

ORAL PRESENTATION

Open Access

Evaluation the immediate effects of bracing on kinetic parameters in adolescent idiopathic scoliosis patients

Mohammad Taghi Karimi^{1*}, Mahsa Kavyani¹, Mohammad Reza Etemadifar²

From 11th International Conference on Conservative Management of Spinal Deformities - SOSORT 2014 Annual Meeting
Wiesbaden, Germany. 8-10 May 2014

Background

Idiopathic scoliosis induces change in coordination between body segments, spinal anatomy, left-right trunk symmetry and gait pattern. Various treatment methods have being used for scoliosis which includes: physical therapy, occupational therapy, osteopathic therapy, casting, bracing and surgery. However, using brace is a commonly used method in this regard. Although, the influence of brace to reduce the scoliosis curve has been investigated in lots of research studies, there is not enough research regarding the influence of brace on performance of scoliotic subjects while walking and standing. Therefore, the purpose of this study was to evaluate the immediate effect of brace on stability performance of scoliotic subjects and the symmetry of the ground reaction force applied on the right and left feet while walking.

Method

Then girls aged between 8 and 12 years were recruited in this study. The gait analysis was assessed using a three-dimensional motion analysis and a force plate (Kistler) in two conditions, with and without Boston brace. Moreover their stability was evaluated by use of force plate. The difference of kinetic and stability parameters between two conditions(with and without Boston brace)was checked by use of paired T-test.

Results

For scoliotic patients, comparison of in-brace and out-brace situations revealed a significant decrease in postural sway in brace associated with increase of patient

stability. But very short-term bracing in AIS has no significant effect on the symmetry of force applied on right and left limbs during walking (p-value<0.05).

Conclusion

Bracing aligned the vertebral column and improved the abilities of the subject to stand and walk.

Authors' details

¹Musculoskeletal Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. ²Orthopedic Surgery Department, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran.

Published: 4 December 2014

doi:10.1186/1748-7161-9-S1-O58

Cite this article as: Karimi et al.: Evaluation the immediate effects of bracing on kinetic parameters in adolescent idiopathic scoliosis patients. *Scoliosis* 2014 **9**(Suppl 1):O58.

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



¹Musculoskeletal Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

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