Scoliosis

ORAL PRESENTATION

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End-growth results in juvenile idiopathic scoliosis treated with conservative approach

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Background

According to SRS (Scoliosis research Society) Juvenile idiopathic scoliosis (JIS) is defined as a scoliosis that is first diagnosed between the age of 4 and 10 years. The natural history is characterized by an early deformity that leads to a major but extremely variable progression risk throughout growth. Objectives of the study is verifying the efficacy of a complete conservative treatment of juvenile idiopathic scoliosis.

Materials and methods

Observational retrospective study. Population: we included all JIS patients for which we have consecutive radiographies from Risser test 0 and to 3 since our database start in 2003. We had 30 patients, 27 females and 3 males; mean age at start 7.8 ±1.5, mean treatment lasting 5, 8 years. For 23 of 30 patient studied we have also radiography at Risser 5 and we evaluated radiographic evolution from Risser 3 to Risser 5. Finally we split patient in 3 groups according to curve degrees at first diagnosis: 9 patients presented a curve under 20 Cobb, 11 patients between 20 and 30° Cobb and 7 over 30° Cobb. Methods: according to individual needs patient were treated with physical exercises alone or with brace and physical exercises. Outcome criteria: radiographic (Cobb degrees) and clinical (ATR, hump, TRACE,).

Results

Mean thoracic Cobb degrees values changed with treatment from 24.4 ± 10.0 to 25.8 ± 11.2, thoracolumbar from 1.7±7.4 to 1.0±4.1 and lumbar from 17.9±10.4 to 18±11.7. We have not statistically significant differences in the Cobb degrees and also in the evaluation of the hump. 6.6% of patients started with a curve over 45 Cobb degrees and improved during the treatment.

While 33.3% worsened at end of treatment more than 5 Cobb degrees. In the subset of patients under 20° Cobb and between 20 to 30° Cobb we observed a consistent but not significant change while in the group of patient that started treatment over 30° we observed a non significant improvement. In 23 cases that reached end of growth (for which we have radiography at Risser 5) we observed a maintenance of results reached at Risser 3.7 of 23 (30.4%) patient arrived at end of treatment with a curve over 35° and 2 of 23.

Discussion

JIS may have a variable behaviour but generally it shows a progressive worsening during the year. Treatment can face this natural worsening trend. We observed a good corrective power of brace in the first years of treatment until Risser test 1 with a decrease of correction in the following years and a maintenance of achieved correction.

Conclusion

Conservative treatment start in childhood may favourable changes natural history of scoliosis. Prospective studies are needed to better investigate this particular kind of scoliosis.

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