Introduction: Paediatric scoliosis correction involves challenging, complex surgery and is associated with significant blood loss and postoperative pain. Historically in our institution, blood conservation and analgesic regimes for this type of surgery were used at the discretion of individual anaesthetists. After appraising published evidence and reviewing the practice of other centres performing this type of surgery in the UK and worldwide,1 our department agreed upon a standardised perioperative package of care.

The main changes involved the introduction of intrathecal diamorphine2 10 μg/kg and intravenous clonidine3 1-2 μg/kg intraoperatively in an attempt to improve postoperative pain. A multimodal blood conservation strategy was introduced including routine intraoperative tranexamic acid (100 mg/kg over 30 minutes, followed by 10 mg/kg/hour), intraoperative cell salvage and the use of post-operative cell salvage drains.4

The aim of this study was to determine if the standardised package of care had affected blood loss, transfusion requirements and post-operative pain control.

Methods: Following approval from our audit department, we performed a retrospective case note review of paediatric patients undergoing posterior scoliosis correction.

Results: We reviewed the records of 37 patients before and 13 patients after introduction of the care package. Data were tested for normality using the Shapiro-Wilk test; normally distributed data were analysed with Student’s t-test, non-normal data with the Mann-Whitney U test. Categorical data were tested using the chi-squared test. Age, weight, scoliosis aetiology and number of vertebrae involved were similar between the groups. No adverse events occurred as a result of the new care package.

Median estimated intraoperative blood loss was 42% lower with the new strategy (20.7 ml/kg [interquartile range 15.3-26.5] vs. 35.7 ml/kg [17.6-56.0], p=0.04). The proportion of patients requiring allogenic blood transfusion fell from 69% to 31% (p=0.02).

Patients receiving the new analgesic regime had improved pain control on the first postoperative day, with decreased maximum (mean 4.1 (out of 10) ± 2.2 standard deviation vs. 5.7 ± 1.8, p=0.02) and median (1 [interquartile range 0-2] vs. 2 [1.5-4], p=0.01) pain scores.

Conclusions: Following the introduction of a standardised evidence based care package, we have demonstrated improvements in perioperative blood loss, allogenic transfusion requirements and early postoperative pain control in paediatric patients undergoing scoliosis correction.