

A study of midazolam plus fentanyl versus midazolam plus propofol with respect to various complications during regional anaesthesia

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Abstract

Background: Conscious sedation lies between wakefulness and general anesthesia wherein patients are comfortably asleep but readily arousable to verbal commands and can independently maintain their airway. **Aims and Objectives:** To Study Midazolam plus Fentanyl versus Midazolam plus Propofol with respect to Various complications during regional Anaesthesia. **Methodology :** We conducted a comparative study of conscious sedation using midazolam with fentanyl in group-I vs. midazolam with propofol in group-II. In the department of anesthesia at Dr. V. M. Govt. Medical college In the period between January 2005 to December 2005. 60 patients of ASA Grade I, II, and III, were randomly divided in two groups, 30 in each group, of between 15 to 60 years of either sex undergoing any surgery under regional anesthesia. The statistical analysis done by Z-test i.e. Standard error of difference between two proportions calculated by SPSS 19 version software. **Result:** All the demographic characters were comparable to each others in both the groups and the complications like Respiratory depression (*P<0.05,Z=2.010) , Bradycardia (*P<0.05, Z=2.15), Hypotension (*P<0.05,Z=2.010) were significantly higher in the Propofol group as compared to Fentanyl group and Itching (P>.05, Z=1.82), Nausea (P>0.05, Z=1.72), Vomiting (P>0.05,Z=1.03) were comparable in both the groups. **Conclusion:** It can be concluded from our study that the complications like Respiratory depression , Bradycardia, Hypotension were significantly higher in Propofol group as compared to Fentanyl group and complications like were comparable to each other in both the groups.

Key Words: Fentanyl, Propofol, Respiratory depression, Bradycardia, Hypotension

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INTRODUCTION

Conscious sedation lies between wakefulness and general anesthesia wherein patients are comfortably asleep but readily arousable to verbal commands and can independently maintain their airway⁶. Various methods have been described to provide these range from

intravenous or inhalation sedation to full general anesthesia. To avoid the disadvantages of the latter. Light sedation with an intravenous agent is obviously the method of choice. However to preserve the benefit of the local technique, recovery must be rapid and clearheaded with freedom from minor postoperative sequelae⁷. Regional anesthesia is becoming an increasingly important aspect of anesthesia practice. Its advantages include avoidance of certain risks with general anesthesia such as pulmonary aspiration and airway obstructions, laryngospasm. Avoidance of operation theater pollution, provision of good postoperative analgesia. Benefits in certain pre-existing pulmonary embolism postoperatively^{1,2,3,4,5}

METHODOLOGY

We conducted a comparative study of conscious sedation using midazolam with fentanyl in group-I vs. midazolam

with propofol in group-II. In the department of anesthesia at Dr.V.M.Govt. Medical college In the period between January 2005 to December 2005.60 patients of ASA Grade I,II,and III, were randomly divided in two groups, 30 in each group, of between 15 to 60 years of either sex undergoing any surgery under regional anesthesia (spinal, epidural anesthesia or peripheral nerve blocks, Routine of emergency surgery were included into study and with history of allergic reaction to the study medication,

Chronic opioid or sedative drug use, Obesity(>130% for ideal body weight)Clinically significant cardiac, pulmonary, hepatic or renal dysfunction were excluded from the study. Intraoperative complications like respiratory depression, bradycardia, hypotension, itching, nausea, vomiting was noted. The statistical analysis done by Z-test i.e. Standard error of difference between two proportions calculated by SPSS 19 version software.

RESULT

Table 1: Distribution of the Patients as per the Demographic Characters

Characteristics	Group I (Fentanyl)	Group II (Propofol)	Remarks
Age (years)			
15-25	8	3	
26-35	5	8	
36-45	10	12	
46-55	6	3	
56-65	1	4	
Mean±Std.Devi.	35.67±11.74	39±11.36	NS
Sex			
Male	15	16	NS
Female	15	14	
ASA/I/II	27/3	21/9	
Routine/Emergency	29/1	25/5	

All the demographic characters were comparable to each others.

Table 2: Distribution of the Patients as per the complications in two groups

Complications	Group I (n=30)	Group II (n=30)	P-Value
Respiratory depression	1	6	*P<0.05, Z=2.010
Bradycardia	1	7	*P<0.05, Z=2.15
Hypotension	1	6	*P<0.05, Z=2.010
Itching	2	3	P>.05, Z=1.82
Nausea	5	7	P>0.05, Z=1.72
Vomiting	4	5	P>0.05,Z=1.03

The complications like Respiratory depression (*P<0.05,Z=2.010) , Bradycardia (*P<0.05, Z=2.15), Hypotension (*P<0.05,Z=2.010) were significantly higher in the Propofol group as compared to Fentanyl group and Itching (P>.05, Z=1.82), Nausea (P>0.05, Z=1.72), Vomiting (P>0.05,Z=1.03) were comparable in both the groups.

DISCUSSION

Fentanyl is a potent synthetic opiate agonist, estimated to be 25 fold to 100 fold more potent than morphine. It is highly lipid soluble and enters the central nervous system swiftly. Leading to rapid onset of action. Fentanyl provides relief of moderate to severe pain and has become the narcotic drug of choice for a wide variety of painful procedures. It has relatively short duration of action. These qualities make it ideal for the expeditious completion of painful procedures in the emergency department setting^{8,9}. Propofol, marketed as Diprivan among others, is a short-acting medication that results in a decreased level of consciousness and lack of memory for events.¹⁰ Its uses include the starting and

maintenance of general anesthesia, sedation for mechanically ventilated adults, and procedural sedation. It is also used for status epilepticus if other medications have not worked. It is given intravenously. Maximum effect takes about two minutes to occur and it typically lasts five to ten minutes.¹⁰ Common side effects include an irregular heart rate, low blood pressure, burning sensation at the site of injection, and the stopping of breathing. Other serious side effects may include seizures, infections with improper use, addiction, and propofol infusion syndromewith long-term use. It appears to be safe for using during pregnancy but has not been well studied in this group. However, it is not recommended during cesarean section.¹⁰ Propofol is not

a pain medication, so opioids such as morphine may also be used.¹¹ Whether or not they are always needed is unclear.^{12,13} In our study we have seen that the complications like Respiratory depression (*P<0.05, Z=2.010, Bradycardia (*P<0.05, Z=2.15), Hypotension (*P<0.05, Z=2.010) were significantly higher in the Propofol group as compared to Fentanyl group and Itching (P>.05, Z=1.82), Nausea (P>0.05, Z=1.72), Vomiting (P>0.05, Z=1.03) were comparable in both the groups.

CONCLUSION

It can be concluded from our study that the complications like Respiratory depression, Bradycardia, Hypotension were significantly higher in Propofol group as compared to Fentanyl group and complications like where comparable to each other in both the groups.

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