Scoliosis

Oral presentation

Efficacy of conservative treatment of adolescent idiopathic scoliosis: end-growth results respecting SRS and SOSORT criteria

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Objectives
The objective of this study was to verify the efficacy of conservative bracing treatment of adolescent idiopathic scoliosis (AIS) according to the best methodological criteria defined in the literature.

Background
The SRS criteria give the methodological reference frame to present results of bracing. SOSORT criteria give the clinical reference frame for an appropriate bracing treatment. The combination of the two has never been presented in a study until now.

Methods
In this retrospective study, the population included all AIS patients meeting the SRS inclusion criteria (age 10 years or older, Risser test 0-2, Cobb degrees 25-40°, no prior treatment, less than 1 year post menarche) that reached the end of treatment since our database started in 2003. We had 44 females and 4 males, average age at the start of 12.8 years ± 1.6 years. According to individual needs, 2 patients were treated with Risser casts followed by Lyon brace, 40 with Lyon or SPoRT braces (14 for 23 hours per day, 23 for 21 hours per day, and 7 for 18 hours per day), and 2 with exercises only. Outcome criteria included the following: SRS (unchanged; worsened over 6°; over 45° at the end of treatment; surgically treated; 2 years follow-up); clinical (ATR, hump, Aesthetic Index, plumbline distances); radiographic (Cobb degrees); and ISICO (opti-mum; minimum). ANOVA and chi-test were used for statistical analysis.

Results
The reported compliance during the 4.2 ± 1.4 treatment years was 90.9% ± 17.6%. No patients progressed over 45°, no one was fused, and this remained true at the 2 years follow-up for the 50% that reached it. Worst and average curves progressed in 4%, while 8%, 11% and 6% progressed in thoracic, thoracolumbar, and lumbar curves respectively. We found highly statistically significant reductions of maximal (-7.0°), average (-5.6°), thoracic (-4.2°), and lumbar (-6.7°) curves. Statistically significant improvements were also found for Aesthetics and ATR, but plumbline distances diminished. Clinically, less than 10% of patients worsened for all parameters (exceptions: lumbar ATR and hump), while improvements were very common. According to ISICO criteria, 88% of patients had minimum and 65% optimal results.

Conclusion
Respecting SOSORT criteria, the results of conservative treatment was much better than what was previously reported in the literature using the SRS criteria.