

**ORAL PRESENTATION**

**Open Access**

# Correlation between in-brace radiographic correction and short time brace results

F Zaina<sup>1\*</sup>, S Donzelli<sup>1</sup>, M Lusini<sup>2</sup>, S Negrini<sup>1</sup>

From 8th International Conference on Conservative Management of Spinal Deformities and SOSORT 2011 Annual Meeting

Barcelona, Spain. 19-21 May 2011

## Background and purpose

In-brace X-ray is considered a reliable check of brace efficacy [1-3]. The aim of this study was to correlate the in-brace correction with the short term results of treatment (6 months).

## Materials and methods

Design: pre-post study.

Population: 41 consecutive adolescent girls with idiopathic scoliosis who were prescribed a brace treatment (39 thoracic curves, 37±12°; 16 thoracolumbar, 38±13°; 12 lumbar, 31±8°. Risser 0-3).

In-brace X-ray and 6 months treatment out of brace X-ray results were correlated, according to curve localization. The in-brace/out-of-brace ratio was calculated, curves were grouped according to the Risser sign, the results (<10°, 10° out-of-brace), in-brace correction (<10°, 10°), the magnitude (<30°, 30°-45°, >45°).

Statistical analysis: Correlation Coefficient.

## Results

The in-brace/out-of-brace ratio varied according to localization of curve and Risser, achieving the best results for Thoracic curves (38-45%). The groups of Thoracolumbar and Lumbar had higher variability (17-65% and 17-40%). The correlation coefficient between in-brace correction and out of brace results was statistically significant: 0.85 for Thoracic curves, 0.64 thoracolumbar, 0.72 lumbar. Risser groups: 0.65-0.98 Thoracic, 0.78-0.90 Thoracolumbar, 0.94-0.98 Lumbar. For Results groups, the correlation was better for High results in lumbar and Low results for thoracolumbar, no differences for thoracic. Low in-brace correction had a low correlation coefficient for thoracic and lumbar curves. No differences for Magnitude.

## Conclusions

The correction after 6 months of brace are 17-47% of the in-brace correction. The correlation between in-brace correction and short time results of brace is significant, range 0.64-0.98. The in-brace correction seems able to predict the short time results of treatment.

## Author details

<sup>1</sup>ISICO Milan, Italy. <sup>2</sup>Siena University, Italy.

Published: 27 January 2012

## References

1. Clin J, Aubin CE, Sangole A, Labelle H, Parent S: Correlation between immediate in-brace correction and biomechanical effectiveness of brace treatment in adolescent idiopathic scoliosis. *Spine* 2010, **35**(18):1706-13.
2. Weiss HR, Rigo M: Expert-driven Chêneau applications: description and in-brace corrections. *Physiother Theory Pract* 2011, **27**(1):61-67.
3. Landauer F, Wimmer C, Behensky H: Estimating the final outcome of brace treatment for idiopathic thoracic scoliosis at 6-month follow-up. *Pediatr Rehabil* 2003, **6**(3-4):201-7.

doi:10.1186/1748-7161-7-S1-O27

Cite this article as: Zaina et al: Correlation between in-brace radiographic correction and short time brace results. *Scoliosis* 2012 **7**(Suppl 1):O27.

**Submit your next manuscript to BioMed Central and take full advantage of:**

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at  
www.biomedcentral.com/submit



<sup>1</sup>ISICO Milan, Italy

Full list of author information is available at the end of the article