related with the aims of the present study like the one proposed by Aparicio et al. 2011 (4) who suggested handgrip strength as a complementary informative and useful tool.

- Methods: (Mentioned in major comments section).

- Results:

FIQ value obtained is low (sample with a very moderate FM impact) when compared to the mean obtained in the majority of the FM studies. Might this phenomenon be due to the exclusion of obese FM patients (2-3,5-6) ?

- Discussion:

The authors should empathize about what and the manuscript contributes to the current knowledge. For instance: what’s new when compared with other studies that use easy and accessible methodology for similar aims, like does handgrip strength?

I miss the comparison of your FIQ-gait markers correlations with those found by Heredia et al. (7).

Despite that you have calculated the minimal sample size required for this study, other possible limitation of the study is the small sample size when making subgroups (Table 5).

In my opinion, another limitation is the price and difficult accessibility of the equipment needed to analyze the mentioned gait markers. Furthermore, this type of assessment requires a very specific professional qualification (biomechanics, physiotherapists, etc) or otherwise conducting training courses for physicians, rheumatologists, etc..

Discretionary Revisions:

Perhaps it would be easier for the reader to call and define more clearly each new subgroup, with an established number or name (i.e. subgroup 1: normal SF,
low pain, high activity and hyperkinesias; subgroup 2: ... 3:...).

Have you considered the possibility of re-categorizing your sample with the Souza et al. (8) classification of FM type I and II? For instance, FM Type I could have similarities and thus correspond to your subgroup 1.


**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests