Respiratory function in adolescents with idiopathic disorders of the spinal column.

A. Papadopoulou¹, K. Mikelatou¹, A. Boutis², E. Tsafantakis², D. Z. Mermiri³

¹Pediatric Asthma and Allergy Unit, KAT General Hospital - Athens (Greece), ²Scoliosis and Spinal Column Department, KAT General Hospital - Athens (Greece), ³Allergology and Pulmonology Unit, Penteli Children Hospital - Athens (Greece)

Introduction and Background. Idiopathic spinal disorders occur mainly in adolescence, and little is known about their effect on lung development.

Aims and Objectives. The aim of this study was to evaluate the lung function in these cases in comparison with the volumes of normal age-sex matched children.

Method. 87 children with idiopathic scoliosis (72 girls, 84%, mean age 13y ± 1.6y) and 27 children with idiopathic kyphosis (11 girls, 40.7%, mean age 13.4y ± 1.6y) were reviewed. Thoracic cage enlargement, oxygen saturation and respiratory volumes were recorded prior to any therapeutic intervention and compared to normal children.

Results. Seventeen (19.3%) cases had thoracic, 47 (27.6%) cases thoracic and lumbar and 24 (54%) cases lumbar scoliosis. Forty children (46%) suffered from mild, 39 (44.8%) moderate and 8 (9.2%) severe scoliosis. Fourteen (51.8%) children had moderate and 13 (48.2%) severe kyphosis. A significant difference of FVC and FEV1 was found among children with thoracic scoliosis and kyphosis as well as among children with mild / moderate and severe scoliosis. In addition, there was a significant difference between lung volumes in the general population compared to the children with scoliosis, which was not found in children with kyphosis.

Conclusions. Thoracic scoliosis appears to significantly affect children’s respiratory function according to the severity, such an effect is not encountered in children with kyphosis.