

Original article

Effect of valeric syrup on preoperative anxiety compared with diazepam and placebo

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Abstract

Objective: Pre anesthetic anxiety is a major challenge for both patients and anesthesiologist. The reported incidence of preoperative anxiety in adults ranges from 11% to 80%. Preoperative medication has an important role to reduce the preoperative anxiety. One of these medicines is valeric syrup that contains extracts of valerian and Melissa Officinal's (Lemon balm). Valerian is an herb with sedative and hypnotic properties and contains valepotriate and valeric acid. Lemon balm is another herb that used as an anxiolytic, mild sedative or calming agent. In this study, we evaluate the effect of valeric syrup on preoperative anxiety compared with diazepam and placebo.

Methods: Ninety patients were evaluated in this randomized, double blind clinical trial study. All patients older than 15 years old with American Society of Anaesthesia (ASA) physical status 1-2 underwent a surgical procedure were included in this study. Patients assigned into one of the three groups (valeric, diazepam and placebo group), (30 Patients in each group) according to random-number table. The day before surgery Patients were visited and vas score, systolic blood pressure, diastolic blood pressure and heart rate recorded for each Patient. 10 hours before the procedure group 1 received 15mg valeric syrup, group 2 received 10 mg diazepam and group 3 received placebo. For the second time 1 hour before the procedure group 1 received 15mg valeric syrup, group 2 received 10 mg diazepam and group 3 received placebo. Vas score, systolic blood pressure, diastolic blood pressure and heart rate recorded before the procedure beginning again.

Results: Ninety patients in three groups (valeric, diazepam and placebo) were compared. There was no significant difference in mean vas score between three groups but mean vas score was lower in valeric group after intervention. There was no significant difference in mean hemodynamic changes (systolic blood pressure, diastolic blood pressure and heart rate) between three groups, but mean diastolic blood pressure and mean heart rate was lower in valeric group after intervention. There was a significant difference in patient angeriness and obedience, but not about the other adverse effects.

Conclusion: According to our results since mean vas score, mean diastolic blood pressure and mean heart rate was lower in valeric group after the intervention and there was no significant difference in mean hemodynamic changes between three groups, valeric syrup is an appropriate option to preventing preoperative anxiety compared with diazepam and placebo..

Keywords: Valeric syrup; Preoperative anxiety; Diazepam.

Introduction

Each year, approximately 50 million surgical procedures are performed in the United States (1). Reports indicate that a significant number of adult

patients undergoing surgical procedures experience high levels of anxiety before surgery (2).

PREANESTHETIC anxiety is a major challenge for anesthesiologist too. (3_8) Preoperative anxiety is described as an unpleasant state of uneasiness or tension that is secondary

to a patient being concerned about a disease, hospitalization, anesthesia and surgery, or the unknown(9). The reported incidence of preoperative anxiety in adults ranges from 11% to 80%, depending on the assessment method.(9,10) Currently, modalities such as preoperative premedication and psychological preparation programs are being used to treat preoperative anxiety in adult patients.(11). Pre operative medication has an important role to reduce the preoperative anxiety and the main reason for premedication administration is to relieve fear and anxiety before anesthesia.(12)

Among drugs used for premedication in anesthesia, benzodiazepines have been shown to be efficient and safe. (13, 14) Diazepam is a relatively long-acting drug and one of the most commonly used pre medications given to adults.(15,16)

Herbal medicines are another appropriate options for pre anesthetic anxiety treatment because of lower adverse effects compared with benzodiazepines. One of this medicines is valeric syrup that contains extracts of valerian and Melissa Officinal's (Lemon balm). Valerian is an herb with sedative and hypnotic properties and contains valepotriate and valeric acid. Lemon balm is an another herb that used medicinally as an herbal tea, or in extract form. It is claimed to have antibacterial and antiviral properties (it is effective against herpes simplex).(17_19) It is also used as an anxiolytic, mild sedative or calming agent. Lemon balm extract was identified as a potent in vitro inhibitor of GABA transaminase, which explains anxiolytic effects. The major compound responsible for GABA transaminase inhibition activity in lemon balm was then found to be rosmarinic acid.(20)

in this study we evaluate the effect of valeric syrup on preoperative anxiety compared with diazepam and placebo.

Methods

After approval by the Ethical Committee and written informed consent, 90 patients were evaluated in this randomized double blind clinical trial study. All patients older than 15 years old with American Society of Anesthesia (ASA) physical status 1-2 underwent a surgical procedure were included in this study. Patients with history of depression, anxiety, sedative drug using and history of addiction were excluded from the study. Patients assigned into one of the three groups(valeric, diazepam and placebo group). (30 patients in each group) according to random –number table. The day before surgery Patients were visited and vas score recorded for each Patient. 10 hours before the procedure group 1 received 15mg valeric syrup, group 2 received 10 mg diazepam and group 3 received placebo. For the second time 1 hour before the procedure group 1 received 15mg valeric syrup, group 2 received 10 mg diazepam and group 3 received placebo. Vas score, systolic blood pressure, diastolic blood pressure and heart rate recorded before the procedure beginning again. Nausea, vomiting, headache, vertigo, drowsiness, anger and patient obedience recorded in a questionnaire before the procedure too.

All data analyzed using SPSS software version 19 and statistical tests. P. values<0.05 was considered significant.

Results

Ninety patients in three groups (valeric, diazepam and placebo) were compared. There was no significant difference in mean vas score between three groups but mean vas score was lower in valeric group after intervention. (table.1) there was no significant difference in mean hemodynamic changes (systolic blood pressure, diastolic blood pressure and heart rate) between three groups but mean diastolic blood pressure and mean heart rate was lower in valeric group after intervention. (table.2) there was a significant difference in patient angriness and obedience but not about the other adverse effects (nausea, vomiting, headache, vertigo and drowsiness).

Table.1 mean vas score(verbal anxiety score) between three groups

time	Valeric	Diazepam	Placebo	p. value
Before intervention	5.03	5.06	4.90	0.958
after intervention	4.20	4.40	4	0.8
comparison	0.83	0.6	0	0.51

Table 2. mean hemodynamic changes in three groups.

variables	time	valeric	diazepam	placebo	p. value
Systolic Blood Pressure(mm of Hg)	Before intervention	130.6	124.7	124.1	0.57
	after intervention	123.23	125.86	125.16	0.796
	Comparison	7.37	_1.16	_1.16	0.047
Diastolic Blood Pressure(mm of Hg)	Before intervention	79.50	76.83	78	0.497
	after intervention	79.56	77.33	79	0.447
	Comparison	_0.06	_0.5	1	0.915
Heart rate(beat /min)	Before intervention	79	81	82	0.204
	after intervention	78.36	82.76	84.10	0.025
	Comparison	0.64	_1.76	_2.1	0.461

Table.3: adverse effects between three groups:

variable	Valeric%	Diazepam%	Placebo%	p. value
headache	26.7	43.3	36.7	0.398
nausea	20	26.7	26.7	0.786
vomiting	13.3	6.7	6.7	0.578
drowsiness	6.7	23.3	3.3	0.031
obedience	86.7	70	93.3	0.044
anger	36.7	33.3	23.7	0.510
vertigo	10	23.3	6.7	0.133

Discussion

Most patients awaiting elective surgery experience preoperative anxiety (21,22). This anxiety is influenced by the uncertainty of the impending anesthetic and surgical procedures, past experience, and a patient's personality. Anxiety is an unpleasant emotion and may cause patients to avoid a planned operation (23). It also may adversely influence anesthetic induction and patient recovery (24_25). Various interventions to reduce preoperative anxiety, including pharmacological anxiolysis, provision of information, distraction, attention focusing, and relaxation procedures are recommended. (26,27) one of these pharmacological anxiolysis is valeric syrup that contains extracts of valerian and Melissa officinal's (Lemon balm). Valerian is an herb with sedative and hypnotic properties and contains valepotriate and valeric acid. Lemon balm is an another herb that used medicinally as an herbal tea, or in extract form. Lemon balm extract was identified as a potent in vitro inhibitor of GABA transaminase, which explains anxiolytic effects. In this study we evaluate the effect of valeric syrup on preoperative anxiety compared with diazepam and placebo. Diana M. Taibi et al evaluated the effect of valerian as a sleep aid and an anxiolytic medicine.

they found that valerian is a safe herb associated with only rare adverse events.(28)

E. Ernst evaluated the effect of valerian extract(50–150 mg) on anxiety compared with diazepam (2.5–7.5 mg) and placebo. All three groups showed marked decreases in doctor- and self rated anxiety at the end of the treatment phase.(29)

Ali Movafegh et al evaluated the effect of oral Pass flora incarnate (500 mg) on preoperative anxiety 90 min before the surgery. The NRS anxiety scores were significantly lower in the pass flora group than in the control group (p = 0.001).(30)

Janet Esther et al evaluated the effect of tagara (Indian valerian) 500 mg on preoperative anxiety two days prior to surgery compared with aristolochia officinal's. Mean arterial blood pressure and heart rate was lesser in tagara group. They showed that effective control of preoperative anxiety is possible with tagarati compound.(31)

Another study evaluated the effects of a combination containing valerian and lemon balm taken in various doses. Some benefits were seen with doses of 600 mg or 1200 mg three times daily, but the highest dose (1,800 mg 3x daily) actually

appeared to increase anxiety symptoms during a stressful situation.(32)

Ali Rezaei et al evaluated the anti-anxiety effect of extract of *Nardostachys Jatamansi* (400mg/kg that include Valernal 13% and Valerenic acid 26/5%) compared with diazepam (0.5mg/kg). They found that *Nardostachys jatamansi* extract^s anti-anxiety effect is more than diazepam.(33)

According to our results since mean vas score, mean diastolic blood pressure and mean heart rate was lower in valeric group after intervention and there was no significant difference in mean hemodynamic changes (systolic blood pressure, diastolic blood pressure and heart rate) between three groups ,valeric syrup is an appropriate option to preventing preoperative anxiety compared with diazepam.

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