BLOOD LOSS AND BLOOD TRANSFUSION PRACTICES FOLLOWING POSTERIOR SPINAL FUSION (PSF) FOR ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS) WITH THE USE OF CELL SALVAGE SYSTEM: A SINGLE CENTER REVIEW OF 274 CASES.

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Background:
Major blood loss is one of the common complications following PSF in AIS. The incidence of allogeneic blood transfusion in AIS in the United States has been reported to be between 13.6% to 23.0%.

Objectives:
To analyze the pattern of blood loss and blood transfusion practices with this surgical strategy.

Materials and Methods:
This was a retrospective review of prospectively collected data 274 AIS patients who underwent PSF fusion from 2015 to 2016. Surgery was carried out with the aid of a cell salvage system. Outcome measures were total intra-operative blood loss, volume of cell salvage, incidence of allogeneic blood transfusion and post-operative hemoglobin drift.

Results:
The total intra-operative blood loss was 1001.5mL ± 550.9, corresponding to 31.3% of body blood volume loss. Three (1.1%) patients sustained massive blood loss. The volume of autologous blood salvaged from the cell saver system was 495.1mL ± 294.8 (48.9% ± 8.2 of total blood loss). Seventeen (6.2%) patients required allogeneic blood transfusion. The average amount of allogeneic blood transfusion was 1.4 pints. The pre-operative hemoglobin for this cohort of patients was 13.7g/dL ± 1.2 and post-operatively, dropped to 10.9g/dL ± 1.5.

Conclusion:
The incidence of allogeneic blood transfusion in AIS patients who underwent PSF using pedicle screw construct aided by a cell salvage system was 6.2%. The incidence of massive blood loss was 1.1% and the average total intra-operative blood loss was 1001.5mL.