

## The Effect of Acupressure on Nausea and Vomiting during Pregnancy

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**Abstract: Background:** Nausea and vomiting are common gastrointestinal disorders in early pregnancy. Considering the unknown adverse effects of most drugs used to control pregnancy induced nausea and vomiting, alternative treatments such as vitamin therapy, herbal medicine, and acupuncture and pressure medicine have been suggested. We aimed to assess the effect of acupressure on nausea and vomiting during pregnancy in a sample of Iranian women. **Methods:** In this quasi-experimental study of 195 pregnant women with gestational age less than 16 weeks of pregnancy care clinic in Shiraz hospitals for 7 days were included in the study. They were randomly divided into three groups: acupressure, placebo and control group. In the first 3 days of the third group received no medication. For the second stage of the fourth day, with pressure on the p6 wristband acupressure group and the placebo group in both p6 wristbands with a button on the front of the pack. And the control group did not receive any intervention. Gathering data, Rhodes scale that was completed by the individual was important. **Results:** There was no difference between the 3 groups with respect to the number of child births, the number of children, mother's age, or the gestational age before starting the treatment. In the treatment groups, symptoms of nausea and vomiting significantly decreased after starting the treatment. The severity of nausea as well as the frequency of vomiting reduced significantly after starting the treatment in treatment group 1 compared with the other two groups. Moreover, the severity of vomiting was significantly different in treatment group 1 after the treatment. **Conclusion:** Pressing the pericardium 6 point is effective in reducing the severity of nausea and the frequency of vomiting. [Sedighe Frouhari, Seyede Zahra Ghaemi, Azam Roshandel, Zeinab Moshfegh, Parisa Rostambeigy, Roghaie khoshkholgh. **The Effect of Acupressure on Nausea and Vomiting during Pregnancy.** *Researcher* 2014;6(6):27-34]. (ISSN: 1553-9865). <http://www.sciencepub.net/researcher>. 7

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### 1. Introduction

Most women experience minor disorders during pregnancy and about 20% of gastrointestinal disorders (1, 2). The most common are nausea and vomiting, so that approximately 70 to 90 percent of pregnant women in early pregnancy, it will experience a 6-8 week gestation 12-14 weeks of pregnancy, starting at its peak appears (3). Significant effects were nausea and vomiting in pregnancy and can severely damage the family, society and the individual and social practices affect quality of life (4). Also have adverse effects on family life, causing depression in people. Economic impacts - social workers and housewives from wasting time on the 8.6 million hours and 5.8 million hours. (5) Nausea and vomiting of pregnancy with multiple consequences, including the threat of miscarriage, fetal and neonatal mortality during, Down Syndrome, nervous system abnormalities, low birth weight baby, premature delivery is associated with malnutrition and weight loss (6-8). The use of non-drug treatments due to lack

of attention placed side effects of treatment such as vitamins, behavioral therapy, acupuncture, and acupressure cited (9). Acupressure is part of traditional Chinese medicine and acupuncture is actually one of the branches. Where there is no need to use needles (10). A growing desire for the use of this medicine in obstetrics activities there, the World Health Organization says: Sufficient evidence to confirm the effects of acupressure is to be used as part of curing (11). Acupressure to reduce stress and fatigue, physical comfort and satisfaction as well as reduce the costs associated with the disease (11-13). Over 2,000 pressure points on the body and there are 200 points that can be used for treatment. Acupressure way to stimulate energy channels below the skin surface. It causes a change in the energy balance of the body and restores health impact. (11). Wu et al. controlled electrocardiography changes and cardiac echoes on the acupressure pericardium neiguan point. Most used to treat nausea and vomiting in acupressure point is neiguan (14). 2-3 at

this point a finger width above the inner wrist and the flexor tendon. (Figure 1). A survey conducted in 1994 by belluomini and colleagues have been effective in reducing nausea and vomiting in early pregnancy it is displayed. But other research partners obrien and efficiency aims to reduce the pressure on the p6 point of relieving the symptoms of nausea with or without vomiting during pregnancy, they show that in the placebo group, control and treatment of patients with any statistically significant difference does not exist. (3). In another study by Montazeri et al in 2000 as evaluating the effectiveness of acupressure on nausea and vomiting after cesarean section in pregnant women in Iran. In this study, 100 pregnant women were divided into two groups, acupressure and control groups. Results showed that the effect of acupressure in reducing nausea and vomiting during cesarean delivery but during the procedure and acupressure reduces postoperative vomiting during and after surgery to reduce the severity of it. (15). Also the mud and colleagues in their study to determine the effect of acupressure on nausea and vomiting during pregnancy Wrist 75 pregnant women with nausea and vomiting concluded that although the difference between the average and vomiting in the placebo group than the control 's. But this is not a significant difference between the placebo groups (16). Therefore, considering the growing tendency to use acupressure to treat various diseases as well as therapies for nausea and vomiting due to moderately severe limitations and ease of use, low cost and safe medicine and its actual role in the treatment of nausea and vomiting of pregnancy on we aimed to study the effect of acupressure on nausea and vomiting in women attending prenatal care clinics, Hafezieh and Zainabiyya Hospital in Shiraz.



Figure 1: Neiguan location points

#### Methods:

This Ouasi Experimental study was performed on 195 pregnant women attending prenatal care clinics and Hafezieh and Zainabiyya Hospital in Shiraz. The inclusion criteria included: gestational age less than 16 weeks - nausea with or without vomiting - a willingness to participate in research - single pregnancy.

Exclusion criteria were as follows:

Diagnosis of molar pregnancy - twin - multiple entopic pregnancy by ultrasound - knowing threatened abortion - pyelonephritis - Gastroenteritis - Appendicitis - Severe vomiting in pregnancy - anti-emetic drugs, iron tablets pickup antibiotics for at least the past three days - the inflammation, fracture Neiguan open ulcers or tumors in the hand and fingers 5 - pregnancy after infertility and abnormal BMI range. Monitoring data collection tool was a questionnaire including questions concerning demographic was 9.

RHODES questionnaire have four questions and each question has 5 items, each item is scored from zero to four is considered. (17) The first question relates to the frequency of nausea - a second question related to the severity of nausea - The third question relates to the fourth question relates to the severity of nausea and vomiting. Reliability and validity of this scale in research mode light freighter  $R = 0.85$  has been determined (18). The survey questionnaire is measured again by professors and experts. The scientific utility of the TEST-RESET confidence interval was 10 days, which has shown good reliability results. Thus, the researcher in charge of the letters refers to subjects who were eligible to be selected in an interview with them after completion questionnaire was done. So that clients on Saturday, Monday and Wednesday, respectively acupressure group, placebo and control groups. All groups were trained on a diet. 3 days pre-intervention questionnaire was completed by embankments known then how to use the sea band wrist strap with push button was required to teach them. (Figure 2). The ankle strap has an embossed buttons on the semi-circular inner part that does put pressure on Neiguan point.

Treatment group 1 (Acupressure )was asked to complete the questionnaire twice daily at 6 am and 6 pm from day 1-3 of the study and four times daily (at 7 and 11 am, and 3 and 7 pm) from day 4-7 of the study. They were asked to squeeze their pericardium 6 meridian point located on the anterior surface of the forearm, between the tendons of the musculus flexor carpi radialis and musculus palmaris longus, 2 inches proximal to the distal wrist crease, for 10 minutes, and mark their signs at 6 a.m. and 6 pm in their questionnaires.

The women in treatment group 2 were asked to complete the questionnaires from the first to the third day of the study and squeeze the placebo point located on the palmar surface of the hand, proximal to the head of the fifth metacarpal joint for 10 minutes from day 4-7 of the study at 7 and 11 am, and 3 and 7 pm, and mark their signs in the questionnaire at 6 am and 6 pm.

We had two treatment groups in order to compare two

different acupressure points to see which yielded a better result.

The control group (3) received no intervention. They completed their questionnaires during the 7 days of the study submitted them to the relevant centers.



Figure 2: use the wrist strap in bimanual

Data regarding the mean severity of nausea, the frequency of vomiting, and the severity of vomiting in all the three groups were analyzed

separately before and after the seven-day intervention. Data regarding the fourth day of intervention was excluded from analysis since it takes at least 24 hours for the pressure medicine to show its effects.

Data were analyzed using SPSS software, version 16. Paired t test, one-sided analysis of variance (ANOVA), and Scheffe's multiple comparison were used as appropriated.

**Results:**

195 pregnant women participated in this study. The findings in the demographic characteristics showed that the majority of the investigated sample, 37.5% of education at the middle and high schools, 50.8% participants, 34.4% in the previous pregnancy history of nausea and vomiting were 17.4% gestation to 7 weeks, and the majority 60.5% were willing to get pregnant with the couple's wishes. There was no significant difference between the three groups with respect to age, parity, gestational age, or the number of children.

Table 1: The mean number of vomiting, nausea, vomiting, and severe vomiting before and after treatment in the acupressure group

| Type of variable<br>Time | Frequency of nausea | Severity of nausea | Number of vomiting | Severity of vomiting |
|--------------------------|---------------------|--------------------|--------------------|----------------------|
|                          | X ± SD              | X ± SD             | X ± SD             | X ± SD               |
| Before treatment         | 1.83±1.34           | 2.29±1.25          | 1.90±1.63          | 1.88±1.48            |
| After treatment          | 0.84±0.68           | 0.94±0.63          | 0.64±0.54          | 0/76±0.64            |

The above table shows that the average frequency of vomiting, Severity of nausea, Number of vomiting, and severe vomiting after treatment in treatment group 1 (acupressure) compared to baseline varied substantially and show reduction. To compare

the variables before and after treatment paired-t-test was used to test the test result indicates a significant difference in some nausea, severe nausea, Number of vomiting and severe vomiting before and after treatment in the group, If (p <0.001).

Table 2: The mean number of vomiting, Severity of nausea, Number of vomiting, and severe vomiting before and after treatment in the control group

| Type of variable<br>Time | Frequency of nausea | Severity of nausea | Number of vomiting | Severity of vomiting |
|--------------------------|---------------------|--------------------|--------------------|----------------------|
|                          | X ± SD              | X ± SD             | X ± SD             | X ± SD               |
| Before treatment         | 2.23±1.29           | 2.53±1.20          | 1.65±1.48          | 1.52±1.53            |
| After treatment          | 2.29±1.26           | 2.60±1.24          | 1.66±1.49          | 1.52±1.49            |

The above table shows the average number of episodes of nausea before the start of treatment control group was 2.23 and 2.29 after treatment. To compare these variables before starting treatment paired-t-test was used to test a statistically significant difference in test results before and after treatment showed that the frequency of nausea. (P = 0.35).

Mean nausea before treatment (three days)

and 2.53 in the control group after treatment (three-second) is 2.60. Compared before and after treatment for nausea paired-t-test was used for testing. Statistically significant difference in the test results before and after treatment showed no nausea. (P = 0.35).

Average number of vomiting before treatment (three days) and 1.65 in the control group after treatment

(three second) is 1.66. To compare the number of vomiting before and after the test, paired-t-test was used. The test result is statistically significant difference in the number of vomiting was observed before and after treatment. (P = 0.77).

The severity of vomiting before treatment

(first three days) in the control group after treatment (three second) is 1.52. To compare the severity of vomiting before and after treatment, paired-t-test was used to test. Statistically significant difference in the test results before and after treatment showed severe vomiting. (P = 0.88).

Table 3: The mean frequency of vomiting, nausea, vomiting, and severe vomiting before and after treatment with placebo (control)

| Type of variable<br>Time | Frequency of nausea | Severity of nausea | Number of vomiting | Severity of vomiting |
|--------------------------|---------------------|--------------------|--------------------|----------------------|
|                          | X ± SD              | X ± SD             | X ± SD             | X ± SD               |
| Before treatment         | 1.96±1.08           | 2.88±0.75          | 3.18±0.80          | 3.03±0.73            |
| After treatment          | 0.85±0.53           | 1.16±0.37          | 1.06±0.24          | 1.20±0.32            |

The results in Table 3 show that the mean frequency of vomiting, nausea, vomiting, and severe vomiting after treatment in treatment group 2 (placebo) compared with before treatment shows a decrease. To compare the variables before and after

treatment were analyzed by paired-t-test test. The test results indicate no significant difference in the frequency of vomiting, nausea, vomiting, and severe vomiting before and after treatment in this group is a (p <0.001).

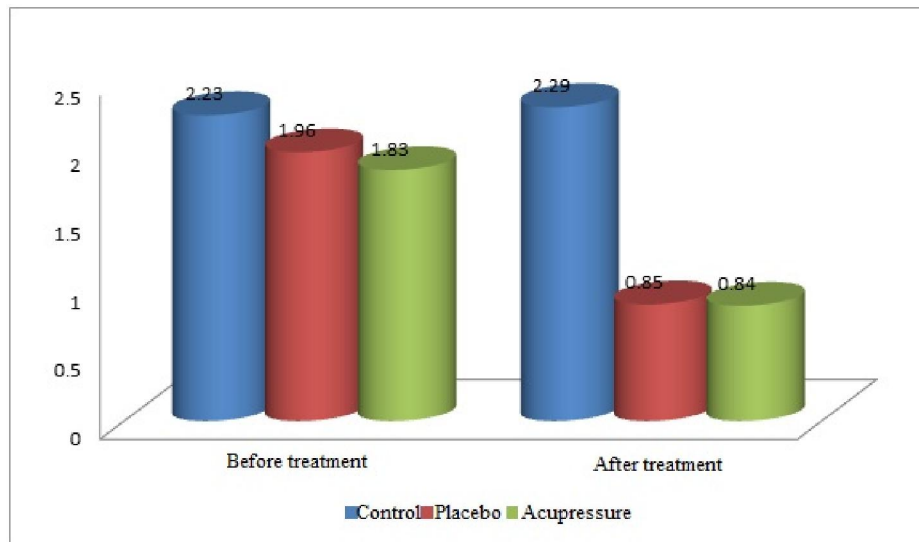


Figure 1: Comparison of average number of episodes of nausea in the treatment group before and after treatment

As shown in Figure 1 can be seen that the average frequency of nausea before treatment in three treatment groups: control, placebo acupressure is, 2.23, 1.96, and 1.83, respectively. To compare the frequency of nausea in the three groups before treatment, one-way ANOVA test was used. The test results showed no significant difference between groups in the frequency of nausea and groups before treatment there. (p = 0.15, F = 1.90). Then compare the baseline frequency of vomiting between all three groups were compared using multiple scheff 3 result from this test were: Significant differences between the acupressure group and the control group p = 0.17) and between acupressure treatment group (p = 0.85) and between the control group and the placebo group

(p = 0.40), there is a number of times before treatment vomiting.

To compare the frequency of nausea in the treatment group after treatment were analyzed using one-way analysis of variance; the test result was statistically significant difference between groups in the frequency of nausea and groups after treatment show. (p <0.001, F = 57.58). Then to compare the frequency of nausea after starting treatment among all three groups were compared using multiple scheff., Which in this test between groups (acupressure treatment control group) and (placebo control group) in the frequency of nausea and vomiting after treatment differences were significant (p <0.001).

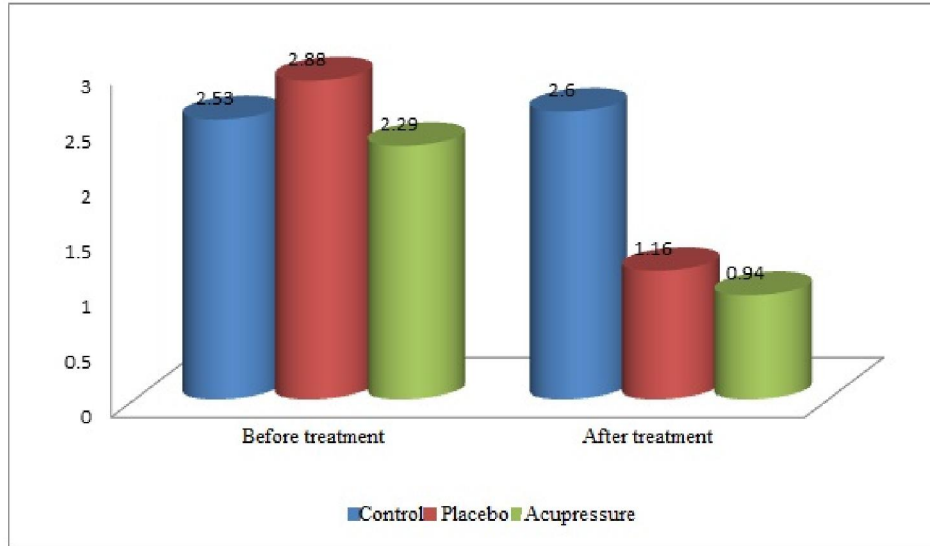


Figure 2: Comparison of the severity of nausea in the treatment group before and after treatment

As shown in Figure 2, it can be seen in the severity of nausea before treatment in three treatment groups: control, control pressure medicine is shown respectively. To compare the severity of nausea in the three groups before treatment, one-way analysis of variance was used the test results showed no significant difference in nausea between the groups and the groups before treatment. ( $p = 0.01$ ,  $F = 4.62$ ). Then, for comparison nausea before treatment between the three groups of multiple comparison scheff were the results statistically significant difference between treatment groups Acupressure control group ( $p < 0.001$ )) and between treatment

groups acupressure ( $p = 0.01$ ) and between control group and the placebo group ( $p = 0.001$ ) at baseline showed nausea.

The intensity of nausea in the treatment group after treatment, one-way ANOVA was used to test significant differences between the groups and the groups' nausea after treatment show. ( $p < 0.001$ ,  $F = 57.54$ ). After being treated for nausea and then compared between the three groups were compared using multiple scheff, which in this test between groups (acupressure treatment control group) and (placebo control group) after treatment differences in nausea was significant ( $p < 0.001$ ).

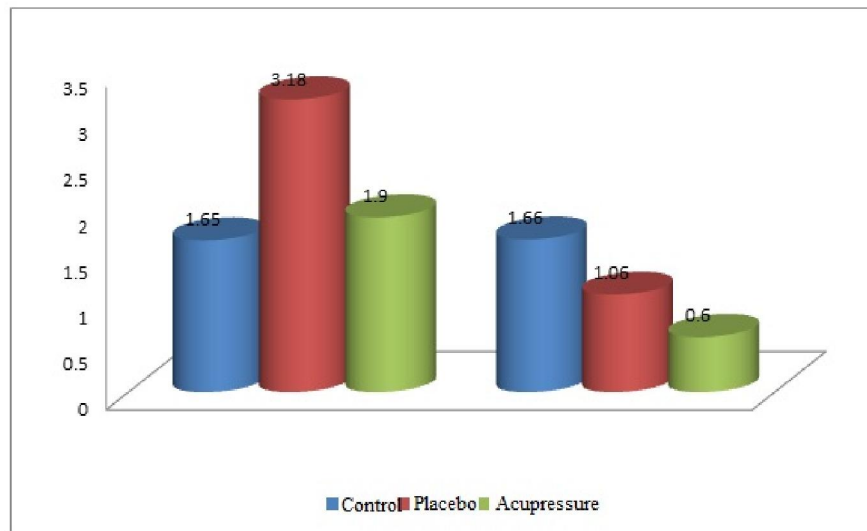


Figure 3: Comparison of mean number of vomiting episodes in the treatment group before and after treatment

As shown in Figure 3 can be seen that the mean number of vomiting before treatment in three

treatment groups: control, placebo acupressure, respectively, is shown. To compare the three groups



before treatment vomiting in a one-way analysis of variance was used the test results showed that significant differences between the groups and the groups vomiting before treatment there. ( $p = 0.001$ ,  $F = 24.19$ ). Then compare the number of vomiting before treatment between the three groups of multiple comparison scheff were the results statistically significant difference between treatment groups Acupressure control group ( $p < 0.001$ ) and between treatment groups acupressure ( $p = 0.01$ ) and between control group and the placebo group ( $p = 0.001$ ) in the number of vomiting before treatment showed.

To compare the number of vomiting after beginning treatment groups using one-way analysis of variance was the test result was statistically significant difference between groups in the number of vomiting after treatment in group shows. ( $p < 0.001$ ,  $F = 20.24$ ). Then to compare the number of vomiting after treatment between the three groups were compared using multiple scheff., Which in this test between groups (acupressure treatment control group) and (placebo control group) in the number of vomiting after treatment differences were significant ( $p < 0.001$ ).

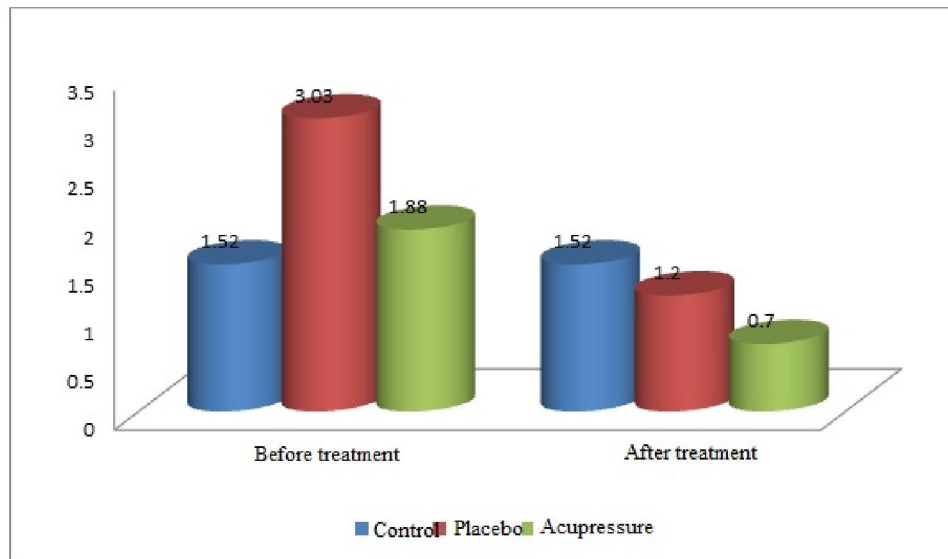


Figure 4: Comparison of the severity of vomiting in the treatment group before and after treatment

As shown in Figure (4) is observed severity before treatment vomiting in 3 groups: control, placebo acupressure, respectively, is shown. The intensity of these three groups before treatment vomiting in a one-way analysis of variance was used the test results showed no significant difference between groups in the severity of vomiting before starting treatment. ( $p = 0.01$ ,  $F = 23.89$ ). Then, for comparison nausea before treatment between the three groups of multiple comparison scheff were the results statistically significant difference between treatment groups Acupressure control group ( $p < 0.001$ ) and between the acupressure and placebo ( $p = 0.01$ ) and between the control group and the placebo group ( $p = 0.001$ ) at baseline showed severe vomiting.

To compare the severity of vomiting in the treatment group after treatment were analyzed using one-way analysis of variance the test result was statistically significant difference between groups in the severity of vomiting after treatment in group shows. ( $p < 0.001$ ,  $F = 57.54$ ). Then the intensity of

vomiting after treatment between the three groups were compared using multiple scheff in the test group (acupressure treatment control group) and (acupressure group and the placebo group) in the severely vomiting after treatment there was a significant difference ( $p < 0.001$ ).

### Discussion

Since 1986, numerous studies have been made on the effect of acupuncture or pressure medicine on the pericardium 6 point in the treating of nausea and vomiting in various clinical contexts. The findings support the suitability acupressure at both points, especially for treating nausea. For that purpose, various studies have been made concerning the effect of pressure medicine on nausea and vomiting in early pregnancy in different countries in the world, some of which, including that of Blumini and colleagues in 1994, support its effectiveness in reducing the nausea and vomiting of early pregnancy. However, other studies, including that made by Irvine and colleagues in 1996 report it as being ineffective

(19-21) Another study on the effect of pressure medicine on nausea and vomiting following caesarian section showed that pressure medicine reduces both vomiting during the operation and nausea and vomiting after surgery (22).

The studies made on the effect of pressure medicine on pregnancy induced nausea and vomiting have yielded differing results' but mostly show that this method can effectively be treated by pressure medicine.

The results of this study, the mean number of vomiting, nausea, vomiting, vomiting after the start of treatment and severity of treatment group 1 (acupressure) is reduced compared with before treatment. This medicine effective in reducing the problem of nausea and vomiting are common during pregnancy. Dundee is consistent with a study that showed that the pressure of his hand on the, vomiting, severe nausea, severe relatively reduced as much as 76% in the treatment group (23).

Also in this study, the mean number of vomiting, nausea, vomiting, vomiting after the start of treatment and severity of treatment group 2 (placebo) compared with before treatment shows a decrease is considered. Based on placebo also be able to relieve these problems, in the control group, according to the findings of no change in the situation has not improved. Perhaps the psychological pressure on the placebo effect can partly be involved in the relief of nausea and vomiting.

Therefore, the statistical difference in the results obtained in the above tables and charts, acupressure effect is effective in improving symptoms. As taken from the patient survey also confirms this view. Various studies show that acupressure significantly compared with placebo and control nausea and vomiting in pregnancy is effective (24-26)

The results Saberi et al (2012) showed that Iran acupressure in reducing nausea and vomiting of pregnancy is effective. Every few wrist without pressure on the p6 point in reducing the symptoms of nausea and vomiting of pregnancy, but the effect size to push the button on the Wrist p6 is not considered. (27).

The results showed significant differences between Bloumini and coworkers have shown that the treatment and control groups, so the reduction in the frequency and severity of nausea and vomiting was significantly higher in the placebo group. (28). Bayruther et al. also study more effective than the sham acupressure points Nygan pointed out. The results of and colleagues who have used electrical stimulation Nygan point also represents a significant difference between treatment and control groups, so that the acupressure point for reducing the severity of

nausea and vomiting than the control group was effective. (29).

The results of this study showed that acupressure reduced the severity of nausea in pregnant women with Nygan point of nausea and vomiting early in pregnancy. So taking advantage of this medicine include: 1- non-invasive technique than acupuncture; 2- no side effects; 3- simple ways off, comfortable and available; 4- Education comfortable This pregnant woman; 5- reducing costs relates to the treatment of nausea and vomiting in patients; 6- reduce the risks of anti-nausea drugs during the first trimester. It is suggested this method prenatal care and health centers by health workers, midwives, GPs and obstetricians Obstetrics responsible maternal health are to be used.

### Conclusion:

Acupressure on the pericardium 6 point is effective in reducing the severity of nausea in pregnant women. It is suggested that the method be taught to maternity care personnel as refreshment courses and be presented to patients complaining from nausea and vomiting in the form of pamphlets and health magazines. These measures might be effective in reducing the use of anti-nausea and anti-vomiting drugs and their posed risks during pregnancy.

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