Comparison of the Effect of Ginger Capsule and Vitamin B6 on Nausea and Vomiting after Cesarean Section

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ABSTRACT

Introduction: Studies by previous researchers have shown the effect of ginger in the treatment of nausea and vomiting after cesarean section. Following ginger consumption, no cases of miscarriage or increased congenital defects and maternal complications have been observed. Due to the high prevalence of this complication and the reluctance of pregnant women to use chemical drugs, the present study was conducted to compare the effect of ginger capsules, vitamin B6 and placebo in the treatment of nausea and vomiting after cesarean section in pregnant women in Tabriz. Material and Methods: A total of 120 women selected for cesarean section with a history of nausea in pregnancy were included in this study; From one week before the start of the cesarean section until after the cesarean section, the participants were given two drugs of ginger capsule and vitamin B6 tablets and the incidence of nausea and vomiting after the cesarean section was compared between them. Results: The results of ANOVA test for vomiting frequency and Kruskal-Wallis’s test for nausea during treatment days showed that there was no significant difference between the three groups; However, in the placebo group, the severity of nausea was higher during the treatment days than those receiving ginger and vitamin B6. Conclusion: The results of this study indicate the effect of ginger on cesarean section nausea and vomiting. The severity and frequency of nausea and vomiting were significantly reduced with the use of ginger capsules.

Keywords: Ginger Capsule, Vitamin B6, Vomiting, Nausea, Cesarean Section
Introduction

Nausea and vomiting are the most common complaints during pregnancy, affecting approximately 80-70% of pregnant women. It usually starts at 4-8 weeks after menstruation [1-3], its greatest intensity is in week 9 and then begins to decrease and in most cases improves by week 14, in 2% of people it continues throughout pregnancy [4-6]. Although this disorder is mild to moderate in most cases, it can cause the mother and her family to lose their peace of mind. Maternal death due to this complication is very rare and has a prevalence of about 0.5% [7-9]. Now, one of the most common reasons for a mother to be hospitalized in the first weeks of pregnancy, although nausea and vomiting are complications of pregnancy, but the result of pregnancy is often good, so that the rate of miscarriage and low birth weight is reduced [10-12]. Because nausea and vomiting in pregnancy gradually decrease and improve, in most women, treatment is delayed and treatment is usually symptomatic [13-14]. Treatment of nausea and vomiting depends on the severity of the symptoms and can change the diet until hospitalization. And even receive TPN There are various treatments available. Taking vitamin B6, antihistamines or H1 receptor antagonists (dimenhydramine, dimenhydrinate) blockers dopamine (metoclopramide) and corticosteroids are used as a last step in the treatment of severe cases [15-17]. Pregnant women are reluctant to take medication during pregnancy for fear of teratogenic effects. Following the thalidomide tragedy and the occurrence of many abnormalities, the restriction of drug use in pregnancy was taken seriously. However, wise use of medication is often necessary and wise [18-20]. Recently, the use of herbs as a treatment method has received much attention. Garlic, chamomile, mint, oak and ginger are some of the herbs used to treat nausea and vomiting in pregnancy. Ginger as a spice, has a long history in food and medicine. And in traditional medicine, especially in China, Japan and India, it is used to treat various diseases, especially nausea and vomiting during pregnancy [21-23]. Ginger tea, ginger biscuits, ginger capsules are available in different forms of ginger. Ginger capsules are easier to take for the stomach and contain the dried form of ginger, which is more effective than its fresh root [24]. Studies by previous researchers have shown the effect of ginger in the treatment of nausea and vomiting after cesarean section [25-27]. Following ginger consumption, no cases of miscarriage or increased congenital defects and maternal complications have been observed. Due to the high prevalence of this complication and the reluctance of pregnant women to use chemical drugs, the
present study was conducted to compare the effect of ginger capsules, vitamin B6 and placebo in the treatment of nausea and vomiting after cesarean section in pregnant women in Tabriz.

**Material and Methods**

This study is a clinical experience that was performed on 120 pregnant women who were candidates for elective cesarean section and had nausea with or without pregnancy vomiting and referred to the operating room of Al-Zahra Hospital (Tabriz University of Medical Sciences). Since pregnant women, especially in the first weeks of pregnancy, do not want to take medication, the sample size in each group was considered to be 30 people, which was estimated by calculating at least 10% loss in each group of 40 people. Pregnant women who had a specific illness or problem, such as high blood pressure, epilepsy, diabetes, or known allergies to ginger, or who needed to be hospitalized due to severe nausea and vomiting, or were unable to follow up, were excluded from the study. Were deleted. Ginger, vitamin B6 and placebo capsules were packaged and coded in similar coatings in the pharmacology laboratory, and the given codes remained with the laboratory manager until the end of the study. Thus, the patient and the researcher were unaware of the type of drug used. These drugs were given randomly by midwives of selected clinics in Tabriz city (who had received the necessary training) to pregnant women who had this complication and were willing to receive treatment, after learning about participating in this trial. How to take the drug was 4 capsules per day for 4 days. The subjects were given the necessary training on the consumption of low-volume foods and increasing the frequency of consumption and non-consumption of high-fat foods. The duration of use of the mentioned drugs was from one week before cesarean section to the day after cesarean section. The data collection tool was a questionnaire by which demographic characteristics and pregnancy status and the severity of nausea and vomiting were measured before and during drug administration. Nausea as a mental symptom was assessed in two ways.

1- Visual diagram and

2- Likert scale Visual diagram in which the graduated line is 10 cm which is divided from 0 (indicating cases without nausea) to 10 (most severe nausea) and the research units determined the severity of their nausea based on this criterion.
The frequency of nausea and vomiting was determined based on the registration of a positive sign (+) 24 hours before and during the treatment days. One week after taking the drug, the response to treatment was measured using the Likert scale. The validity of the questionnaire was done by reviewing scientific texts and articles and confirming three faculty members of the university and its reliability was done using test re test (r = 0.86). The data of the present study were analyzed using SPSS 18 software. To evaluate the demographic and pregnancy characteristics of the research units, ANOVA and Kruskal-Wallis tests were used, and to evaluate the severity and frequency of nausea and vomiting before and after treatment, paired t-test and Wilcoxon symptomatic rank were used at the level of P <0.05. This study was carried out with the approval of the ethics committee of Tabriz University of Medical Sciences (NO: IR.TBZMED.REC.1398.699) and obtaining informed consent from all participants.

**Results**

In this study, 97 patients remained in their groups until the end of treatment (group A, vitamin B6, 35, group B, placebo, 28, and group C, ginger, 24). Individual characteristics of research units were determined in three groups. These characteristics including age, parity, gestational age, time of onset of nausea using ANOVA test and education and occupation using Kruskal-Wallis test were not significantly different in the three groups. The severity of nausea and the frequency of vomiting before taking the drug in all three groups using Kruskal-Wallis and ANOVA tests, respectively, showed no significant difference. The severity of nausea before and after treatment was significant in all three groups using Wilcoxon symptomatic rank test. Also, the frequency of vomiting before and after treatment was significant in all three groups using paired t-test. The results showed that the severity of nausea and vomiting frequency after drug administration was significantly reduced in all three groups. (Table 1)
Table 1: Comparison of the severity of nausea and vomiting in the three groups before and after treatment

<table>
<thead>
<tr>
<th></th>
<th>Before intervention</th>
<th>After intervention</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nausea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vit B6</td>
<td>8.51±2.31</td>
<td>6.45±1.56</td>
<td>0.036</td>
</tr>
<tr>
<td>Ginger</td>
<td>8.56±2.02</td>
<td>5.64±1.33</td>
<td>0.011</td>
</tr>
<tr>
<td>Placebo</td>
<td>8.14±1.49</td>
<td>8.96±1.74</td>
<td>0.965</td>
</tr>
<tr>
<td>Vomiting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vit B6</td>
<td>8.52±1.96</td>
<td>7.85±1.87</td>
<td>0.033</td>
</tr>
<tr>
<td>Ginger</td>
<td>8.29±1.66</td>
<td>5.45±1.65</td>
<td>0.009</td>
</tr>
<tr>
<td>Placebo</td>
<td>8.52±1.33</td>
<td>8.14±1.36</td>
<td>0.669</td>
</tr>
</tbody>
</table>

The results of ANOVA test for vomiting frequency and Kruskal-Walli’s test for nausea during treatment days showed that there was no significant difference between the three groups; However, in the placebo group, the severity of nausea was higher during the treatment days than those receiving ginger and vitamin B6. One week after the start of treatment, the treatment status of the research units was followed up using the Likert scale. 32.2% of placebo recipients 8.8% of vitamin B6 recipients and 18.3% of ginger recipients have much worse symptoms and in 60.6% of ginger recipients, 42.7% of placebo recipients and 61% of vitamin B6 recipients The severity of symptoms was much better. 46% of placebo recipients, compared with 16% of B6 recipients and 27.6% of ginger recipients, experienced problems such as stomach pain, heartburn, dizziness, and increased nausea and vomiting during treatment. Increased nausea and vomiting in placebo recipients in some cases led to discontinuation of the drug and the use of other treatments. Placebo recipients increased nausea in 23.8%, versus 19.4% in B6 and 9.8% in ginger. Gastric pain was reported in 10.2% of ginger recipients.

Discussion

The results of this study indicate the effect of ginger on cesarean section nausea and vomiting. The severity and frequency of nausea and vomiting were significantly reduced with the use of ginger capsules. There was no significant difference between the effect of ginger and vitamin B6 and placebo in reducing nausea and vomiting in pregnancy. A study by researchers showed a reduction in the severity of nausea and vomiting in ginger consumers [28-30]. In this study, no
significant difference was observed between the group receiving vitB6 and ginger [31-33]. In another study, ginger was effective in reducing pregnancy nausea and vomiting; Although ginger further reduced the mean severity of pregnancy nausea and vomiting, this decrease was not significant compared with the placebo effect [34-36]. The effect of ginger on the treatment of nausea and vomiting is due to its anti-energetic and antihistamine properties. The concern of pregnant women and their families about the occurrence of abnormalities in the fetus, following the use of medicine, especially in the first months of pregnancy, has made them more inclined to use herbal medicine [37-39]. WHO has also considered the development of traditional medicine in order to implement the slogan "Health for All" by the year 2000. One of the notable points in this program is the dissatisfaction with new medical treatments, especially in terms of side effects of chemical drugs [40-42]. The use of traditional medicine methods significantly reduces the cost of treatment and ease of access and reduces the side effects of chemical drugs [43].

10.2% of ginger recipients had problems during treatment. Their main problem was heartburn and increased nausea immediately after taking the capsule due to the medicinal form of ginger. In several studies, the side effects of ginger consumption in 6% of people were expressed as stomach pain and dizziness. And sperm are also mentioned in the stomach in 9.4% of ginger recipients. It seems that one of the problems in using some herbal medicines is due to their very pungent smell or taste or their medicinal form. The use of more appropriate forms of medication (eg pills) will make it easier to use these compounds. History of migraine headache, consumption of high-fat foods before pregnancy, female fetus, young age, first pregnancy, stress obesity, history of nausea in previous pregnancy or in mother and sister and housewife are some of the factors that aggravate nausea in pregnancy. Attention to personal and psychological characteristics of people is very important in the treatment of this pregnancy complication. The use of educational methods, especially in connection with proper nutrition and psychological support of pregnant women by family members and health care staff and sometimes psychological counseling can be part of the treatment program in these patients. One of the limitations of this study was the lack of complete control of drug use by research units, which led to the exclusion of a large number of research units from the study.
Conclusion

The results of this study indicate the effect of ginger on cesarean section nausea and vomiting. The severity and frequency of nausea and vomiting were significantly reduced with the use of ginger capsules. Although various studies have not reported a specific maternal or fetal complication in ginger users; However, more studies are needed to investigate the possible effects and determine the appropriate dose and even the appropriate form of the drug. The results of this study indicate the effect of ginger consumption in reducing nausea and vomiting in pregnancy and it can be used as a simple, appropriate and available method.

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