SpineCor treatment for Juvenile Idiopathic Scoliosis: SOSORT award 2010 winner

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Abstract

Introduction: Juvenile idiopathic scoliosis is a condition used to describe patients who are least 4 years of age but younger than 10 when the deformity is first identified. In these patients, the condition is usually progressive and those that are diagnosed at five years or younger have a high chance of progression to a large curve, with additional pulmonary and cardiac complications. The main form of conservative treatment for juvenile scoliosis is the use of a bracing system. This prospective interventional study was conducted to evaluate the effectiveness of the Dynamic SpineCor orthosis for juvenile idiopathic scoliosis as well as to evaluate the stability of the spine after the weaning point.

Material and Methods: For this study, 150 juvenile patients were treated by the SpineCor orthosis between 1993 and 2009. Of these, 67 patients had a definite outcome and 83 are still actively being treated. To determine the effectiveness of the brace the OUTCOME criteria recommended by the SRS was used.

Results: The results from our study showed that of the 67 patients with a definite outcome, 32.9% corrected their Cobb angle by at least 5° and 10.5% had a stabilization of their Cobb angle. Within the patients with a definite outcome, 37.3% of patients where recommended for surgery before authorized end of treatment. For this group of patients, surgery was postponed. Looking at the stability of the curves 2 years after the end of the treatment, we found 12.5% of the patients continued their correction without the brace being used and 71.4% remained stable.

Discussion: From our study we can clearly see that the effectiveness of the SpineCor orthosis in obtaining and maintaining the neuromuscular integration of the corrective movement can be achieved effectively for juvenile patients. Over 75% of all patients that finished the treatment had remained stable with a few continuing to correct their Cobb angle after the use of the SpineCor orthosis was discontinued.

Conclusion: Our conclusion from this study is that the SpineCor orthosis is a very effective method of treatment of juvenile idiopathic scoliosis. The results obtained also indicate that treatment outcomes are better with early bracing. Most encouraging perhaps is the fact that the positive outcome appears to be maintained in the long term, and that surgery can be avoided or at least postponed.