

ORAL PRESENTATION

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Brace treatment is effective in idiopathic scoliosis over 45°: a prospective controlled study

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Background

Recently, positive results in bracing patients with idiopathic scoliosis (IS) above 45°, who refused surgery, have been presented in a retrospective study. Obviously, this can only give an efficacy analysis, since there is no control group, nor it is possible to know failures due to drop out.

Aim

To present the prospective results of bracing patients affected by IS above 45° and still growing.

Methods

Design is a prospective study including all IS patients with 45° or more, Risser 0-4, who had their first evaluation in our Institute from March 1st, 2003 to December 21st, 2010, and utterly deny any surgical intervention. Population: out of 59 patients, we excluded 2 still in treatment. 57 (11 males) were included, who at start of treatment had a mean of: 15.03±1.10 years of age, 52.5° Cobb (range 45-93°), and Risser 2 (0-4). Thirty-nine accepted a full-time brace treatment (BG) to try avoiding surgery, 18 served as controls (CG). Outcomes: radiographic and clinical data. Statistics: efficacy analysis in patients who completed treatment (38 in BG; 10 in CG; failures: surgery, progression 6° or more); intent-to-treat (failures also drop-outs). In CG, we had 8 patients not retrievable: they were considered as positive results (no progression or surgery) in the intent-to-treat analysis.

Results

Efficacy analysis: Failures were 23.5% in BG, and 100% in CG. Intent-to-treat: failures were 20.5% in BG and

55.6% in CG. The Relative Risks (RR) of failure in CG were 4.3 (95% Interval Confidence - IC95: 3.6-4.9) and 2.7 (IC95 2.0-3.5) respectively in the two analyses (P<0.05). Conversely, the RRs of improvement were 1.6 (IC95 1.46-1.9) and 1.9 (IC95 1.6-2.2) (P<0.05). Patients joining treatment achieved a 10.4±10.7° Cobb improvement, an ATR reduction of 4.2±4.3°, and an aesthetic improvement of 2.8±1.9 points (TRACE). At the end of treatment, 24 patients were below 45°, including 6 of below 35°.

Conclusions

Through this study, we conclude that conservative brace treatment (if correctly performed and managed) is a suitable alternative for those patients who reject any surgical intervention for idiopathic scoliosis above 45°. Indeed, this treatment largely provides excellent results, and in most cases stabilises the curve, with a subsequent improvement of the Cobb degrees and TRACE levels.

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