

**LONG TERM CLINICAL AND RADIOLOGICAL OUTCOMES OF SELECTIVE THORACIC FUSION (STF) WITH ALL PEDICLE SCREW CONSTRUCT IN ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS) PATIENTS WITH LENKE 1B, 1C, 2B AND 2C: A MINIMUM FOLLOW-UP OF 5 YEARS**

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**Background:**

Favourable perioperative outcome has been reported with selective thoracic fusion. However, post-operative coronal decompensation and adding-on phenomena had been noticed despite strict selection criteria.

**Objective**

To evaluate the long term clinical and radiological outcomes of AIS patients with Lenke 1B, 1C, 2B and 2C treated with STF with all pedicle screw construct.

**Materials and methods:**

This was a retrospective single-centre study that included AIS patient with Lenke 1B, 1C, 2B and 2C who underwent single-stage posterior spinal fusion with all pedicle screw construct with minimal five-year follow-up. Radiological parameters, Scoliosis Research Society (SRS) 22-r score and unsatisfactory results were analysed.

**Results:**

Thirty-eight patients were included with mean follow up of 5.4 (5.0 -7.6) years. The lowest instrumented level was L2. The average pre-operative main thoracic curve was  $65.1 \pm 12^\circ$  and thoracolumbar/lumbar curve was  $44.1 \pm 60^\circ$ . The average main thoracic correction was  $61.9 \pm 10.2\%$  at final follow-up. Spontaneous correction at instrumented lumbar curve was observed with immediate correction rate of  $52.2 \pm 16.8\%$ , followed by further improvement to  $59.6 \pm 15.20\%$  at final follow up ( $p < 0.05$ ). Patients reported significant improvement in overall SRS-22 score, function and image domain ( $p < 0.05$ ). The incidence of adding on phenomenon and coronal decompensation were 7.9% and 5.3%, respectively. No case of junctional kyphosis, lumbar decompensation, or revision were encountered.

**Conclusion:**

This study demonstrates excellent long-term radiological and clinical outcomes in AIS patients treated with all pedicle screw construct STF. The observed spontaneous lumbar curve correction and low complication rate highlight the efficacy of this approach.