

ORAL PRESENTATION

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End growth results of exercise treatment to avoid bracing in adolescents with idiopathic scoliosis: a prospective cohort controlled study

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Background

Doubts on the efficacy of exercise treatment for adolescents with Idiopathic Scoliosis (IS) still exists.

Aim

To verify the effectiveness of exercises in everyday clinics.

Design

Prospective observational controlled cohort study nested in a prospective database started in March 2003.

Methods

Setting: outpatient tertiary referral clinics.

Participants: consecutive patients from start of the database to 31/12/2010. Inclusion criteria: IS; Risser 0-2; 11° to 20° Cobb; age 10 years or more; first evaluation. Exclusion criteria: consultations only; immediate prescription of a brace.

Groups: Physiotherapeutic Specific Scoliosis Exercises - SEAS school (PSSE: at least 45 min/week, 3 cognitive-behavioral sessions/year); Controls (CON: less than 15 min/week); Usual Physiotherapy (UP: other institutes/protocols).

End-Of-Treatment (EOT): medical prescription, bracing, Risser 3.

Failures: bracing for scoliosis; EOT above 30°.

Statistical analysis: intent-to-treat (ITT: drop-outs included as failures) and efficacy (EA: only EOT patients). Relative Risk of failure (RR), 95% Confidence

Interval (CI), and clinical and radiographic changes have been calculated.

Results

Out of 327 patients, 34 (10%) were excluded due to bracing at first evaluation. We included 293 adolescents: 145 PSSE, 95 UP, 53 CON, with no differences at baseline. Physicians prescribed bracing (failure) without differences among groups.

Failures and drop-outs were 84 (28.7%) and 47 (16.0%) respectively: 21.4% and 18.6% in PSSE; 33.7% and 9.5% in UP; 39.6% and 20.8% in CON.

Efficacy analysis (RR): CON vs PSSE 1.90 (IC 1.48-2.33); UP vs PSSE 1.42 (1.01-1.82); CON vs UP: not significant.

Intent-to-treat (RR): CON vs PSSE 1.51 (1.21-1.80); CON vs UP 1.40 (1.08-1.72); UP vs PSSE: not significant.

At the end of exercises, aesthetics (TRACE) improved statistically in PSSE (1.8 points out of 12) and UP (1.5), not in CON; only PSSE improvement was statistically better than CON.

Conclusion

Patients performing UP or nothing (CON), compared to those treated with PSSE (SEAS), increase the risk of failure (bracing and/or 30° at EOT) 1.9 and 1.4 times respectively (EA).

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