Reviewer's report

**Title:** Conservative treatment in scoliosis and vital capacity evolution Statistical analysis among 321 scoliotic patients treated with CMCR brace. Comparison to a group of 240 scoliotic patients treated with Lyon brace

**Version:** 1  **Date:** 2 December 2010

**Reviewer:** Stefano Negrini

**Reviewer's report:**

Dear colleagues,

Your paper contain data highly valuable, that are really worth publication. Unfortunately, to me they cannot be published today. In fact they are on one side, conveyed in this way, scientifically not sound, on the other writing must be greatly improved.

I give below a list of suggestions to strengthen your paper and present the data in a way to be useful for the “Scoliosis Journal” readership. Presumably a second thorough revision will be needed in the future.

**Major compulsory revisions**

1. Generally speaking the whole paper should be re-written to convey at best the message. Since the paper is made up of three different studies, one per single brace, and a comparison study, you should clearly state this distinction since the beginning.

2. You cannot compare apples and oranges, meaning that you cannot compare the whole population treated with CMCR with the whole population treated with Lyon brace, since they are totally different and the final results could depend on the starting differences among the population and not on the brace used. You can decide a specific population overlapping among the two (e.g. you can select in both populations patients of 30°+-4° and discover that in this way you can have two homogeneous populations to compare: obviously you have to check if this is true comparing for the other variables as well). If you are not able to compare two specific populations, then cut the comparison study, since it is only misleading, due to the baseline differences that do not allow any comparison. In fact: the differences you observed depends on the brace or on the magnitude of the curve, its rigidity, the potential of correction, and so on?

3. Organize the Material and Methods section dividing all the material into 3 separate studies: the CMCR brace; the Lyon brace; comparison between the two braces. Each study must have its separate sub-sections that must alternate properly: Patients, Treatment, Methods. At the start of the M&M section you can list the three studies and leave all commonalities (like instrument for FVC evaluation, the inclusion and exclusion criteria and so on).

**Minor essential revisions**
4. The aim of the paper should be at the end of the introduction section, and should come out as the consequence of the previous discussion of the background literature before this study was performed.

5. It surprises me that you do not include exercises among the treatment that have proved of efficacy in the literature: there are today some reviews [1-4] (you cited one, but not looking at the results they published on exercises as well – in fact it has been published in Phys Ther and not in an orthopaedic journals...), as well as some papers also receiving the SOSORT Award [5, 6].

6. M&M section. Listing the variables as it has been done is not useful: please list, where appropriate, only how you measured each specific variable. Moreover, you listed in qualitative variables some that are or logic (y/n) or numeric ordinal (Risser).

7. Give a separate headings for statistical analysis.

8. We lack another major information: in case of the Lyon brace, was the spirometric evaluation made before or after casting? Did you check for the effect of casting as well? This could have a major impact on your results.

9. The Results section is a long list very difficult to read. Please, avoid listing all the results, and convey in the text only the most important information, leaving to tables all the details. In this respect, avoid to duplicate information among tables and text, apart from those that you think are the most important. In this specific paper results could be synthesised in no more than 3 paragraphs (one per study).

10. References: a Cochrane review has been just published on bracing [7, 8] and it has not been cited. Moreover, you are a member of SOSORT, that produced a some consensus papers on braces [9-11], but you did not cite one... In this respect, did you control for the SOSORT criteria [9] in your study? If so, please specify in the Material and Methods section.

11. The figure captions should all be reported at the end of the text and not inside it.

12. Please make an effort to synthesise the tables as well. For example, you can put the start and end results of bracing in your two braces population in one table only, and then also compare statistically the results to see if there is any difference: this could be an adjunctive useful information.

References


3. Lenssinck ML, Frijlink AC, Berger MY, Bierman-Zeinstra SM, Verkerk K, Verhagen AP: Effect of bracing and other conservative interventions in the...


Level of interest: An article whose findings are important to those with closely related research interests

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