Comparison Of Oral Alprazolam 0.25 Mg With Alprazolam 0.5 Mg As Preoperative Anti-Anxiety In Patients Undergo Elective Surgery At Haji Adam Malik General Hospital Medan

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Abstract- **Background:** Anxiety will affect the body's response to release catecholamines so that it can result in an increase in heart rate, contraction of the heart muscle, arterial vasoconstriction, increase in blood sugar levels and others; these conditions can aggravate the condition before entering the operating room.

Objective: This study aims to determine the comparison of the administration of 0.25 mg alprazolam tablets with 0.5 mg alprazolam as a preoperative anti anxiety in patients undergoing elective surgery using the Hamilton Anxiety Rating Scale (HARS) in Haji Adam Malik General Hospital Medan.

Method: This research is a double-blind experimental research. The study was conducted in the Haji Adam Malik General Hospital Medan from February-April 2020. The total sample obtained was 60, of which 30 samples were given Alprazolam 0.25 mg, while the other 30 samples were given Alprazolam 0.5 mg. Previously, the level of anxiety was measured based on the Hamilton Anxiety Rating Scale (HARS) of patients who were included in the sample were patients with moderate and severe anxiety level and re-assessed the level of anxiety after 10 hours of alprazolam administration using Hamilton Anxiety Rating Scale (HARS). Data collection was carried out using questionnaires.

Results: The level of anxiety after administration of alprazolam which was assessed based on the Hamilton Anxiety Rating Scale (HARS) in the group given Alprazolam 0.25 mg and 0.5 mg statistically, no significant difference was found in reducing the level of anxiety.

Conclusion: Comparison between Alprazolam 0.25 mg with 0.5 mg gives the result that the value of anxiety is equally decreased in the administration of alprazolam 0.25 mg and 0.5 mg but there is no statistically significant difference either in the administration of alprazolam 0.25 mg or 0.5 mg.

Index Terms- Hamilton Anxiety Rating Scale, Alprazolam , Anxietas

I. INTRODUCTION

Anxiety is a feeling of uncertain, helplessness, isolated, and insecurity. This emotional state has no specific object.[1] Surgery is a treatment procedure that uses an invasive method. The surgical phases consist of the preoperative, intraoperative and postoperative phase. The preoperative phase in surgery is the initial phase of surgical process. This initial phase begins when the decision is made for surgical intervention and ends when the patient arrive at the operating table.[2]

The situation before entering the operating room can provide discomfort and anxiety which affects the patient's mental state. This will affect body's response to release catecholamine so that it can lead to an increase in heart rate, contraction of the heart muscle, vasoconstriction of the arteries, increased blood sugar levels and others; this condition can aggravate the condition before entering the operating room.[2]

Most of the patients who waiting for elective surgery have anxiety. The incidence of preoperative anxiety has been estimated to vary from 11% to 80% in adults. Research in 2007 on the preoperative anxiety level showed that out of 40 respondents there were 16 people or 40% who had an anxiety level in the moderate category, 15 people or 37.5% in the mild category, respondents with a severe anxiety level were 7 people or 17, 5% and respondents who did not feel anxious were 2 people or 5%.[3]

Anxiety can cause elevated in catecholamine level leading to tachycardia, hypertension and hemodynamic instability, arrhythmias and high pain thresholds and persist into the postoperative period. A reliable biological indicator for an anxiety reaction is a valuable marker in psycho-physiological research and clinical practice.[4]

Patients are often given several anxiolytic drugs before surgery to prevent anxiety. Prevention of preoperative anxiety with anxiolytic premedication improves surgical outcomes and decreases hospitalizations in surgical patients. To reduce the level of anxiety is done by administering drugs from the benzodiazepine group. Benzodiazepines produce pharmacological effects by facilitating the action of gamma amino butyric acid (GABA), an inhibitory neurotransmitter in the central nervous system. The properties of benzodiazepines can be in the form of sedation,

anxiolytics, antidepressants, and hypnotics. Benzodiazepines include diazepam, alprazolam, lorazepam, midazolam, clonazepam, diazepam, and oxazepam.[5]

Anxiety can be measured by measuring the anxiety level according to an anxiety measurement tool called the HARS (Hamilton Anxiety Rating Scale). The HARS scale is a measure of anxiety based on the appearance of symptoms in individuals experiencing anxiety. According to the HARS scale, there are 14 symptoms that appear in individuals who experience anxiety. Each item that is observed is given 5 levels of score (Likert scale) between 0 (Zero Present) to 4 (severe). The HARS scale was first used in 1959, which was introduced by Max Hamilton and has now become the standard in measuring anxiety, especially in clinical trial studies. The HARS scale has been proven to have high enough validity and reliability to measure Anxieties in clinical trial studies, namely 0.93 and 0.97. This condition indicates that measurement.[6]

Based on the literature study and related research results and also considering the level of anxiety, side effects and drug availability, so that in this study the administration of alprazolam 0.25 mg and alprazolam 0.5 mg orally as a premedication drug was to assess the level of anxiety during premedication in patients who were going to underwent elective surgery before entering the operating room using the HARS scale.

II.   METHODS

This study is an analytic study with experimental design carried out at Haji Adam Malik General Hospital Medan.

Consecutive sampling is a sample selection technique by which all subjects who come and meet the selection criteria are included in the study until the number of subjects is met. After obtaining approval from the Ethics Committee, Faculty of Medicine, University of North Sumatra, based on inclusion and exclusion criteria 60 research samples were collected. The population sampled was divided randomly into 2 groups, namely group A received Alprazolam 0.25 mg and group B received Alprazolam 0.5 mg by using the double blind method. One day before, surgery schedule was seen for the next day and all possible patients to be sampled were checked whether they met the inclusion criteria or not, after being assigned the patients were randomly randomized and determined whether they were group A or group B. The drug that had been prepared by one volunteer was given to volunteer 2 to be given to patients at night according to their group. After 10 hours of drug administration, patients will be assessed for anxiety levels by pre-trained participants according to the HARS scale.

III.   RESULTS

This study was attended by 60 subjects who met the inclusion criteria. The characteristics of this study were displayed based on gender, age, religion, ethnic, education, and PS ASA.

4.1 Demographic Data Table

Characteristic	Group A Alprazolam 0,25 mg n	Group B Alprazolam 0,5 mg n	Total	P value
Gender, n (%)				
Man	13 (43,3)	14 (46,7)	27 (45)	
Woman	17 (56,7)	16 (53,3)	33 (55)	0,797
Age, Mean (SD)	40,0 ± 7,9	34,4 ± 13,1	37,2 ± 10,9	0,436
Religion, n (%)				
Muslim	13 (43,3)	19 (63,3)	32 (53)	0,124
Christian	17 (56,7)	11 (36,7)	28 (47)	
Ethnic, n (%)				
Batak	17 (56,7)	17 (56,7)	34 (57)	0,946
Malay	11 (36,7)	10 (33,3)	21 (35)	
Minang	1 (3,3)	2 (6,7)	3 (5)	
Javanese	1 (3,3)	1 (3,3)	2 (3)	
Education, n (%)				
Bachelor	6 (20,0)	9 (30,0)	15 (25,0)	0,529

SMA	18 (60,0)	18 (60,0)	36 (60,0)
SMP	3 (10,0)	3 (10,0)	6 (10,0)
SD	3 (10,0)	0 (0)	3 (5,0)
PS ASA			
I	11 (36,7)	14 (46,7)	25 (42)	0.436
II	19 (63,3)	16 (53,3)	35 (58)

*Mann-Whitney test

Table 4.1 shows the distribution of social and clinical characteristics in this study, with a mean patient age of 37.2 ± 10.9 years. Most of the patients were female with a percentage of 55.0%. Most patients were Muslim with a percentage of 53.0%, with the highest ethnic group being Batak, namely 57.0%. Most patients were with high school education, namely 60.0% and with the highest PS ASA II status at 58.0%. The samples in this study were entirely planned for elective surgery regardless of the anesthesia technique whether general anesthesia or regional anesthesia. From the results of the table after being entered into SPSS, the results obtained for the P value for gender $P = 0.797$, for age $P = 436$, religion $P = 0.124$, ethnicity $P = 0.946$, education $P = 0.529$, and PS ASA obtained P value = 0.436. It can be concluded that the patients in this study were relatively homogeneous ($p > 0.05$).

4.2 Comparison of anxiety levels in patients before treatment

HARS before treatment	Group				Total		P value
	Alprazolam 0,25 mg		Alprazolam 0,5 mg				
	N	(%)	N	(%)	n	(%)	
Mild anxiety	0	0	0	0	0	0	
Moderate anxiety	18	60	17	56,7	35	58,3	0,795
Severe anxiety	12	40	13	43,3	25	41,7	

*Mann-Whitney test

Based on the table 4.2, subjects with mild anxiety levels were not included in this study, the group receiving alprazolam 0.25 mg was 18 people (60%), the group receiving Alprazolam 0.5 mg with The level of severe anxiety was 17 people (56.7%). While subjects with severe anxiety levels in the group receiving alprazolam 0.25 mg were 12 people (40%), the group receiving alprazolam 0.5 mg with severe anxiety levels was 13 people (43.3%). The total number of patients with moderate anxiety levels in this study was 35 people (58.3%) and the total number of patients with moderate anxiety levels in this study was 25 people (41.7%). From the results of the table after being entered into the SPSS, the p value was 0.795 which can be concluded that the patients in this study were relatively homogeneous ($p > 0.05$).

4.3 Comparison of anxiety levels in patients after treatment

HARS after treatment	Group				Total		P value
	Alprazolam 0,25 mg		Alprazolam 0,5 mg				
	n	(%)	N	(%)	n	(%)	
Mild anxiety	18	60	18	60	36	60	
Moderate anxiety	9	30	12	40	21	35	0,757
Severe anxiety	3	10	0	0	3	5	

*Mann-Whitney test

Based on the table 4.3, there were 18 people (60%) with mild anxiety levels in patients after 10 hours administration of alprazolam 0.25 mg and the group that received Alprazolam 0.5 mg with mild anxietas levels were 18 people (60%). Subjects with moderate anxiety levels in the group receiving alprazolam 0.25 mg were 9 people (30%), while the group receiving Alprazolam 0.5 mg with moderate anxietas was 12 people (40%). While the subjects with severe anxiety levels in the group receiving alprazolam 0.25 mg were 3 people (10%) and the group receiving alprazolam 0.5 mg with severe anxiety levels was not found (0%).

The total number of patients with mild anxiety levels was 36 (60%), 21 patients (35%) had moderate anxiety levels, and the total patients with severe anxiety levels in this study were as many as 0.25 mg of alprazolam. 3 people (5%). From the results of the table after being entered into the SPSS, the p value was 0.757 which can be concluded that the patients in this study were relatively insignificant ($p > 0.05$).

IV.   CONCLUSIONS

There was no significant difference in the administration of alprazolam 0.25 mg or 0.5 mg in reducing the level of anxiety in patients undergoing elective surgery.

There was a decrease in anxiety levels in patients receiving alprazolam 0.25 mg using HARS scoring in patients undergoing elective surgery.

There was a decrease in anxiety levels in patients receiving alprazolam 0.5 mg using HARS scoring in patients undergoing elective surgery.

REFERENCES

[1]   Yorbik O, Mutlu C, Ozturk O, Altinay DK, Tanju IA. Salivary alpha amylase levels in youths with anxiety disorders. Psychiatry Research. 2016;235:148–53.

[2]   Batista MM, Martins JC, Oliveira LM. Anxiety, depression and stress in the preoperative surgical patient. Research Paper. 2014;3:7–15.

[3]   Breines JG, Mcinnis CM, Kuras YI, Thoma MV, Gianferante D, Hanlin L,dkk. Selfcompassionate young adult show lower salivary alpha amylase responses to repeated psychosocial stress. Routledge. 2015;14:390– 402.

[4]   Paryanto. Perbedaan Tingkat Anxietas Pasien Preoperatif Selama Menunggu Jam Operasi Antara Ruang Rawat Inap dengan Ruang Persiapan Operasi Rumah Sakit Ortopedi Surakarta. Fakultas Ilmu Kesehatan Universitas Muhammadiyah Surakarta; 2009.

[5]   Iida R, Kajiwara K, Kashiwai A, Kato J, Ogawa S. Comprehensive evaluation of the effect of triazolam on amnesia during the preoperative period. Masui 2011; 60: 67-74

[6]   Kim WS, Byeon GJ, Song BJ, Lee HJ. Availability of preoperative anxiety scale as a predictive factor for hemodynamic changes during induction of anesthesia. Korean J Anesthesiol 2010;58:328 33.

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