Reviewer’s report

Title: Cortical thickness in amyotrophic lateral sclerosis - evidence for extramotor involvement

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Reviewer: Gabriele Siciliano

Reviewer’s report:

This interesting paper addresses a very important issue in ALS, namely the searching for in vivo diagnostic and prognostic biomarkers, in this case by applying recently available neuroimaging techniques to brain involvement in this disease.

The paper is basically well written. Some concerns arise related to the following points:

1- the anthropological equivalence of the ALS and control groups is an issue that needs to be addressed. Could please authors report p-values for age comparison and gender distribution between the two groups? It would be ideal to report also educational level for the two groups and related group comparison.

2- could the authors also add more clinical details about patients? For example the age of onset, the side of the body affected and if other cognitive tests have been performed on the ALS patients.

3- The cortical thickness analysis (CTA) needs the covariance of age, sex, and some clinical factors which can affect the image analysis. The authors must mention whether these covariances were added in this analysis.

4- On page 10, the authors report “A few brain regions showed an increase of cortical thickness in ALS, some of them even adjacent to regions showing thinning......we cannot rule out that one or the other brain area with increased cortical thickness represents a “false positive” ...... One possibility is that the observed increases are related to compensatory mechanisms.” The validity of the second hypothesis needs some more justification. In addition, related to that, could please authors describe in greater detail the CTA processing to better understand the possibility of “false positive” results? To this regard, it could be useful also refer to recent papers using functional brain MRI in ALS (Cosottini et al, Exp Neurol. 2012).

5- grammar revision throughout the text has to be performed.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

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