Reviewer's report

Title: In defense of adolescents: They really do use braces for the hours prescribed, if good help is provided. Results from a prospective everyday clinic cohort using Thermobrace. 2011 SOSORT Award winner.

Version: 1 Date: 25 July 2011

Reviewer: M S Wong

Reviewer's report:

Comments:
It is a very good attempt to track the patient’s compliance of wearing a prescribed spinal orthosis.

Major Compulsory Revisions
- A more specific topic on either the introduction of the Thermobrace or the comprehensive treatment protocol is suggested.
- Some typos and grammatical mistakes should be corrected.
- The last sentence of the section (Methods) is not clear.
- In Table 1, subjects with different curve patterns are shown. It is supposed not all the subjects with those curves at the proximal thoracic, thoracic thoraco-lumbar and lumbar regions. NA should be used in some rows instead of NS. Some modifications of the table are needed.
- What is the rationale for using every 20 min or 60 min as the sampling rate? A more precise sampling rate such as 1 min per sample would be helpful for assessing the treatment effectiveness of spinal orthosis.

Minor Essential Revisions
- In Figure 6, it would be helpful if the prescribed vs referred values are also included.
- If the focus of the manuscript is on the Thermobrace, the section (Treatment) may not need to be there.
- An algorithm was developed to cope with the seasonal changes of temperature. However, the device may not be applicable to the regions with hot weather. Such regions can have the room temperature above 31 degree Celsius which is close to the skin temperature. As a result, the users seem always compliant to spinal orthosis, no matter they wear it or not.

Discretionary Revisions
- In the consideration of compliance of wearing orthosis, we should include wearing time (quantity) and orthosis tightness (quality). The existing device (thermosensor) can provide the information of quantity but not the quality – how much biomechanical forces acting on the scoliotic spine via spinal orthosis. If
with no such monitoring, the applied forces may be deviated from the prescribed magnitude. On the whole, wearing a spinal orthosis only does not mean giving an effective treatment to the patients with AIS, until the orthosis prescribed tightness is maintained.

**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.