

ANSWERING REVIEWERS

April 24, 2015

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 17023-review.doc).

Title: Predictors of Spine Deformity Progression in Adolescent Idiopathic Scoliosis (AIS). A Systematic review with meta-analysis

Author: Andriy Noshchenko, Lilian Hoffecker, Evalina L Burger, Christopher MJ Cain, Vikas V Patel, and Andrew P. Bradford

Name of Journal: *World Journal of Orthopedics*

ESPS Manuscript NO: 17023

The manuscript has been improved according to the suggestions of reviewers:

1 Format has been updated

2 Revision has been made according to the suggestions of the reviewer

- (1) The authors are grateful for very professional and benevolent review of the manuscript that was performed by reviewer 00505431. Following corrections have been made according to the comments:
 - (1.1) Comment: Risk factors for progression get confused with description of possible etiologies
Reply: 1) page 7, lines 1-7 (revised version): the paragraph was shortened, and information concerning etiology was removed; page 7, lines 26-28, and page 8, lines 1-2 (revised version): the paragraph was shortened, and information concerning etiology was removed.
 - (1.2) Comment: Page 6, lines 13-14. The ability to predict which curves would worsen and require active treatment is also of value because those with non-progressive curves could be discharged from follow-up, saving health care resources.
Reply: Page 8, lines 4-12(revised version): the paragraph was corrected according to the comment.
 - (1.3) Comment: Would finish background with a concise statement of the study question... how strong is the evidence for selected risk factors for progression of curves in AIS?
Reply: Page 9, lines 4-6 (revised version): the sentence was corrected according to the comment.
 - (1.4) Comment: The discussion reads like the results section. I would consider summarizing the findings in a manner in which the clinician can appreciate, what can we conclude based on this rigorous analysis.
Reply: We simplified the discussion according to this comment.
- (2) The authors would like to express our great appreciation for detailed and professional review that was performed by reviewer 00646241. Following corrections have been made according to the comments:
 - (2.1) Comment: fig.2 contains some relatively small letters, this may be somewhat improved.

- Reply: Fig.2 has been replaced by Table 3 with more readable size of shrift
- (2.2) Comment: p.4, line 15 instead of while 22-27% demonstrates better write while 22-27% demonstrate
- Reply: The correction has been made (see revised version: p.6, line 17)
- (2.3) Comment: p.8, line 15 instead of Jevuvenile better write juvenile
- Reply: The correction has been made (see revised version: p.10, line 18)
- (2.4) Comment: p.8, line 17 instead of Scheurmann's better write Scheuermann's
- Reply: The correction has been made (see revised version: p.10, line 20)
- (3) The authors appreciate for review of the manuscript that was performed by reviewer 02444825
- (3.1) Comment: The manuscript is too long.
- Replay: The manuscript was written following such contemporary requirements for systematic reviews as: PRISMA[1]; Cochrane Back Pain Group recommendations[2]; and AMSTAR[3]. We used a special program Review Manager 5.2 which provides templates for systematic reviews. Therefore, shortening of the text would lead to loss of important information decreasing comprehensiveness and quality of the review.
- (3.2) Comment: The study rationale is weak and the potential impact of this manuscript is also lacking.
- Reply: We think that this is personal subjective opinion of the reviewer which is controversial.
- (3.3) Comment: How the outcomes from this analysis will affect the clinical protocols currently utilized to predict deformity progression in AIS?
- Reply: Unfortunately current revue cannot contribute to improvement of predictive value of the contemporary protocols due to the absence of published high evidence level data. However, performed analysis showed that such protocols are based on low level of evidence results and should have limited predictive capacity. Thus, results obtained by these protocols should be interpreted cautiously, and cannot be used as strong diagnostic criteria which determine a treatment strategy.
- (3.4) Comment: One of the key analyzing factors missing is gender.
- Reply: We did not miss this factor. Of note, gender was not taken into consideration as a separate factor in majority of publications. In particular, gender was used as selection criteria (only girls included) in 9 studies, 13 studies included both genders having from 7% to 35% of boys, but results were not presented separately for each gender, and 3 studies did not specify gender at all (Table 1). Only one study included gender as a component of a multiple predictive model [4]. Therefore, adequate analysis of this factor was impossible.

3 References and typesetting were corrected

Thank you again for publishing our manuscript in the *World Journal of Orthopedics*.

Sincerely yours,

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References:

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2. Furlan AD, Pennick V, Bombardier C, van Tulder M. 2009 updated method guidelines for systematic reviews in the Cochrane Back Review Group. *Spine (Phila Pa 1976)* 2009,**34**:1929-1941.
3. Shea BJ, Hamel C, Wells GA, Bouter LM, Kristjansson E, Grimshaw J, *et al.* AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. *J Clin Epidemiol* 2009,**62**:1013-1020.
4. Ajemba PO, Ramirez L, Durdle NG, Hill DL, Raso VJ. A support vectors classifier approach to predicting the risk of progression of adolescent idiopathic scoliosis. *IEEE Trans Inf Technol Biomed* 2005,**9**:276-282.