


Summary

Pediatric patients present unique anatomic, physiologic and pharmacological consideration. So they deserve special care with respect to these differences from adults.

Occurrence of emergence agitation in children after sevoflurane anesthesia is common, with an incidence ranging between 10% and 80%.

EA is characterized by a variety of presentations including crying, excitation, agitation, and delirium occurring during the early stage of emergence from anaesthesia in children. It can also lead to lost intravenous catheters, and disconnected cables and monitoring instruments

ED was defined as “a disturbance in a child’s awareness of and attention to his/her environment with disorientation and perceptual alterations including hypersensitivity to stimuli and hyperactive motor behavior in the immediate postanesthesia period” . The term “delirium” is often replaced with the descriptive terms “agitation” or “excitation” as it is not feasible to fully evaluate a young child’s psychological state during emergence.

ED usually occurs within the first 30 min of recovery from anesthesia, is self-limited (5–15 min), and often resolves spontaneously. However agitation and regressive behavior that lasted up to 2 days.

Several factors have been implicated in the etiology of emergence agitation and their effect has been extensively studied in the literature through randomized clinical trials.eg. Age (2-6 years have higher rate of

EA), Preoperative anxiety , Parental presence during recovery, Surgical procedure, Pain, Inhalation and intravenous anesthetics.

In recent studies, there is a higher incidence of postanesthetic agitation has been attributed to the use of sevoflurane. However, the exact etiology of restlessness after sevoflurane anesthesia is still not known. Postoperative agitation may be caused by hypoxemia, metabolic disturbances, pain and the effect of drugs.

Fentanyl is a potent opioid, which can decrease EA following sevoflurane and desflurane anesthesia by its high efficacy on preoperative analgesia as well as its sedative effect

The incidence and duration of emergence agitation in patients receiving sevoflurane without surgery was significantly decreased by the addition of 1µg/kg fentanyl 10 minutes before the end of anesthesia. The addition of a small dose of fentanyl to an anesthetic using sevoflurane should be considered, even when expected postoperative pain is minimal, to decrease emergence agitation.

Propofol has become the induction drug of choice for many forms of anesthesia, especially when rapid and complete awakening is considered essential.

Propofol delays or modifies emergence and decreases emergence agitation depending on the time of administration. Being a short acting medication, propofol given at induction could not prevent emergence agitation. Several studies have shown a decrease in EA following propofol administration (1 mg/kg) at the end of surgery, as plasma concentration of propofol can be effective.

In this study we investigated the incidence of EA in three groups underwent sevoflurane anesthesia : saline (with induction), propofol (at end of surgery) & fentanyl (with induction) groups , and compared the efficacy of propofol versus fentanyl to decrease the incidence of EA using the same age group, surgical procedure and emergence behavior scales (PAED & 4 point scale).

As regarding the demographic data there was no significant difference , also the duration of surgery , the duration of anesthesia and the duration of sevoflurane administration were not statistically different between the three groups .

the time to remove the LMA was longer in the propofol group compared with the other groups.

propofol delays the emergence time more than fentanyl more than control group.

Both propofol and fentanyl delay the onset of agitation.

Regarding the duration of EA there was no statistically significant difference between the three groups.

the incidence of EA in the control group was 46.9 % ,in the propofol group was 18.8% and the fentanyl group was 12.5 % .

The parent satisfaction was statistically comparable , it was the best with the fentanyl group and less with propofol , while the worst with control group , with a percentage of 43.8% excellent for control group , 75% excellent for propofol group & 81.2 % excellent for fentanyl group.

In conclusion

There was a difference when using propofol or fentanyl as both decrease the incidence and the severity of EA , but there is no reliable significance when comparing both drugs.

We recommend further studies to evaluate other drugs that have the potency to decrease the incidence and to treat the EA.
