

Oral presentation

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## Sforzesco brace (SPoRT Concept) versus Risser cast in adolescent idiopathic scoliosis treatment: similar efficacy, with reduced spinal side effects for the brace

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### Objective

To compare the results of the recently introduced Sforzesco brace with the classical Risser cast in the treatment of adolescent idiopathic scoliosis (AIS).

### Study design

From our prospective database we included all patients with AIS, followed-up for eighteen months during Risser cast (twelve months plus six month in Lyon brace full time) or Sforzesco brace treatments. Risser cast treatment [1] was our standard treatment for worst curves until January 2004. The Sforzesco brace method is our current approach. We had eighteen patients in cast (83% female,  $14.3 \pm 1.11$  years of age, Cobb angle  $39.5 \pm 7.5$  degrees) and thirty-three patients in brace (79% females,  $14.1 \pm 1.10$  years of age, Cobb angle  $40.9 \pm 12.1$ ). Analysis included measurement of Cobb angle, Bunnell angle of trunk rotation (ATR) [2], rib hump magnitude, aesthetic index, and sagittal distances from the plumbline.

### Results

No significant differences were present between the two groups, at the start. After treatment, mean values for clinical parameters between the two groups were statistically distinct. An exception was thoracic Cobb angle (+1 degree) for cast treated patients, and thoraco-lumbar Cobb angle (-5.4 degrees,  $p = NS$ ) for brace treated

patients. Comparing the groups, Cobb reduction was higher for brace (-5 degrees vs -3.5 degrees) but the difference was statistically significant only for thoracic curves. The cast achieved better results on ATR and rib hump, but resulted in a significant sagittal curve reduction (-11 mm at C7  $p < 0.001$ , versus -3 mm  $p = NS$ ).

### Conclusion

Clinical results with the Sforzesco brace are similar to results with the Risser cast. Considering the reduced costs, both personal (Quality of Life) and social (outpatient only for the brace, versus four weeks' inpatient treatment for the Risser cast), brace treatment should be preferred.

### References

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2. Bunnell WP: **An objective criterion for scoliosis screening**. *J Bone Joint Surg* 1984, **66A**:1381-1387.