Perioperative Use of Gabapentinoids in Children for Spinal Fusion Surgery
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BACKGROUND

• The use of gabapentinoids has been studied to define their role in mitigating both acute and chronic postoperative pain from a wide variety of procedures. Patients given these drugs have shown to have improved pain scores, decreased opioid requirements and decreased side effects from opioid use.

• This study aims to evaluate the perioperative use of gabapentinoids (pregabalin and gabapentin) in children with idiopathic scoliosis undergoing posterior spinal fusion (PSF).

METHODS

Following IRB approval, data from 132 patients undergoing PSF for idiopathic scoliosis were collected retrospectively. Patients were divided into three groups:

- Group N: No gabapentinoid: 42 patients
- Group G: Gabapentin only: 45 patients
- Group P: pregabalin only: 45 patients

For Group G patients, one dose of gabapentin (12.5 mg/kg up to 1000 mg) was given one hour before surgery, and continued postoperatively (100 mg – 200 mg TID) until discharge.

For Group P patients, one dose of pregabalin (100–300mg) was given one hour before surgery, and continued postoperatively (50–75 mg BID) until discharge.

The parameters observed were: the amount of propofol used intraoperatively, incidence of EEG burst suppression, time to emergence, morphine use on intraoperatively, and postoperative pain scores (VAS), pruritis, nausea/vomiting, and length of stay. Incidence of EEG burst suppression was not different among groups.

RESULTS

Time to ambulation following surgery was shorter in Group P. There was no difference in morphine use between Groups G and P.

Time to emergence were similar between Groups N and G, but Group P had significantly shorter wakeup times than Group G.

The difference in morphine use between groups was observed only on postoperative day 1. Group G and P had decreased morphine use when compared with Group N. There was no difference in morphine use between Groups G and P.

Data were analyzed using ANOVA for quantitative data, posthoc analysis by Tukeys test, and chi-squared analysis used for non-parametric data. Significance was assumed at P<0.05 (IBM, SPSS, NY).

All groups were similar in demographics. Average intraoperative propofol use was lower in Group P when compared with Groups N or G (Table).

There were no differences in pain scores, pruritis, nausea/vomiting and length of stay. Incidence of EEG burst suppression was not different among groups.

The use of gabapentinoids and preemptively reduced propofol infusion rates. The difference is because Group P was the later of the two groups studied. The anesthesia practitioners, by then, had become familiar with the significant sedative effect of gabapentinoids and preemptively reduced propofol infusion rates.

P vs. N: 0.007*
G vs. N: 0.000*
G vs. P: NS**
N vs. G: 0.03
G vs. P: NS**
N vs. P: 0.001*

There was no difference between the groups in pain scores, opioid-related side effects, or LOS.

REFERENCES


CONCLUSION

Perioperative gabapentin use reduced morphine consumption, facilitated transition to oral pain meds on the first postop day and led to significantly earlier ambulation.

However, average propofol use and time to emergence following surgery was shorter in Group P. We feel this difference is because Group P was the later of the two groups studied. The anesthesia practitioners, by then, had become familiar with the significant sedative effect of gabapentinoids and preemptively reduced propofol infusion rates.

There was no difference between the groups in pain scores, opioid-related side effects, or LOS.