

Oral presentation

Open Access

Identification of a high-risk young population for progressive idiopathic scoliosis

Konstantinos Soultanis*, Nikolaos Pyrovolou, Panayotis Kontovazenitis, Anna Lenti, Panayotis Pantos, Konstantinos Starantzis and Panayotis Soucacos

Address: 1st Department of Orthopaedics of the Medical School of Athens University, Athens, Greece

* Corresponding author

from 5th International Conference on Conservative Management of Spinal Deformities Athens, Greece. 3–5 April 2008

Published: 15 January 2009

Scoliosis 2009, **4**(Suppl 1):O6 doi:10.1186/1748-7161-4-S1-O6

This abstract is available from: <http://www.scoliosisjournal.com/content/4/S1/O6>

© 2009 Soultanis et al; licensee BioMed Central Ltd.

Background

Early identification of high-risk young patients with idiopathic scoliosis is mandatory in order to apply efficient treatment.

Purpose

The goal of this study is to identify which curves will progress by creating a correlation between the pattern of the curve according to curve direction and the sex of the child.

Patient population and methods

In a 5-year prospective study on idiopathic scoliosis a total of 85,627 children aged 9–15 years were screened for scoliosis and children with curves of at least 10 degrees underwent clinical and radiographic follow-up. The prevalence of scoliosis was 1.7%, with most cases appearing at 13–14 years ages with small scoliotic curves (10 degrees–19 degrees) being most prevalent (prevalence 1.5%). Progression of the curve occurred in 14.7% of 839 children.

Results

A high risk of curve progression was associated with the following: sex (girls); curve pattern (right thoracic and double curves in girls, and right lumbar curves in boys); maturity (girls before the onset of menses); age (time of pubertal growth spurt); and curve magnitude (> or = 30 degrees). On the other hand, left thoracic curves showed a weak tendency for progression.

Conclusion

A small percentage of scoliotic curves undergo progression. The pattern of the curve according to curve direction and the gender of the patient combined with the maturity of the patient to play a significant role in the ability to identify which curves will progress.

References

1. Grivas TB, Vasiliadis ES, O'Brien JP: **How to improve the effectiveness of school screening for idiopathic scoliosis.** *Stud Health Technol Inform* 2008, **135**:115-21.
2. Soucacos PN, Soucacos PK, Zacharis KC, Beris AE, Xenakis TA: **School-screening for scoliosis. A prospective epidemiological study in northwestern and central Greece.** *J Bone Joint Surg Am* 1997, **79**:1498-1503.
3. Soucacos PN, Zacharis K, Soultanis K, Gelalis J, Xenakis T, Beris AE: **Risk factors for idiopathic scoliosis: review of a 6-year prospective study.** *Orthopedics* 2000, **23**:833-8.