Reviewer’s report

Title: Outcome Measures of a 6 Minute Walk Test: Relationships with Physiologic and Computed Tomography Findings in Patients with Sarcoidosis

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Reviewer: alfredo chetta

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In the paper by Alhamad et al, the authors examined in a large group of sarcoidosis patients the relationship between some variables of 6-MWT, such as walk distance (WD) and distance saturation product (DSP), and some clinical and functional characteristics, such as treatment, pulmonary function and echocardiography and computed thomography results. The authors found that 6-MWT results were related to the severity of the disease, expressed both in terms of clinical data and in terms of lung function and imaging results. They also found that DSP defined the functional status better than DW in patients with pulmonary sarcoidosis.

Major Compulsory Revisions

The topic is of relevant clinical interest and the manuscript reads quite well. However, I have some concerns about the work. My main concern is about the processing of the data. First of all, I think that in order to compare DSP to WD in the assessment of functional status of the sarcoidosis patients, the authors did not use the best way in the statistical analysis of the data. The authors correlated both DSP and WD to several lung functional data and found that the correlation coefficients of DSP were higher than the corresponding ones of DW. Moreover, they compared patients with pulmonary fibrosis to those without fibrosis and patients with and without pulmonary hypertension and they found that differences in DSP were higher than those in WD. I think that the authors in order to examine the diagnostic value of DSP and WD should construct ROC curves using DSP or WD, as independent variables, against the presence of fibrosis or pulmonary hypertension or ventilatory defect. Accordingly, they could obtain the sensitivity, specificity, positive predictive value and negative predicted value of DSP or WD, by using the area under curve. Secondly, I am puzzled about the significance of the results. Contrary to what the authors stated in the last paragraph of the introduction section, I do not think that a cross sectional retrospective study could provide information of prognostic value.

Minor Essential Revisions

The authors should provide the reference of the predicted values of the spirometry.

The authors should also provide some characteristics (name, make, country of manufacture) of the equipments they used.
The authors used only parametric tests in their statistical analysis. Did the authors assess the distribution of the variables before their processing? There are no figure in the manuscript. Some figures illustrating the main results could ameliorate the readability of the text.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**
I declare that I have no competing interests