

Can the tilt-differences of limiting vertebrae be a prognostic factor for the worsening of the scoliosis curves treated with specific exercises? A pilot study using a series of matched patients.

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Background

A hypothetical factor for the increase of Cobb° could be the percentage difference of the limiting vertebrae tilts.

A big difference of this value ideally suggests a potentially more unstable situation comparing two curves with the same Cobb° but with a substantial difference of the limiting vertebrae tilts.

Objective

The objective of the study is to check this hypothesis.

Methods

From a sample of 2179 subjects undergoing treatment for scoliosis, nine matched pairs of patients were selected with the following specific characteristics:

- Same gender
- Same Risser
- Maximum one year of age-difference at Risser 0
- One single thoracic or thoracolumbar curve
- Cobb at baseline less than 20 °
- Two subsequent radiographs of approximately one year
- At least, one year of physiotherapeutic treatment with, at least, three sessions between two x-rays
- No brace prescription.

Patients were paired according to the following criteria:

- Scoliosis with a relative tilt of the limiting vertebrae less than 10% of total Cobb ° compared to scoliosis with a tilt of the two limiting vertebrae more than 30% total Cobb °.
- The modification of Cobb° was compared by calculating the averages of the improvements and worsening. Linear regression of the data was performed.

Results

The data analysis show that the mean increase or decrease of the Cobb° is similarly distributed in both groups.

Conclusion

The relative difference of the two limiting vertebrae tilts is not a reliable prognostic factor. The prescription of braces, in case of a worsening of the curve, was the same in both groups.