Author’s response to reviews

Title: The Sforzesco brace can replace cast in the correction of adolescent idiopathic scoliosis. A controlled prospective cohort study

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Author’s response to reviews: see over
Theodoros B Grivas

Thank you very much for your contribution.

Major Compulsory Revisions

1. We changed according to your suggestions paragraph 1 and 2 of Background to stress the clinical usefulness today of a comparison with the Risser cast: in fact, it is still widely used (a list of Centres has been proposed in the Background); it is still possible that its efficacy is higher than bracing; it’s an ideal control group for any brace to check its corrective efficacy.

2. Thanks a lot. Changed.

3. You are correct. We changed the text and stated that in the US Risser cast is still used only in children, and changed the reference.

4. Sorry, but it was already explained in the Outcome Measures (secondary outcome) as follows: “The Aesthetic Index,[19] which is the sum of three items (shoulders, scapulae and waist symmetry) evaluated on a three-point (0-1-2) scale to give a total of six points was evaluated in terms of repeatability,[19] and accordingly variations were considered if there was a change of at least two points.” For other particulars, we cite the presentation we made in Boston on the Aesthetic Index, that it is going to be submitted to Scoliosis as an independent paper. Do you think we have to add something more?

5. We inserted the distribution of Risser signs; in fact all Risser 4 patients where accounted as such even if they were 3 on one side and 4 on the other.


7. Phrase cancelled; throughout the paper we eliminated the term gold-standard (you are right that a gold standard is an actual standard…)

8. Thank you, it was not inserted for a mistake…: we added one paragraph with sub-heading in the methods section.

9. According to all the changes made we did not eliminate the Risser cast group, but we changed the title. We believe that a controlled paper it’s much better than a case series as it would be the paper without the control group. Moreover, nobody verified the efficacy of casts in the past and this is the first paper dealing with their results, in this case showing that we can substitute casts with a specific brace.

Elias Vasiliadis

Thank you very much for your contribution.

Major Compulsory Revisions

I understand your point, but at this stage we are not ready yet to publish the final results with the Sforzesco Brace. We maintain here the Risser cast group because the Risser cast is still widely used (a list of Centres has been proposed in the Background); it is still possible that its efficacy is higher than bracing; it’s an ideal control group for any brace to check its corrective efficacy. Moreover, we believe that a controlled paper it’s much better than a case series (i.e. the paper without the control group).

Minor Essential Revisions

1. You are correct. We changed the text and stated that in the US Risser cast is still used only in children, and changed the reference.

2. This phrase has been added to the material and method section: “in a preliminary study we verified that in Italy menarche is not a reliable sign of maturity, therefore we do not consider this parameter as a reason not to treat patients and we rely only on skeletal signs.”
Charles H Rivard

Thank you very much for your contribution.

I agree with you: with the Sforzesco brace we do not maintain this division (corrective vs maintenance phases), even if it was correct with the Risser cast. In fact, with Risser we had a big initial correction and then we continued to lose correction with braces until the end of treatment. Now with the Sforzesco brace correction is much more progressive and in some cases we continue to correct more and more, while in others it’s like the Risser, but without losing significantly. I understand that with the SpineCor can be totally different… I think that we have to change theories according to the instrument we use, because ways of correction are different...

Manuel Rigo

Thank you very much for your contribution.

Major Compulsory Revisions

1. Sorry, we did compare the groups at start of treatment for all parameters and we wrote there were no differences but for an unknown reason in the last version the phrase “in all clinical and radiographic parameters or” was cancelled and remained only “or” … Now it has been corrected. Thank you.

2. We did not collect the data on correctibility, because these radiographs were really seldom done (no more than 2-3 cases out of 50), because the patients just did not want to be operated and so did not make all classical pre-surgical evaluations. We discussed this point in the discussion section

3. according to your suggestion we added to the weak points you suggested and we already listed (“the retrospective collection of data in RCG, but this is the only way to have a best clinical approach; not having included the dropouts, but this was not possible in the retrospective Risser cast group, so that the study could not include an intent-to-treat analysis; and the fact of being focused only on the corrective phase (i.e., short-term results)” also: “the absence of data on reducibility of the curves through lateral bending radiographs, avoided in patients not surgically treated”

4. I understand your willingness of strengthening our study eliminating some possibly redundant data like aesthetic index and sagittal profile, but we stated as a Consensus in SOSORT the importance of Aesthetics and I think we must introduce this outcome in all our studies; on the other hand, the sagittal profile is a key result, because it worsened with the Risser cast and not with the Sforzesco brace, and this is a good reason to change (I must say that I see this result everyday in my patients, so the numbers just show what I see). I understand your point that the arrows are not a very good measurements, that we need something much more complex. In any case is a measurement, with advantages and disadvantages: it’s enough to know the limitations of a measurement, then it can be used. Finally, I agree that final results are much more important, but we all know that once the sagittal profile is loosen, then you cannot recover it; with the Sforzesco brace we do not loose the sagittal profile, while we did lose it immediately (and not at the end of treatment) with the Risser cast. This is a key result in my mind, and must be shown (even if with the limitation of using the arrows: in the future perhaps we will have something better, but we do not have the Formetric for all patients …)