



Comparison of the Effect of Citrus Aurantium and Oxazepam on the Preoperative Anxiety of Patients Candidate for Coronary Artery Implantation Operation

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ABSTRACT

Preoperative anxiety is the general complains of the majority of patients referring to hospitals for operations. Considering the anti-anxiety effects of some herbs, this study compares the effect of citrus aurantium and oxazepam on the preoperative anxiety of patients Candidate for coronary artery implantation operation. This is a single blind trial. A total number of 66 patients (aged 40-56) who referred to Faghihi and Namazi hospitals, Shriaz for coronary artery implantation surgery were selected and randomly grouped in 2 groups. Three days before operation, the cases of group 1 (33 cases) received 1ml (2 gr) citrus aurantium on daily basis while the cases of group 2 (33 cases) received 1 oxazepam pill (1mg) in one oral dose. The anxiety of all cases was measured using Spielberger questionnaire. Data was analyzed using SPSS 12 as well as independent and paired t-tests. The citrus aurantium group showed a decreased anxiety compared to the oxazepam group but this decrease was not significant [$p=0.23$]. Citrus aurantium and oxazepam have the same effect on anxiety. Therefore, both can serve as an effective drug for mitigating preoperative anxiety.

Key words: Anxiety, Citrus Aurantium, Coronary Artery Implantation, Oxazepam Pill, Operation

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INTRODUCTION

Every year tens of millions patients undergo different surgery operations. Operation anxiety triggers different psychological and physiological reactions including anxiety and fear [1]. It can threaten the health of patients through making changes in the physiological functions of the body and may has negative effects on the relief of patients and tissue healing [2]. Ferreira et al estimated the incidence of preoperative anxiety in adults to be 8-11 percent [3]. If this anxiety is not timely diagnosed and treated, it will cause stress

accompanied by decreased satisfaction with pre and post-operative cares [4], increased need to anesthesia drugs [5,6], increased post-operative pain, increased demand for painkillers [7-9], delayed relief and discharge and increased mortality [10]. Reduced pre-operative anxiety can improve operation results, reduce hospitalization duration and minimize life style disorders. Therefore, the reduction, or elimination, of anxiety demands mental, psychological and drug-therapy supports. Anxiety is one of the most important nursing diagnoses in cardiovascular patients because the patients experience changes in their health status, personal function and socio-economic status, and importantly they are threatened by death [4]. Krannchi et al estimated the incidence of cardiovascular pre-operative

anxiety to be 34% [11]. Different strategies are used to reduce pre-operative anxiety. Anti-anxiety drugs are one of the most important strategies. Currently, Benzodiazepines are the most typical anti-anxiety drugs of which diazepam and oxazepam are the most frequently used drugs consumed orally [21]. Some medicinal herbs are argued to have anti-anxiety and relaxing effects and can be used to mitigate anxiety [31]. Moreover, Iran land benefits from diverse plant coverage on the one hand and Iranian people are interested in medicinal herbs based on their culture. Therefore, the effectiveness of the medicinal herbs can be evaluated by conducting clinical research [41]. It should be noted, however, that the background of the use of such herbs is used only as a clue in the way of new studies [5]. Citrus aurantium is a widely used indigenous medicinal herb in Iran which is used in treating selective hysterical amnesia, anxiety and epilepsy and facilitates cardiovascular health [61]. Lehner et al showed in their study that citrus aurantium essence has anti-anxiety effects [71]. There is no study on the effect of citrus aurantium essence on pre-operative anxiety of candidate patients for coronary artery implantation operation. Therefore, this study aims to compare the effect of citrus aurantium and oxazepam on the pre-operative anxiety of coronary artery implantation operation.

MATERIALS AND METHODS

This is a single blind trial with randomized classification. To this end, the approval of the ethical committee of the Sadugi University of Medical Sciences, Yazd (reg. code: p/71/1/104946) and Shiraz University of Medical Sciences were first obtained. Then, 37 candidate patients for coronary artery implantation operation (aged 40-56) who referred to Shiraz Faghighi and Namazi hospitals from October 2011 to April 2012 were included in the study. They were randomly group in citrus aurantium-receiving and oxazepam-receiving groups. At the end of study, a total number of 66 cases were remained. Sample size was selected based on previous studies and from the following relation:

$$N = (Z\alpha/2 + Z\beta)^2 \times 2 \times \delta^2 / (X1 + X2)^2 = 33$$

$\alpha = 0.05$, $\beta = 0.20$, $X1 = 134$, $X2 = 120$, $\delta = 20$,
 $N = 33 \times 2 = 66$

It should be noted that the cases of each group were not in contact with the cases of the other group. Inclusion criteria were as follows: candidate patients for coronary artery implantation

operation (non-urgent patients), age=40-56, full skill in Farsi language, literacy and consciousness. Exclusion criteria were: cardiovascular operation background in near relatives, instable physical status including acute problems such as arrhythmia and pulmonary edema, mental-nervous problems, anxiety disorders, background in receiving anti-anxiety and relaxing drugs, malignancy, medicine and paramedicine crew and dialysis patients. Finally, 7 cases were excluded from study due to the cancellation of operation and increased anxiety level at the night before operation and 33 cases were remained in each group.

The remained cases were explained about the method of study and their consent on the participation in this study was obtained in writing. Then, all cases were provided with sufficient instructions on filling study questionnaire. Demographic form was first filled by the aid of the researcher and via interview. The assistant researcher was not aware that which case belongs to which group. Spielberger anxiety measurement questionnaire was filled by cases 3 days before operation. Then, intervention was done in both groups as follows:

1- citrus aurantium-receiving group:

Three days before the operation, the cases received 10 cc (2 gr) of citrus aurantium essence by the researcher on daily basis. Citrus aurantium essence was solved in a glass half-filled by water and the cases received the solution as one dose within a period starting from after launch to two hours before dinner. According to the relevant doctor's prescription, the cases of this group received no oxazepam at the last night before operation. Last night before operation, the anxiety questionnaire was filled by the cases of this group in the presence of the assistant researcher. Two cases were excluded from study, in accordance with the order of ethical committee, due to having high anxiety. They received oxazepam according to the relevant doctor's prescription. In addition, 3 cases of this group were excluded from study due to the cancellation of operation.

The citrus aurantium essence used in this study was the product of Gol Gatre Essence Company, Shiraz who had announced that it is ready to provide concentrated essences required by this study. According to relevant standards, 5 liters citrus aurantium essence was derived out of one kg of fresh citrus aurantium.

2- Oxaezpam-receiving group

Last night before operation, the cases of this group received orally one oxaezpam pill (10mg) in one dose by the researcher. Two cases of this group were excluded from the study due to the cancellation of operation.

In the next morning, all cases of both groups refilled Spielberger questionnaire in the presence of assistant researcher. To decrease environmental impacts, the cases were asked to fill the questionnaire lonely in a quiet room in order to fill it in a soundless environment as much as possible. Each time, the filling of the questionnaire took 20 minutes. The validity and reliability of Spielberger questionnaire in Iranian population have been confirmed. This questionnaire has 20 items scaled as very low, low, high and very high and is scored as 1, 2, 3 and 4, respectively. The total sum of items ranges from 20 to 80 [81]. Following data collection, they were analyzed by SPSS 12 and chi-square, and independent and paired t-tests.

RESULTS

In this study, the trials were grouped into two groups with the mean age of 57.16±6.427 and the standard deviation of 85.54±7.155. Chi-square test showed no significant difference in age between the groups [p=0.61]. In addition, independent t-test showed no significant difference in pre-intervention anxiety between the groups [p=0.73]. This means that in the groups were homogenous the beginning of study (table 1).

DISCUSSION

This study evaluated the effect of citrus aurantium essence on the pre-operative anxiety of candidate patients for coronary artery implantation operation and compared results with the effect of oxaezpam. There was a limited comparison between the results of this study and other studies due to the limited similar sources. Therefore, the comparisons are inevitably beyond the main frame of the study results.

Table 1. mean anxiety score and its variations in citrus aurantium and oxaezpam groups before and after intervention

group / time	Citrus aurantium (mean±STD.)	Oxaezpam (mean±STD.)	p-value
Before intervention	49.45±5.16	47.39±3.93	0.70
After intervention	47.39±4.88	46.55±4.29	0.29
variation	3.46±2.06	4.61±0.84	0.23

According to table 2, there is a significant difference in mean anxiety scores before and after intervention in citrus aurantium group [p=0.00] while it is not significant in oxaezpam group [p=0.29] (table 2). In addition, there is no significant difference in anxiety variation between the groups (table 1).

Table 2. mean anxiety score before and after intervention in citrus aurantium and oxaezpam groups

group / time	Before intervention (mean±STD.)	After intervention (mean±STD.)	p-value
Citrus aurantium	49.45±5.16	47.39±4.88	0.00
Oxaezpam	47.39±3.93	46.55±4.29	0.29

According to the results of this study, the post-intervention mitigation of anxiety was higher in citrus aurantium group than oxaezpam group, but the difference was not significant. This implies that both citrus aurantium and oxaezpam can mitigate anxiety. Our results agree with those of Akhlaghi et al who compared the effect of citrus aurantium and oxaezpam and showed that both were effective in mitigating anxiety [91]. Moreover, our results indicate that mean anxiety score decreased in citrus aurantium group after intervention with a significant difference compared to pre-intervention. Some studies have shown that citrus aurantium has sedative and anti-anxiety effects [32-91]. Despite the information available in some literature and research, such as the studies of Haavik et al, Kroll et al and Berbel et al, about the effect of benzodiazepines, including oxaezpam, on anxiety, this study showed that although oxaezpam mitigated anxiety in the studied cases, this mitigation was not significant [21, 42, 52]. It seems that the reason of such non-significant effect of oxaezpam may be traced in operation type. Our study showed that about 74% of cases experience a relative high anxiety. The study of Kroll et al, Haavik et al and Berbel et al evaluated 60 candidates for breast operation, 246 candidates for selective operations and 207 candidates for general operations, respectively. In such operations, the candidate cases experience lower levels of anxiety compared to the operations associated with critical organs such as the heart or the brain. However, the sample size of Kroll et al study is very close to that of our study [12, 25, 42]. Another reason may be the difference of sample size between other studies and ours.

CONCLUSION

This study indicates that both citrus aurantium and oxazepam have almost the same effect on the preoperative anxiety of candidate patients for coronary artery implantation operation. Therefore, citrus aurantium can be used to mitigate anxiety in such patients. The interest of Iranian people in medicinal herbs highlights the importance of this study.

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