

ABSTRACT

Introduction: Adolescent idiopathic scoliosis (AIS) is a common and potentially serious musculoskeletal disorder that affects 2-3% of the pediatric population. It is classically defined as a curve $> 10^\circ$ in the coronal plane associated with vertebral rotation in the axial plane. However, it is known that it is usually associated with loss of thoracic kyphosis [1,10,11]. The main objective of the treatment is stabilization of the deformity and restoration of the coronal and sagittal balance of the trunk.

Materials & Methods: the aims is analyze the spino-pelvic parameters and the global sagittal balance of patients with Adolescent Idiopathic Scoliosis (AIS) in the pre and postoperative period divided into 3 groups, observing if there are differences in these two moments and whether spinopelvic parameters and global sagittal balance are maintained or re-established within each group. Radiographs of 99 patients from a database at a single center were evaluated, who underwent arthrodesis with posterior instrumentation. Pelvic incidence, pelvic tilt, sacral tilt, lumbar lordosis, thoracic and sagittal vertical axis values were measured on the pre- and postoperative radiography of each patient.

Results: the parameters of pelvic incidence, pelvic tilt, sacral tilt and sagittal vertical axis did not show statistically significant differences. However, lumbar lordosis showed a difference between the 3 groups preoperatively ($p = 0.049$). Thoracic kyphosis showed differences both in the pre ($p = 0.015$) and in the postoperative ($p = 0.042$), in addition to demonstrating a dependence relationship between the values of the pre and post in the final statistical analysis.

Conclusion: the pre and postoperative evaluation of the analyzed parameters shows that the studied groups have similar values of individual balance, with the exception of thoracic kyphosis and lumbar lordosis, which are measures that depend on the surgical technique and compensatory mechanisms, but remaining within normal ranges. Level of evidence: IIIA; comparative retrospective study.

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