Author’s response to reviews

Title: The role of the paravertebral muscles in adolescent idiopathic scoliosis evaluated by temporary paralysis.

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Version: 2 Date: 20 Aug 2017

Author’s response to reviews:

Dear Editor and Reviewer

Thanks for a thorough review and relevant comments to our article. I have changed the manuscript according to the reviewer’s comments.

R1:

I believe the changes you made and the answers given to the Reviews are well constructed and right to the point. Although i would prefer that only lumbar scoliotic curves were included in this study, i think that the results are promising and more research should be done at this direction.

We agree; the lumbar scoliotic curves would probably have shown a greater change in Cobb’s angle. We have planned another study, but will not use botulinum toxin as a remedy to achieve change in the scoliosis, but by stimulation.

R2:

Some grammatical errors could be eliminated to make the writing more fluent.

We have revised the manuscript, and we have changed the grammar of passive voicing especially

Ref 87 in Line 77 is not listed on the ref list.

We have revised this, and the reference 87 is in fact reference 18
In table 2, the term "præ" has not changed.

This has been changed accordingly in table 2.1.

For the citation of "SPSS", usually I saw other authors put down "SPSS (version ?, SPSS Inc., Chicago, IL). However the format should follow the common practice in this journal

We have changed this to SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.) according to

https://www-01.ibm.com/support/docview.wss?uid=swg21476197

In table 1’s row of "Type of Scoliosis", Dex and Sin are suggested to change to left and right for common understanding.

This has been changed accordingly in table.1.

I suggest presenting the pre-post change after injection in graphs. This allows readers to see immediately the actual reduction of Cobb angle after injection to the concave muscles.

A figure 3 is added showing the pre-post changes in Cobb’s angle in the thoracic and lumbar spine.

In the discussion part from Line 186, the authors mentioned muscle on convex side should be the future focus. I am a bit mixed up in there. Do it imply, the significant reduction of Cobb angle seen after injection could simply due to measurements' variability but not an actual effect of the paralyzed concave muscle?

We agree with the reviewer, that this part of the discussion highlights, that our knowledge of the role of the psoas major or indeed other spinal muscles still needs to be examined; is the role one of a strong muscle, that primarily pulls the spine into a scoliosis? or is it one of weakness, where the other ‘normal’ psoas major pulls the spine into a scoliosis? Are there other important muscles as quadratus lumborum as examined by Grivas et al (2016) [ref 10]? We have not answered this in this study, but been able to demonstrate, that the muscles are important in the pathogenesis of scoliosis. This statement tries to communicate this uncertainty, and we have planned to undertake another study in the fall 2017 to see the effect of stimulating spine muscles instead of paralysis.

Thanks you to both reviewers for this comprehensive review.

Yours sincerely

Christian Wong.