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Spinecor vs exercises for adolescent idiopathic scoliosis: short term results

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From 7th International Conference on Conservative Management of Spinal Deformities
Montreal, Canada. 20-22 May 2010

Introduction

SpineCor and exercises have both results testifying their effectiveness in Adolescent Idiopathic Scoliosis (AIS) treatment. Since some years we introduced SpineCor as a treatment for patients at highest risk of bracing that we previously treated with exercises. The objective of this study is to compare the short term results of the Spinecor vs SEAS exercises for AIS.

Materials and methods

Study design: retrospective controlled study

Population

56 consecutive AIS patients from our prospective database (39 female; age 13 ± 1 , Cobb $21 \pm 4^\circ$; ATR $11 \pm 4^\circ$); 28 patients (19 females; age 13 ± 1 ; TRACE score 6; Cobb angle $22 \pm 4^\circ$; ATR $12 \pm 4^\circ$, Risser 0-3) treated by Spinecor 20/24 hours; 28 patients (20 females; age 13 ± 1 ; TRACE score 5; Cobb angle $20 \pm 4^\circ$; ATR $9 \pm 3^\circ$, Risser 0-3) treated by SEAS exercises. The short term results of treatment were evaluated at the moment of the first X-ray performed without the Spinecor 17 ± 4 months later. For the SEAS group the X-ray were performed after 14 ± 4 . Patients were evaluated both clinically and radiographically before and after the treatment. Main outcome measures: N° of patients who had to wear a rigid brace, TRACE (Trunk Aesthetic Clinical Evaluation), Cobb angle (changes $> \pm 4$), ATR (changes $> \pm 2$).

Result

There were no statistically significant differences between the groups at baseline even if Cobb angles, ATR and TRACE were slightly worst in SpineCor group. The N of patients prescribed with a rigid brace was 4 (14%) in the SEAS Group vs 3 (10%) in the

Spinecor, not significant (NS). The Median value of TRACE didn't change for SEAS while decreased for Spinecor (5 vs 4, $p < 0.05$). Considering the number of patients changed $> \pm 5^\circ$ Cobb in the SEAS Group there was 39.3% improved and 14.3% worsened vs 25% and 21.4% in SpineCor (NS). For ATR there were 50% Improved and 50% Stable for SEAS group vs 57% and 43% for Spinecor (NS).

Discussion

There were no differences in the number of rigid braces prescribed. The Spinecor showed to be able to improved the Aesthetics (TRACE) in AIS patients while exercise maintained a stability. The number of patients clinically changed showed a similar efficacy of both treatments. The main limit of the study are the retrospective design, the small population and the short term evaluation. We can argue that with a longer follow up the Spinecor can achieve better results in terms of avoiding rigid brace prescription and curve progression.

Conclusion

Short term results showed a better efficacy of the Spinecor for Aesthetics in AIS while the efficacy on avoiding curve progression was similar to the SEAS exercises.

Published: 10 September 2010

doi:10.1186/1748-7161-5-S1-O53

Cite this article as: Zaina et al: Spinecor vs exercises for adolescent idiopathic scoliosis: short term results. *Scoliosis* 2010 **5**(Suppl 1):O53.

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