



A COMPARATIVE STUDY BETWEEN DEXMEDETOMIDINE INFUSION VS PROPOFOL INFUSION FOR MAINTENANCE IN PATIENTS UNDERGOING FUNCTIONAL ENDOSCOPIC SINUS SURGERY UNDER GENERAL ANAESTHESIA

Anaesthesiology

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KEYWORDS

INTRODUCTION

Controlled hypotension or induced hypotension is a technique in which the arterial blood pressure is decreased in a predictable and deliberate manner to facilitate surgery and to reduce bleeding and transfusion requirement. The main aims of controlled hypotension are to minimize intraoperative blood loss and improve the quality of surgical field visualization. Advantages of Hypotensive Anaesthesia 1. A significantly lower amount of intraoperative bleeding, and thus an improved quality of the surgical field. 2. Decreased need for blood transfusions, thereby reducing the transfusion reactions. 3. Decreased or shortened duration of surgery, the virtue of improved visibility of the surgical field.

Dexmedetomidine, a centrally acting α -2 agonist, has been used in achieving controlled hypotension. Dexmedetomidine has sedative, analgesic, and anaesthetic sparing beneficial effects. Propofol, an induction agent, is used in general anaesthesia. It reduces cardiac output by limiting the venous return is used as an agent for controlled hypotension.

This study is designed to compare the efficacy and safety of Dexmedetomidine and propofol as hypotensive agents in Functional Endoscopic Sinus Surgeries. The quality of the surgical field and intraoperative hemodynamics are compared.

AIM AND OBJECTIVES

The Aim and Objective of the study are: To compare

1. Hemodynamic variables; .Systolic blood pressure . Diastolic blood pressure . Mean arterial pressure . Heart rate.
2. Operative field visibility.[quality of surgical field] Between Dexmedetomidine and Propofol.

MATERIALS AND METHOD

The prospective randomized study titled ' A Comparative study between Dexmedetomidine infusion vs Propofol infusion for maintenance in patients undergoing Functional Endoscopic Sinus Surgery under General Anaesthesia'.was carried out in an adult patients of age groups 18 -60 years posted for FESS at government general hospital, Vijayawada.

The study population consists of 60 ASA grade 1 and 2 patients, and are divided into 2 groups of each 30. Group D, patients received a loading dose of 1 μ g/kg Dexmedetomidine diluted in 10 ml 0.9% saline infused over 10 min, before induction of anaesthesia, followed by Continuous infusion of 0.5 μ g/kg/h. In Group P, patients received propofol as a loading dose of 1 mg/kg, infused over 1 min, followed by continuous infusion of 50 mcg/kg/min.

RESULTS

The Intraoperative pulse rate were comparable between two groups, the pulse rates were higher in the propofol group than dexmedetomidine throughout the surgery. The intraoperative systolic blood pressure remained comparable between the two groups throughout the surgery. At stoppage of the study drug, the SBP was significantly higher in the propofol group compared to Dexmedetomidine Group [94.93 $\pm$ 5.81 vs 106.83 $\pm$ 8.75; p-value 0.001]. The intraoperative diastole blood pressure remained comparable

throughout the intraoperative period, even after stoppage of the study drug. The Mean arterial pressures remained comparable between the two groups till the Stoppage of the study drug. After stoppage [70.53 $\pm$ 3.00 vs 77.07 $\pm$ 5.53; p-value 0.001], the mean arterial pressures were significantly higher in the propofol group compared to that of the Dexmedetomidine group. The average category scale to assess the quality of the surgical field was measured at 10min 20min and 30min with p-value 0.001, 0.01, 0.029 respectively. The overall surgical field visibility was better in the Dexmedetomidine group than the propofol group.

DISCUSSION

In the present study, we observed that both Dexmedetomidine and Propofol decreased the heart rate from baseline value with heart rate being lower in Dexmedetomidine group. This difference in heart rate could be attributed to the fact that dexmedetomidine causes postsynaptic activation of alpha 2 receptors in the central nervous system inhibits sympathetic activity and thus can decrease blood pressure and heart rate. Dexmedetomidine has better rating for visual field compared to that of Propofol. Hence, Dexmedetomidine is associated with lesser amount of blood loss, both Dexmedetomidine and Propofol could achieve desired hypotension without any complications in patients for FESS. Dexmedetomidine is a better drug for hypotensive anaesthesia as per surgeons satisfaction owing to good surgical field and less blood loss.

CONCLUSION

Based on the present clinical comparative study, 1. Both Dexmedetomidine and Propofol are used for maintenance of anaesthesia, and to maintain induced hypotension [MAP between 60-65 mmHg] and has less side effects. 2. Both Dexmedetomidine and Propofol are effective and safe drugs to provide stable hemodynamics, Reduce blood loss. Better operative field visibility. 3. Dexmedetomidine is better in controlling heart rate and was associated with better operative field visibility and overall surgeon satisfaction.

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