Background:
Although several studies have demonstrated opioid-sparing effects of gabapentin in the early postoperative period in adults, very few studies have been done in children and adolescents (1,2). The purpose of our study was to assess the efficacy of gabapentin use in the perioperative period in children with idiopathic scoliosis undergoing spinal fusion.

Methods:
Retrospective study was performed in 94 children with idiopathic scoliosis who underwent spinal fusion between May 2010 and September 2011. Ninety four children were assigned to one of three following postoperative pain management groups: Group-1 (Morphine PCA)-39, Group-2 (Morphine PCA and ketorolac)-19, and Group-3 (Morphine PCA, ketorolac, and gabapentin)-36. Ketaolac administration was initiated on postop day one for three doses and gabapentin use was initiated in the preop period and was continued in the postoperative period till they were discharged from the hospital. Postoperatively, opioid use, opioid related side effects and pain scores were recorded in all three groups. In addition, physical therapy goals and length of stay were assessed.

Results:
The data was analyzed using ANOVA for quantitative data and posthoc analysis by Tukeys test. Significance was assumed at P<0.05. The groups did not differ in demographics, operative blood loss, surgical time, or in the radiographic measurements of coronal and sagittal plane curve corrections. Morphine consumption (mg/kg) on the first postoperative day was the highest in group-1 and lowest in group-3 (0.98 ± 0.31 Group 1, 0.75 ± 0.33 Group 2 and 0.59 ± 0.26 Group 3; p<0.05). Also, a greater percentage of patients receiving gabapentin could be converted to oral pain medications on the first postoperative day (0% Group 1 vs. 25% Group 3; p<0.05). There was no significant difference in opioid-related side effects, visual analog pain scores or length of stay. There was a trend showing that a greater number of patients who received gabapentin were able to ambulate with a physical therapist on the first postoperative day, but this was not statistically significant (26% Group 1, 22% Group 2, 52% Group 3; p=0.058).

Conclusion:
Postoperative gabapentin reduced morphine consumption and facilitated transition to oral pain medication on the first postoperative day after spinal fusion surgery for idiopathic scoliosis in children. In addition, there was a tendency towards early ambulation. We could not demonstrate any statistical difference between the groups in pain scores, opioid-related side effects, or length of stay from the collected data.

Citations:
Table 1: Demographic Data

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>M:F</th>
<th>Weight (kg)</th>
<th>Age</th>
<th>Surgical time (hours)</th>
<th>Blood Loss (ml)</th>
<th>Cobb Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>39</td>
<td>8:31</td>
<td>56 +/- 9</td>
<td>15.5</td>
<td>06:08 +/- 2:21</td>
<td>1435 +/- 962</td>
<td>69.5 +/- 16.6</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>1:18</td>
<td>55 +/- 14</td>
<td>15.2</td>
<td>04:56 +/- 1:39</td>
<td>1490 +/- 1,006</td>
<td>70.1 +/- 15.1</td>
</tr>
<tr>
<td>3</td>
<td>38</td>
<td>7:29</td>
<td>57 +/- 12</td>
<td>15.4</td>
<td>05:13 +/- 1:44</td>
<td>1388 +/- 754</td>
<td>70.0 +/- 10.0</td>
</tr>
</tbody>
</table>