Reviewer’s report

Title: A new brace treatment similar for adolescent scoliosis and kyphosis based on restoration of thoracolumbar lordosis. Radiological and subjective clinical results after at least one year of treatment.

Version: 1 Date: 28 March 2012

Reviewer: Peter John Papantoniou

Reviewer’s report:

The research of this paper is sound. It is relevant and of interest.

The methods appear sound but there are some deficiencies with the exact number of patients followed up in comparison to the start group.

The discussion is not clear and concise which unfortunately is made worse by the poor english.

Major Compulsory Revisions

The english of this paper is poor.

It is almost unreadable. Even with several re-reads there are some sections where I find it impossible to understand the meaning.

I recommend that the entire paper be proof read for correction of the english and to clear up the exact meaning of some sections.

The statistics will need to be verified after the re-write as I found it difficult to be certain of the true statistics.

Minor Essential Revisions

As part of the english review some of the labels on the tables and diagrams need corrections.

Below are specific Minor Essential Revisions.

prospectively treated with a specific brace for one year in the period 2002-2005.

What brace? Please specify.

Both deformities were put together for several reasons, including the fact they react the same on this type of correction and share most of their etiologic factors.

Need to justify the above statement with references

Before beginning of treatment #in brace # radiographs showed compared to off brace radiographs a strong reduction of the Cobb angles in kyphosis group for sagittal curves (n=5, all p>0.001)
Should this be p<0.001?

The right thoracic curve at start with a mean of 43° (range of 14°- 76°) showed an in brace correction with a mean of 28° (range of 14° - 56°), expressed in percentages corresponds this to an achievable reduction of 36% at the beginning of treatment.

The degree correction (with ranges) is reasonable to talk about but the percentage reduction is meaningless with such a large range of values.

The progression rate defined as an increase of 6° from baseline (T0OB) is shown in table 2. After one year of brace treatment in one of the 38 patients with scoliosis < 25° (group B), a progression was obtained for the thoracolumbar left curve. This demonstrates in essence that in this group of patients the deformity is at least stabilized or even reduced.

You need to justify this statement statistically.

For the scoliosis patients (group A) the coronal curves showed on average a progression rate of 12.4 %, which were higher for the thoracic right and lumbar sagittal curves than for the thoracolumbar left (4.2%) and pelvic obliquity (4.3%). For the sagittal curves the average a progression rate was 1%.

This should be in degrees with ranges rather than percentages.

Patient information regarding the treatment and satisfaction are shown in figure 2. After one year TLI treatment most of the patients were satisfied by the visible result, would choose the same treatment again, including postural treatment. One third of the patients perceived a subjective problem with wearing TLI brace.

Do you have numbers/percentages for the questionnaire results

We found uniform etiologic factors originating in early thoracolumbar kyphosis.

You need to specify what aetiologic factors and how and why they are uniform.

Also do we use UK or US spelling. Aetiologic vs etiologic?

The concept of the corrective mechanism in this study is in line with Wolff’s law on bone remodelling[38,39] and with a modification taking also the resilience of soft tissues into account, known as the Volkmann-Hueter principle as both are of course of importance in growth.[40-42]

You already mentioned what Volkmann-Heuter was further up. No need to repeat it.

Overall this is good solid research that deserves to be published.
I would encourage the authors to clean up the english, clarify the meanings and check the statistics and have it reviewed again.
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**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.