ABSTRACT

INTRODUCTION

A cochlear implant is an electronic medical device that replaces the function of the damaged inner ear. Unlike hearing aids, which make sounds louder, cochlear implants bypass the damaged hair cells of the inner ear (cochlea) to provide sound signals to the brain. Dexmedetomidine is α2 adrenoceptor agonist that provides adequate sedation with high cardiovascular stability. We aimed to compare it with fentanyl as an anesthetic adjuvant.

METHODS

40 pediatric patients (ASA I or II), undergoing cochlear implantation were randomized into dexmedetomidine (D) group and fentanyl (F) group (n = 20 for each). Anesthesia was induced by I.V. dexmedetomidine in (D) group at a bolus dose of 0.4 μg/kg slowly infused over 10 min, then continuous infusion by a rate of 0.4 μg/kg/h until the end of surgery. In (F) group; anesthesia was induced by I.V. fentanyl at a dose of 1 μg/kg over 10 min, then continuous infusion by a rate of 1 μg/kg/h. This is followed by I.V. propofol and atracurium for both groups. Both groups were compared as regards the post operative recovery time, post operative pain, intra operative hemodynamics, quality
of the surgical field, and the need for rescue analgesics and anti-emetics in postanesthesia care unit (PACU).

RESULTS

Dexmedetomidine have significantly and consistently quicker post operative recovery time. Dexmedetomidine have lower post operative pain when compared to Fentanyl. Dexmedetomidine have lower intra operative hemodynamics when compared to Fentanyl though statistically insignificant. Dexmedetomidine have better quality of the surgical field when compared with Fentanyl. Dexmedetomidine group has reduced need for post operative pain management.

CONCLUSION

Dexmedetomidine infusion in Cochlear Implantation in paediatric patients seems to be a good alternative to Fentanyl infusion since it produces quicker post operative recovery time and reducing post operative pain with better quality of the surgical field and reduced need for rescue analgesia. Dexmedetomidine was well tolerated with no clinically significant effects on blood pressure or heart rate.