Original Research Article

A comparative study of midazolam plus fentanyl versus midazolam plus propofol with respect to quality of anaesthesia for regional anaesthesia

Sangita M Agale(Eram)[1], Vinayak S Sirsat[2*]

[1]Assistant Professor, [2]Associate Professor, Department of Anaesthesiology, Government Medical College, Latur-413512, Maharashtra, INDIA.
Email: dreramsangita@gmail.com

Abstract

Background: Surgery and anesthesia are events that pose considerable stress on the patient. **Aims and Objectives:** To Study Midazolam plus Fentanyl versus Midazolam plus Propofol with respect to Quality of anaesthesia for 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 Government Medical College, Latur. In the period between January 2015 to December 2015. 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. **Result:** Quality of sedation in both the groups. In groups II (midazolam+propofol), 80% patient had good sedation and 20% patient had acceptable sedation where as in group I (Midazolam + fentanyl) 50% had good sedation, 26% had poor sedation. So in Group II (Midazolam +propofol) significantly better quality of sedation achieved. **Conclusion:** It can be concluded from our study that Midazolam plus propofolsignificantly better quality of sedation achieved than Midazolam plus fentanyl.

Key Words: Quality of anaesthesia, regional Anaesthesia, Midazolam plus propofol, Midazolam plus fentanyl.

[*]**Address for Correspondence:**
Dr. Vinayak S Sirsat, Associate Professor, Department of Anaesthesiology, Government Medical College, Latur-413512, Maharashtra, INDIA.
Email: dreramsangita@gmail.com
Received Date: 02/09/2017 Revised Date: 12/10/2017 Accepted Date: 04/11/2017
DOI: https://doi.org/10.26611/1021422

Access this article online

Quick Response Code:

Website: www.medpulse.in

Accessed Date: 07 November 2017

INTRODUCTION

Surgery and anesthesia are events that pose considerable stress on the patient. Except a few, patients like to remain sedated during the surgical procedure. the state of wakefulness can produce anxiety and reduce patient satisfaction and cooperation. 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[1]. There is considerable interest in defining the characteristics of high-quality anaesthesia care.[2–4] The values and biases of the evaluator will influence these characteristics.[5] For example, administrators and surgeons[6] may evaluate anaesthesia care in quite different ways to anaesthetists[7] and anaesthetic nurses.[8] Ability to maintain patent airway independently is an important distinguishing feature of conscious sedation from deep sedation. In our institute Government Medical College, Latur we have proposed to use conscious sedation with Midazolam and Fentanyl vs. Midazolam and propofol. In this prospective randomized clinical study, was examined whether conscious sedation with Propofol is better than fentanyl patients satisfaction (Quality of Anesthesia) was studied and patients preference to remain sedated in future surgical procedure was studied.

How to site this article: Sangita M Agale(Eram), Vinayak S Sirsat. A comparative study of midazolam plus fentanyl versus midazolam plus propofol with respect to quality of anaesthesia for regional anaesthesia. *MedPulse International Journal of Anesthesiology.* November 2017; 4(2): 36-38. http://medpulse.in/Anesthsiology/index.php

MATERIAL AND METHODS

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 Government Medical College, Latur. In the period between January 2015 to December 2015. 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 while patients 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.

Table 1: Sedation score is as follows

Sr. No	Parametere	Score
A	Fully awake and anxious	1
B	Drowsy or awake and comfortable	2
C	Eyes closed but responds to verbal commands	3
D	Eyes closed but responds to light physical stimulation.	4
E	Unresponsive to light physical simulation.	5

Patients were specifically asked awareness during the surgical procedure and whether they will be happy to have same anesthetic technique again. Statistical analysis done by Chi square test and unpaired t-test by SPSS 19 software.

RESULT

Table 2: Demographic data

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	
Sex			
Male	15	16	NS
Female	15	14	

The socio demographic characters of both the groups were comparable to each other.

Table 2: Quality of sedation

Sedation score	characteristics	Group I(n=30) Midazolam + Fentanyl		Group II (n=30) Midazolam + Propofol	
		No.	%	No	%
1	Poor	8	26%	0	0%
2	Acceptable	7	24%	5	20%
3-4	Good	15	50%	25	80%
5	Deep sedation	-	-	-	-
	Total	**30**	**100%**	**30**	**100%**

X^2 =8.75

Above table shows quality of sedation in both the groups. In groups II (midazolam+propofol), 80% patient had good sedation and 20% patient had acceptable sedation where as in group I (Midazolam + fentanyl) 50% had good sedation, 26% had poor sedation. So in Group II (Midazolam +propofol) significantly better quality of sedation achieved.

DISCUSSION

Advantages of conscious sedation:- Adequate sedation with minimal risk, Relief of anxiety, Amnesia, Relief of pain and other noxious stimuli. Benzodiazepines are widely used to produce sedation and amnesia in the operative room. Midazolam offers several advantages over other available benzodiazepines. It cases early recovery less postoperative sedation, less veno irritation on injection and has excellent amnestic action. Midazolam is used for conscious sedation for short diagnostic or endoscopic and dental procedure, adjunt to local or regional anesthesia[9]. Propofol is a sedative hypnotic drug, which is becoming popular for sedation during our patients procedures performed under local anesthesia. Its high clearance and favorable recovery profile offers advantages over other intravenous sedative

and analgesic drugs. Sedation with propofol can be adjusted with manual intermittent bolus injections techniques[10,11]. Fentanyl: 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[12,13.] Components of conscious sedation: Analgesia, anxiolysis, hypnosis. Patient's comfort is maintained with combination of drug[15]. In our study the quality of sedation. 80% of patients from propofol group had sedation score 3 to 4 i.e. good sedation, but only 50% of patients from fentanyl group had a good sedation. 0% of patients from propofol group and 26% of patients from fentanyl group had poor sedation i.e. sedation score was one. Means propofol+Midazolam gave good sedation than fentanyl+Midazolam. This is comparable with study of Christopher *et al*. in which they attempted to maintain stable level of sedation 3-4 with no restriction on frequency of bolus injection. They concluded target controlled infusion delivery system has been easier to use anesthesiologist felt more confidant regarding the predictability of anesthetic effects. Midazolam along with Fentanyl was used in a wide variety of pediatric patients by pediatrics clinical north america[14] with the combined effect of sedation and analgesia.Midazolam in combination with fentanyl is effective for sedation and analgesia when used monitoring protocol because of enhance potential of respiratory depression so person expert in airway management should administer it.

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Source of Support: None Declared
Conflict of Interest: None Declared