

Effectiveness of Midazolam Compared to Diazepam and Placebo for Reducing Anxiety after Premedication at 250 Bed (Medical College) Hospital, Patuakhali

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ABSTRACT

Introduction: The job of anxiolytic premedication in the ambulatory surgical population is much of the time discussed. Anaesthesiologists may consider the organization of anxiety-reducing drugs pointless when anxiety levels are low in outpatients displaying for minor surgery. Intravenous (IV) midazolam is the most normally utilized premedicant in the ambulatory setting because of its fast onset, and short half-life), however its lingering impacts in the prompt postoperative period may add to postoperative sedation, just as to delayed recovery and discharge-readiness after brief outpatient surgery.

Objective: This investigation is done fundamentally to test whether the utilization of the pre-anaesthesia midazolam medication quantifiably reduces uneasiness in contrast with getting no pre-anaesthesia drug (placebo) or diazepam before medical procedure procedures.

Method: The inclusion criteria of the examination are the patients matured between 18 to 68 years old scheduled for elective surgery or diagnostic procedures requiring anaesthesia. at a neighbourhood emergency clinic named 250 bed (medical college) hospital situated in patuakhali, Bangladesh, an interventional (clinical trial) study was led with 150 patients scheduled for surgical or diagnostic procedures

needful of anaesthesia techniques. The study duration was almost one year from October 2016 to October 2017.

Results: After numerous information and examination investigation it was discovered that diazepam ranked ahead midazolam and placebo with little to no symptom.

Conclusion: It can be clearly concluded that diazepam ranks ahead in case of anxiety reduction compared to midazolam or placebo.

Keywords: Premedication, Midazolam, Placebo, Anaesthesia, Diazepam.

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INTRODUCTION

The job of anxiolytic premedication in the ambulatory surgical population is as often as possible discussed. Anesthesiologists may consider the administration of anxiety-reducing drugs superfluous when anxiety levels are low in outpatients presenting for minor surgery. Be that as it may, the past investigation reports that up to 80% of outpatients communicated an inclination for a mix of anxiety-reducing and hypnotic premedication before medical procedure. Notwithstanding anxiolysis, objectives of anxiolytic premedication incorporate sedation, amnesia, improved patient participation, as well as improved patient fulfillment. Intravenous (IV) midazolam is the most usually utilized premedicant in the ambulatory setting because of its rapid onset, and short half-life, however its lingering impacts in the prompt

postoperative period may add to postoperative sedation, just as to delayed recovery and discharge-readiness after brief outpatient medical procedure.

Little is known in regards to the anxiolytic impact of procedural.¹⁻⁶ Customarily, various kinds of benzodiazepines are administered before the beginning of a medical procedure. Benzodiazepines increment the impact of the normal neurotransmitter gamma-aminobutyric acid at the receptor site in the mind, which starts a reduction of neuron excitability with consequently anxiolytic, sedative and amnesic effects.¹ Be that as it may, there are different information supporting the utilization of benzodiazepines as anxiolytic agents for patients experiencing medical procedure. Correspondingly, there are no rules giving guide in choosing

pharmacological systems to diminish procedural anxiety. Thus, the everyday choice of anxiolytic premedication is as of now not evidence-based but rather reliant on the administrator's close to home inclination. As needs be, in the present examination, we decided the impacts of the benzodiazepines diazepam 5 mg/os and midazolam 7.5 mg/os contrasted and no premedication (fake treatment or placebo) on decreasing anxiety levels in patients experiencing surgery.



Figure 1a and 1b: Midazolam and Diazepam

OBJECTIVES

Main Objective

The main purpose of this research is to estimate the sedative, and anxiolytic effect of midazolam when administered for pre-operative medication in comparison to diazepam and placebo.

Specific Objectives

The specific objectives of the study are:

- To conduct a randomized, double-blind, and placebo-controlled trial
- Gauging the level of discomfort among the patients, pre-surgery.
- Appraising the level of sedation required at the time of application of medication (sedatives).

METHOD

Study Type

This is an Interventional (Clinical Trial) study.

Inclusion Criteria

- Has the ability and willingness to sign an informed consent document
- No allergies regarding midazolam
- 18 - 68 years of age
- American Society of Anaesthesiologists (ASA), Class I-III adults of either/both sex

Exclusion Criteria

- Patients continuously abusing sedative, anxiolytic drugs before the surgery
- Pregnant and/or lactating women
- Patients with known allergy, contraindications or hypersensitivity to midazolam, anaesthetic or analgesic drugs
- Morbid obesity
- Patients who are agitated and/or confused before receiving the sedatives

Study Area

- A local hospital named 250 Bed (Medical College) Hospital located in Patuakhali, Bangladesh,
- A descriptive interventional study was conducted
- 150 patients scheduled for surgical or diagnostic procedures needful of anaesthesia techniques
- The study duration was from October 2016 to October 2017.

Study Procedure

- The efficacy of oral midazolam 10mg was assessed by giving the dose to the patients 30 to 60 minutes prior to the procedure (approximate time until peak effect¹),
- Along with a standard medication regimen of ibuprofen and PCB,
- In decreasing anxiety and pain compared to placebo plus the standard medication

Table 1: Demographic Characteristics and Procedural Data

All	No premedication (Placebo)	Diazepam	Midazolam
Demographics	n=50	n=50	n=50
Age (years)	68±12	66±12	65±11
Male	35 (70%)	39 (78%)	31 (62%)
Female	15 (30%)	11 (22%)	19 (38%)
Medical history			
CAG or PCI	24 (48%)	23(46%)	25 (50%)
Risk factors			
Diabetes mellitus	25 (50%)	39 (78%)	15 (30%)
Current cigarette smoking	9 (18%)	11 (22%)	19 (38%)
Known hypertension	2 (4%)	12 (24%)	13 (26%)
Follow-up			
1 years mortality	2 (4%)	5 (10%)	4 (8%)

Note: Data are articulated as number (%), mean±SD.

Table 2: Prevalence of Anxiety in Different Premedication Segments

Dose	No premedication	Diazepam	P values*	Midazolam	P values*
	(Placebo)	5 mg/os		7.5 mg/os	
<i>T_{max}</i>					
<i>T_{1/2}</i>					
VAS intake	3.9 ± 2.6	4.1 ± 2.6	0.33	4.2 ± 2.8	0.25
VAS pre-procedure	4.1 ± 2.6	4.2 ± 2.6	0.05	4.4 ± 2.8	0.24
VAS post-procedure	2.6 ± 2.4	2.2 ± 2.3	0.03	2.4 ± 2.7	0.47
VAS at discharge	1.6 ± 1.8	1.5 ± 1.8	0.7	1.4 ± 1.9	0.37

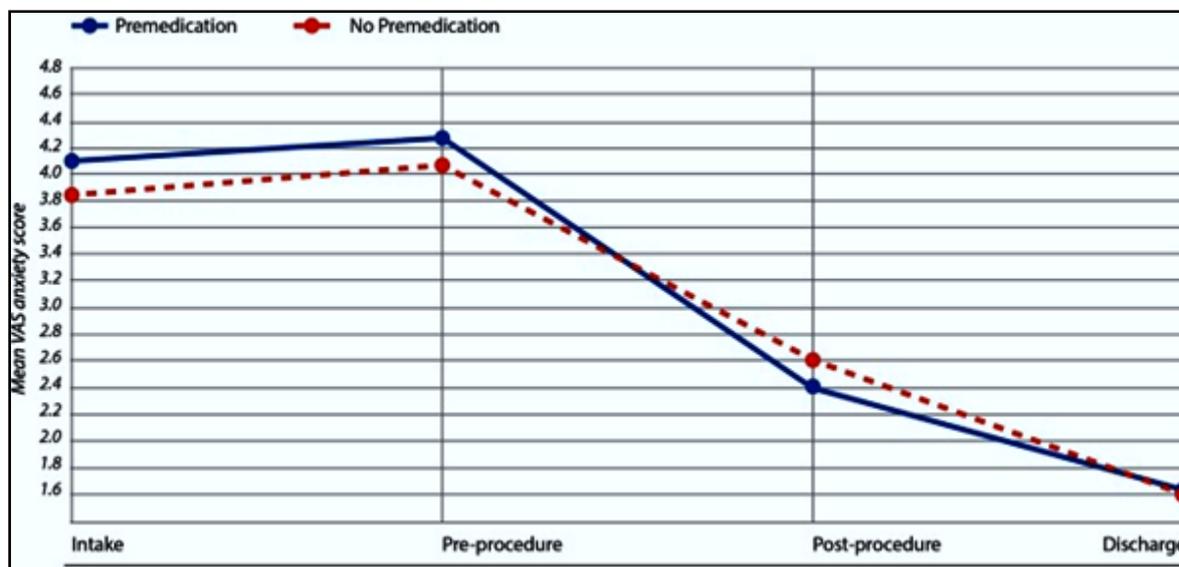


Figure 2: Visual Analogue Scale (VAS) anxiety score Premedication of Midazolam and Diazepam versus Placebo (No Premedication).

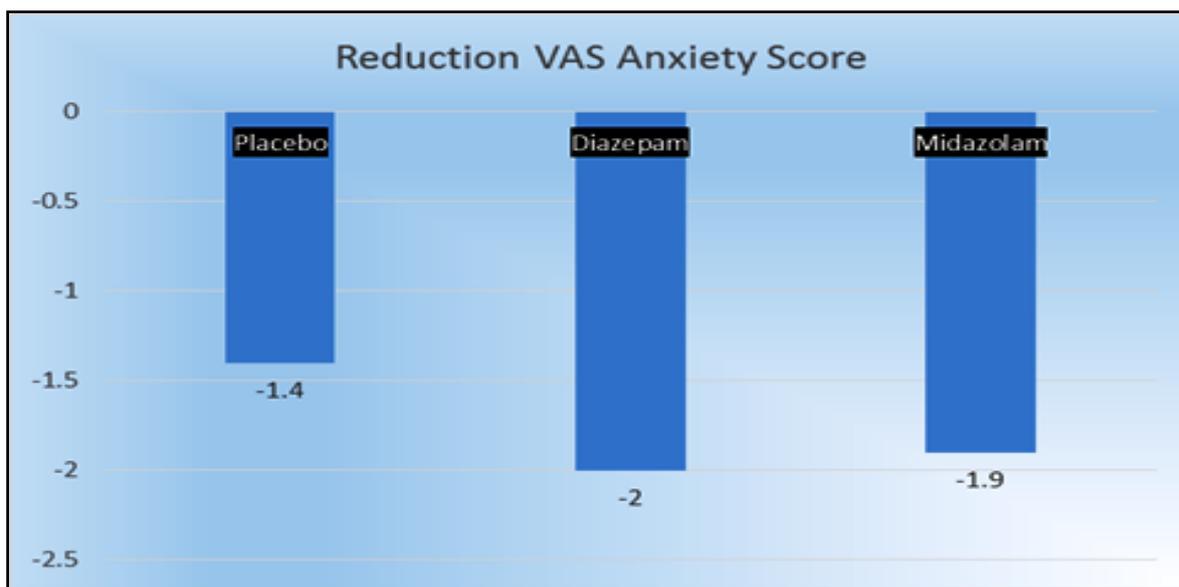


Figure 3: Reduction VAS Anxiety Score

RESULTS

The descriptive summary of the demographic, procedural factors are grouped by the sedatives or non-sedatives used are thoroughly described in table 1.

Anxiety reduction considerably improved in patients whom undertook benzodiazepines (Midazolam and Diazepam) as premedication (Δ VAS = -1.8 ± 2.9) compared to patients who did

received placebo (Δ VAS = -1.3 ± 2.6 , $p=0.004$) (Figure 2). The use of diazepam generated the highest anxiety reduction (Δ VAS = -2.0 ± 2.6 , $p=0.003$). The use of midazolam (Δ VAS = -1.9 ± 3.3 , $p=0.13$) did not lead to a significant anxiety reduction compared to placebo (*no premedication*) tablets. (Figure 3) (Table 2)

Mean reduction of VAS scores in the samples split for the use of premedication (Figure 3). Absolute reduction of VAS score pre-procedure compared with post-procedure is defined as the reduction of anxiety. Premedication with diazepam ($P = .003$) resulted in significant anxiety reduction compared to either midazolam or placebo.

DISCUSSION

Oral and IV midazolam has been considered and observed to be sheltered and powerful in lessening perioperative agony and additionally nervousness for adults experiencing outpatient dermatologic surgery², flexible sigmoidoscopy³, diagnostic upper endoscopy⁴, and dental surgery.⁵

Oral midazolam has additionally been observed to be protected and successful as a premedication before general anaesthesia or IV conscious sedation.⁶⁻¹⁴

While no major unfriendly occasions were accounted for in these examinations, oral midazolam has realized symptoms including paradoxical reactions, nausea, or excessive sedation with potential to cause oxygen desaturation or delayed discharge and can cause allergic reactions. Oral midazolam is an engaging alternative as it has a fast onset, wide safety margin, and short duration of action when contrasted with other benzodiazepines¹⁵. Midazolam has a place with a more up to date class of benzodiazepines called "imidazobenzodiazepines." As such; there is a receptor antagonist, flumazenil accessible for reversing midazolam.¹⁶ Moreover, in contrast to oral lorazepam or diazepam, midazolam has a solid dose-dependent amnesic impact that is seen with both oral and intravenous (IV) routes of administration.¹⁵⁻²¹

However, this study shows that the use of diazepam generated the highest anxiety reduction. The use of midazolam did not lead to a significant anxiety reduction compared to placebo (*no premedication*) tablets with the p value of 0.13. Additionally, anxiety reduction considerably improved in patients whom undertook benzodiazepines (Midazolam and Diazepam) as premedication compared to patients who received placebo. Premedication with diazepam ($P = .003$) resulted in significant anxiety reduction compared to either midazolam or placebo. Thusly, the use of diazepam ranks ahead of Midazolam in this study.

In the investigation by Woodhead et al²², (n=144) the frequency of access site related complications as pseudo aneurysms, haematomas, and arterial bleedings was equivalent in patients premedicated with diazepam or without premedication. Nervousness was expressed to be equivalent in all gatherings. By the by, this was estimated with a solitary inquiry that did not evaluate anxiety levels.

Second, Kazemisaeid et al²³ (n=151) directed a placebo controlled, double blind, randomized controlled trial, which demonstrated a noteworthy increment in anxiety reduction that was measured in vas score, in patients premedicated with intravenous midazolam contrasted and both diazepam with intramuscular promethazine and a placebo.

In any case, this could be credited to the way that patients with higher pre-procedural tension were premedicated with midazolam, instead of the anxiolytic impact of midazolam itself. As opposed to our present investigation, the post-procedural anxiety levels of their examination did not vary among the diverse groups.

CONCLUSION

From the result and discussion of the study, it can be clearly concluded that diazepam ranks ahead in case of anxiety reduction compared to midazolam or placebo. However, in increased use, diazepam may affect the patients memory as it has some amnesic property. In moderate use, midazolam is comparatively a safer option.

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