ABSTRACT

“The Effect of Dexmedetomidine on Hemodynamics, Postoperative Sedation and Analgesia in Pediatric Patients Undergoing Adenotonsillectomy”

Background and Objective:

The immediate postoperative period after tonsillectomy and adenoidectomy, one of the most common pediatric surgical procedures, is often difficult. These children frequently have severe pain but postoperative airway edema along with increased sensitivity to the respiratory-depressant effects of opioids may result in obstructive symptoms and hypoxemia. Opioid consumption may be reduced by nonsteroidal antiinflammatory drugs, but these drugs may be associated with increased bleeding after this surgery. Dexmedetomidine has mild analgesic properties, causes sedation without respiratory depression, and does not have an effect on coagulation.

Methods:

We designed a prospective, double-blind, randomized controlled study to determine the effects of intraoperative dexmedetomidine on postoperative recovery including pain, sedation, and hemodynamics in pediatric patients undergoing tonsillectomy and adenoidectomy. 62 patients of age group 4 – 8 yrs were randomized into 2 groups namely the Fentanyl group and the Dexmedetomidine group in patients undergoing adenotonsillectomy under general anaesthesia. The outcomes measured are
Heart rate, Systolic Blood Pressure, Diastolic Blood Pressure, need for postoperative analgesia and sedation (using RSS and CHEOPS), Emergence Agitation, Nausea and vomiting.

**Results:**

The Dexmedetomidine group showed statistically significant values in Heart rate, Systolic Blood pressure and Diastolic Blood pressure (p value<0.01) compared to the Fentanyl Group. The total amount of Postoperative rescue doses needed was very high in the fentanyl group as evidenced by the CHEOPS score, than in the dexmedetomidine group (p value <0.001). The Ramsay sedation score was significant during initial periods of observation (p value <0.001). Emergence agitation, nausea and vomiting was not observed in dexmedetomidine group but there was no statistical significance

**Conclusion:**

The study “The effect of Dexmedetomidine on hemodynamics, postoperative analgesia and sedation in Pediatric patients undergoing adenotonsillectomy” thus concludes that the addition of dexmedetomidine in pediatric adenotonsillectomy patients has resulted in better intraoperative hemodynamics with no reports of bradycardia or hypotension. The need for postoperative “rescue opioid” was also significantly reduced by the use of this drug.

**Key words:** Adenotonsillectomy, Fentanyl, Dexmedetomidine, Postoperative sedation and analgesia