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BRACE ASSOCIATED TO SPECIFIC EXERCISES IS ABLE TO IMPROVE SPONDYLOLISTHESIS IN GROWING PATIENTS

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Background

The actual evidence concerning effective treatment for spondylolisthesis is really sparse and relevant data able to help clinicians for clinical decision making are lacking. This is why a common path among experts in spinal disorders has not been defined yet, and the best approach is still to be discovered. Even though it is a quite rare condition, with an incidence comprised between 4% and 6% in growing subjects, it can be also associated to other deformities of the growing spine like scoliosis and hyperkyphosis, thus affecting the clinical approach. Spondylolisthesis is frequently discovered occasionally; in other cases, its first symptom is back pain. It has been demonstrated a risk of progression during growth, this is why a conservative treatment is recommended by some authors. To better understand how to manage with these kind of diseases, observational studies are required.

OBJECTIVE

The main aim of the present study was to evaluate the short term effects of conservative treatment (brace and exercises) in a population of growing subjects affected by spondylolisthesis.

Methods

Participants

The selected population came from a prospective collection of clinical data, the included patients fulfilled the following inclusion criteria: spondylolisthesis as main diagnosis, at least one year of follow-up, with available clinical data of at least three visits; a minimum of two Lateral X-rays at start and after one year; age below 18 years.

Outcomes considered: the percentage of the olisthesis according to the Meyerding Classification, and the SRS-22 mean score for pain domains, were compared between start and after one year of treatment.

Statistical analysis: considering the normal distribution of data a paired double-tailed t-test was performed, with alpha set at 0.05.

Results

In the sample considered, 49 patients were treated with braces (23 females, 26 males) and 10 (6 females, 4 males) treated with specific exercises only. The mean age was 12.3 (SD=2.9). Among brace treated subjects the 49% improved after one year of therapy, 47% were stable and only the 4% worsened more than 5%. The mean percentage of the spondylolisthesis at short term follow-up was 14.3 and resulted significantly improved from start (Mean at start 19.3 SE 0.99 SD 6.92, CI 95% 17.3-21.3; Mean percentage at short term 14.6 SE 0.88 SD 6.19 CI 95% 12.8-16.3; $p < 0.0000$). Among not brace patients the differences between start and after one year of treatment did not result statistically significant ($p = 0.41$). For what concern the pain domain average scores at the SRS -22 any statistically significant difference was found ($p = 0.62$).

Conclusion

This study shows that the combination of activity restriction, specific exercise and bracing have a high rate of improvement or stabilization of the spondylolisthesis at one year of follow-up, in growing subjects. Additional studies are needed to support these results and to clarify the controversy regarding the most effective therapy for these patients.