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ORIGINAL RESEARCH

Assessment Of Midazolam Plus Fentanyl Vs Midazolam Plus Propofol With Respect To Quality Of Anaesthesia For Regional Anaesthesia

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ABSTRACT

Aim: The aim of the study was to compare the quality of **Anaesthesia** provided by the combination of midazolam and fentanyl versus midazolam and propofol in patients undergoing surgeries under regional **Anaesthesia**. **Materials and methods-**The study involved 100 patients with ASA Grade I, II, and III, who were randomly divided into two groups of 50 patients each. The study compared the use of midazolam with fentanyl in group A and midazolam with propofol in group B for conscious sedation. Quality of **Anaesthesia** was compared in terms of sedation score. Data analysis was done using SSPS software. **Results-** In comparing the results of sedation scores between Group A (Midazolam + Fentanyl) and Group II (Midazolam + Propofol), it is evident that Group B (Midazolam + Propofol) achieved better overall results. **Conclusion-**Our study indicates that the quality of sedation achieved with Midazolam plus Propofol is significantly superior to that achieved with Midazolam plus Fentanyl.

Keywords- Midazolam, Fentanyl, Propofol

INTRODUCTION

Conscious sedation plays a crucial role in ensuring patient comfort and cooperation during various surgical procedures performed under regional **Anaesthesia**. Among the medications commonly used for conscious sedation, midazolam in combination with either fentanyl or propofol has been a subject of clinical interest.[1]

Midazolam, a benzodiazepine with sedative and anxiolytic properties, is often used in combination with other agents to achieve optimal sedation levels while maintaining patient safety and hemodynamic stability.[2,3] Fentanyl, a potent opioid analgesic, is commonly employed for pain management during procedures. On the other hand, propofol, a sedative-hypnotic agent with rapid onset and short duration of action, is known for its efficacy in inducing and maintaining sedation.[4]The selection of the sedative agent in conscious sedation protocols can significantly impact the overall quality of **Anaesthesia** experienced by the patient, including factors such as sedation depth, analgesia, hemodynamic stability, recovery profile, and overall patient satisfaction.[5,6] By comparing the effects of midazolam plus fentanyl with midazolam plus propofol in the setting of regional anaesthesia, this study aims to compare the quality of **Anaesthesia** provided by the combination of midazolam and fentanyl versus midazolam and propofol in patients undergoing surgeries under regional **Anaesthesia**.

MATERIALS AND METHODS

The study involved 100 patients with ASA Grade I, II, and III, who were randomly divided into two groups of 50 patients each. The study compared the use of midazolam with fentanyl in group A and midazolam

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with propofol in group B for conscious sedation. The patients were undergoing various surgeries under regional **Anaesthesia**, including both routine and emergency surgeries.Patients with a history of allergic reaction to the study medication, chronic opioid or sedative drug use were excluded from the study. Sedation score was compared. Data analysis was done using SSPS software.

RESULTS

Mean age of the patients of group A was 41.8 years while mean age of the patients of Group B was 39.5 years. The distribution of sedation scores between Group A (Midazolam + Fentanyl) and Group B (Midazolam + Propofol) revealed notable differences in the percentage of patients falling into each category. In Group A, 22% of patients were classified as "Poor," 24% as "Acceptable," and 54% as "Good," while in Group B, these percentages were 4%, 10%, and 86%, respectively. In comparing the results of sedation scores between Group A (Midazolam + Fentanyl) and Group B (Midazolam + Propofol), it is evident that Group B (Midazolam + Propofol) achieved better overall results.

Table 1: Comparison of demographic data

Variable	Group A	Group B
Mean age (years)	41.8	39.5
Male gender	38	35
Female Gender	12	15

Table 2: Comparison of sedation score

Sedation score	Group A (Midazolam + Fentanyl) n(%)	Group B (Midazolam + Propofol) (n%)
Poor	11(22%)	2(4%)
Acceptable	12(24%)	5(10%)
Good	27(54%)	43(86%)
Total	50(100%)	50(100%)
p-value	0.001 (Significant)	

DISCUSSION

The combination of Midazolam and Fentanyl is a commonly used sedation regimen known for its efficacy in providing sedation, pain relief, and anxiety reduction during medical procedures.[7] On the other hand, Midazolam plus Propofol offers deeper sedation levels with better control and predictable onset compared to Midazolam plus Fentanyl. While both combinations can lead to side effects such as respiratory depression and hypotension, Midazolam plus Fentanyl may carry a higher risk due to the opioid component, whereas Midazolam plus Propofol is associated with transient pain and temporary respiratory depression.[8,9]

Mean age of the patients of group A was 41.8 years while mean age of the patients of Group B was 39.5 years. The distribution of sedation scores between Group A (Midazolam + Fentanyl) and Group B (Midazolam + Propofol) revealed notable differences in the percentage of patients falling into each category. In Group A, 22% of patients were classified as "Poor," 24% as "Acceptable," and 54% as "Good," while in Group B, these percentages were 4%, 10%, and 86%, respectively. In comparing the results of sedation scores between Group A (Midazolam + Fentanyl) and Group B (Midazolam + Propofol), it is evident that Group B (Midazolam + Propofol) achieved better overall results.Parikh DA et al, compared satisfaction scores and effectiveness of sedation and analgesia with dexmedetomidine with a combination of midazolam-fentanyl.Ninety patients undergoing tympanoplasty under local **Anaesthesia** randomly received either IV dexmedetomidine 1 μg kg-1 over 10 min followed by 0.2 μg kg-1h-1 infusion (Group D) or IV midazolam 0.06 mg kg-1 plus IV fentanyl 1 μg kg-1 over 10 min (Group MF) followed by normal saline infusion at 0.2 ml kg-1h-1. Patient and surgeon satisfaction score was better in Group D than Group MF (median interquartile range. Intraoperative heart rate and mean arterial pressure in Group D were lower than the baseline values and the corresponding values in Group MF ($P < 0.05$). Percentage of patients requiring rescue fentanyl was higher in Group MF than Group D (40% vs. 11.1%, $P = 0.01$). One patient in Group D while four in Group MF (8.8%) required rescue sedation with midazolam ($P > 0.17$). Seven patients in Group D had dry mouth vs. none in Group MF ($P = 0.006$). One patient in Group D had bradycardia with hypotension which was effectively treated.[10] Kumari et al compared the sedative and propofol-sparing effect of dexmedetomidine and midazolam in minor gynecological day care surgeries. Group A received intravenous (i.v.) dexmedetomidine 0.1 μg/kg, Group B received i.v. midazolam 0.04 mg/kg, and Group C received normal saline 10 min before induction. Sedation score was statistically highly significant between Group A and B ($P < 0.001$). Between Group A and C, it was statistically significant ($P < 0.05$); however, score was nonsignificant between Groups B and C ($P > 0.05$). During recovery at 120 min after surgery, score 5 was achieved equally by all three groups which was found to be statistically insignificant ($P > 0.05$). Mean dose of additional propofol used was less in Group A (14 ± 9.25) than B (25 ± 5.40) and C (53 ± 10.96). On intergroup

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comparison between all three groups, it was found to be statistically highly significant ($P < 0.001$). Comparison of bispectral index (BIS) values between Groups A and C and Groups B and C were highly significant ($P < 0.001$). However, it was statistically significant between Groups A and B ($P < 0.05$). Aldrete scoring and street fitness scores were highly significant between Groups A and B, B and C, and also between Groups A and C ($P < 0.001$). No significant hemodynamic derangements and side effects were noted in any of three groups.[11]

CONCLUSION

Our study indicates that the quality of sedation achieved with Midazolam plus Propofol is significantly superior to that achieved with Midazolam plus Fentanyl.

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