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.

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Reviewer: Daniel Zarzycki

Reviewer's report:

I have read the article with great interest. Bracing is of value in the treatment of AIS as well as kyphotic deformities. The brace modifications proposed by the authors are unique and seem to apply forces that very precisely correct the deformity. Even though the concept of this study is interesting there are certain drawbacks of this study.

First of all the follow-up period is definitely too short, patients were follow-up only for one year from beginning of treatment and brace weaning is not mentioned, therefore so it is unclear whether the effect of bracing was stable over a longer period of time.

Also inclusion criteria are not so obvious, according to SRS bracing is introduced in patient with Risser 0, 1 and 2 grade, in premenarchal girls (or most 1 year postmenarchal). In the study group patients with Risser 3 and 4 were also braced.

The initial Cobb angle of the thoracic curve was mean 43 degrees, this is definitely too large Cobb angle for starting treating with brace. In these cases surgery is indicated. Range varied from 14 to 76 degrees! It is hard to imagine that a 76 degree curve may respond for bracing with an effect that will last after brace weaning. The same thing regards lumbar curves – with initial main curve of 60 degrees. Furthermore, there are no tables showing how big the curves were after 1 year follow-up. We can only note that a certain number of patients had curve progression or curve stabilization. But no values are mentioned.

All treated patients underwent also postural therapy, which was focused on stretching tight musculature. Are there any data that recommend this treatment? The current literature fails to find robust evidence in support of exercise therapy in the treatment of AIS. In a recent paper by Mordecai (Efficacy of exercise therapy for the treatment of adolescent idiopathic scoliosis: a review of the literature, Eur Spine J (2012) 21:382–389) the author concluded that no conservative treatment showed has good quality of evidence supporting the use of exercise therapy in the treatment of AIS.

Finally the conclusion done by the authors is very brave. Having these data it is difficult to conclude that only one year of treatment is enough for obtaining this effect. So rather these results may be called as ‘short term results’ or ‘initial results’.
**Level of interest:** An article whose findings are important to those with closely related research interests

**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