

To evaluate the effects of acupressure by sea band on nausea and Vomiting of pregnancy.Sima khavandizadeh Aghdam^{1*} and Rafat kazemzadeh²

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Abstract: Nausea and Vomiting are the most common disorders of digestive system in the pregnancy. This is a clinical intervention study. Main object was to evaluate the effects of acupressure in reducing the severity of nausea and vomiting in primigravida women. In this study 100 primigravida women with nausea and vomiting and gestational age of 10-16 weeks were randomly selected and divided in two groups. 50 women in the acupressure group or control group and 50 women in the placebo group or cas group. Age, education, profession, BMI, gestational age, nausea and vomiting was matched both groups. Treatment in two groups was four days. In the acupressure group sea bands were placed on neiguan point on hands but in placebo group sea bands were placed on extra neiguan point on hands. there were not significant different in the severity of nausea and frequency of vomiting before treatment in two groups. Severity of nausea and frequency of vomiting decreased significantly after treatment in Acupressure group. This study showed that the acupressure (by sea-bands that is free of side effects and more economical) are effective in reducing severity of nausea and frequency of vomiting in pregnancy.

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Introduction: nausea and vomiting are among the most common disorders of digestion system in pregnancy period. It began from week four of the pregnancy and last until week twelve (1). This condition may last until second and third trimester in 20 percent cases, but usually this state end until the last days of first trimester (2).

If this condition last until second and third trimester it can resulted of hyperemesis. Gravidarum, psychological reasons, mole hydatiform or two baby birth...(3). Pregnancy vomiting and nausea usually is called morning sickness but it can occur at every time in a day(1,3). In 80 percent it occurs in day but in 3.1 percent it occurs in the afternoon or evening (2). Hormon changes resulted from pregnancy, psychological reasons, blood sugar fall and many other reasons are propounded among main reasons of this sickness (4). So we can decrease this unpleasant feeling with psychological protection and creating some new changes in daily diet (1). In Hyperemesis Gravidarum, vomiting is so intensive that can cause to electrolyte unbalance and can create metabolic problems and nutrition(5) . Intra venous liquid injections and prescription of vitamins are useful remedial orders in intensive nausea and vomiting in pregnancy period(6). but because the side effects of these medicines are known, Some investigations

revealed that diphen Hydramin consumption at pregnancy period can cause to lip and palate split in newborns and also using Fenotiazines can cause to structural anomalies in infants(7) so unmedicinal methods are invented to control the pregnancy vomiting and nausea (8).

One of these methods is stimulation of prickly medicine point of PC6. This point is located on the interval of two CNU above transversal wrinkle of hand on the direction of Median nerve between Palmaris longus and Flexor carpi Radialis. It was used of stimulation of PC6 point method in prickly medicine in remediation of vomiting and other stomach problems in traditional medicine.

Stimulation of forementioned point cause to releasing of a neurochemical substance that make the vomiting centre insensitive at the brain(9). Dundee in 1990 found that using acupuncture or prickly medicine on PC6 point in remedy of nausea and vomiting is influential(10). Norhem and his collaborators found in an study about pregnant women who were referred because of nausea and vomiting that stimulation of neiguan point decrease the intensity and duration of nausea and vomiting(12). But exact effect of this method isn't proved yet(11). So conducting much researches in this field is necessary because of excessive intension to use

acupuncture in remedy of different kinds of diseases such as nausea and vomiting(8,11).

By considering this subject that one of stimulation methods of neiguan point is using sea band(13) so the recent investigation had compared the effect of using pressure on neiguan point and out of this point by using sea band to remedy of vomiting and nausea in pregnant women, in two groups.

Investigation method: the recent investigation is a coincidental clinical study that was conducted on 100 women who were primigravida and their pregnancy

age was 10 to 16 week and were referred to sabalan hospital of Ardabil to take remedy for nausea and vomiting. They had special standards that were necessary for this investigation. The number of samples were determined 100 women by using the equation : $n = 1.96^2 \frac{\delta^2}{0.05}$. In this equation, δ^2 is the variance of investigational society. The samples were divided to two 50 member group after selecting coincidentally.

The characteristics of investigational units:

The sample selecting factors	The sample refusing factors
1. primigravida	1. The Threatened abortion, Ectopic pregnancy, mole
2. one fetus	2. digestional diseases such as gastritis
3. The Gestational age of 10 To 16 weeks	3. Special internal diseases and surgeries such as apandisit
4. having exact sonography or LMP	4. smoking
5. having at least 2 days or more than 2 days nausea or vomiting	5. fever having diseases such as anfluenza
6. don't use of anti nausea or anti vomiting medicin in 7 past days.	6. inflammation , breaking and ulcer on neiguan point
	7. Having some suffering phenomenon such as mothers or fathers death.
	8. pregnancy followed by in fertility

The data gathering tools in this investigation were data registering form, daily condition registering sheet and sea band. To determine the intensity of nausea, it was used of visul analogue scale, in such way that it was asked from patient to determine her vomiting level on a 10 cm vertical ruler. In ruler classification, under 3.5 degree was considered as low level of nausea, from 3.5 to 7 was considered as intermediate level of vomiting and higher than 7, was considered as intensive vomiting level. To determine the intensity of vomiting, it was used of khavar oncological scale, according to this scale, accuracy of one or two time vomiting in a day is considered as low level of vomiting and 3 to 5 time vomiting in a day is considered as intermediate level of vomiting and more than 5 time vomiting in a day was considered as high level vomiting.

For each of the investigational units, the data registering form was completed that was included of their pregnancy and demographic data. They passed a training session about the manner of registering the nausea intensity and the times of vomiting on the daily state registering sheets for five days. then the daily state registering sheets were given to them. Both groups members were visited in day two. The bands were fastened on Neiguan point in acupressure group

and out of neiguan point in plasbo group. Finally, it was asked of investigational units that refer to the centre to deliver the daily state registering sheets and removing the bands from the wrist of the hand. After gathering the daily state sheets of investigational units, the analysis of the gained data was conducted using spss softwares. To describe the data, it was used of average, standard deviation, plenty distribution and it was used of chi-square t- test and man whitneyu and wilkacson in comparing the groups.

Results:

In this investigation, the average of the age of the investigational groups in testing group and shahed group were 20.92 and 21.10 respectively. Ttest showed that there isn't any meaningful differences between these two groups with a view of age ($p=0.34$). from the respect of pregnancy age, t- test hadn't show any meaningful differences between these two groups ($P=0.59$).

Chi- square test showed that these two groups are equal with educational level ($p= 0.79$) and job ($p= 0.67$) and pregnancy intention ($P= 0.78$) and BMI ($P=0.09$).

In comparision of vomiting intensity before and after remedy in acuprressure group, the wilkacson test

showed meaningful differences ($P < 0.01$) and the difference wasn't meaningful in placebo group ($P = 0.67$) (Table 1). The average of vomiting intensity before and after remedy, was meaningful by using Wilcoxon test ($P < 0.01$) and it was not meaningful in placebo group ($P = 0.65$) (Table 2).

Finally there wasn't seen any statistical differences between two understudied groups about the intensity of nausea and the frequency of the vomiting before remedy ($p = 0.60$), ($P = 0.55$). Also, the differences between the intensity of nausea and the frequency of vomiting was meaningful between these two groups after remedy ($P < 0.01$) (Table 3).

Table 1. Comparison of the average of the intensity of nausea in two understudied groups before and after remedy

Remedy care	acupressure		Placebo	
Stage- time	Before remedy	After remedy	Before remedy	After remedy
Average	6	3.80	5.66	5.50
Standard deviation	2.08	1.58	2.04	2.03

$P < 0.01$

$P = 0.67$

Table 2. Comparison of the average of the time of vomiting in two understudied groups before and after remedy

Remedy care	acupressure		Placebo	
Stage	Before remedy	After remedy	Before remedy	After remedy
Average	1.50	0.60	1.52	1.50
Standard deviation	0.50	0.41	0.87	0.39

$P < 0.01$

$P = 0.65$

Table 3. Comparison of nausea intensity and times of vomiting in two understudied groups before and after remedy

Stage	Before remedy		After remedy	
Remedy care	acupressure	Placebo	acupressure	Placebo
Average of nausea intensity	6	5.66	3.8	5.50
Average of vomiting intensity	1.50	1.52	0.60	1.50

$P = 0.60$

$P < 0.01$

$P = 0.55$

Discussion: Nausea and vomiting are among most common disorders of the digestive system in pregnancy period and is seen in primigravida, young, high weight women and multigravida (14). Nausea and vomiting rarely is caused to complete quieting in mother but we can decrease this unpleasant feeling by psychological protection and creating some changes in daily diet and the style of living (8, 15). Also we can use of various pharmacological methods and suppling medicine. One of these methods is acupressure.

This is one branch of prickly medicine that has wide application in the remedy of Nausea and vomiting in traditional medicine of China. The mechanism of the effect of the acupressure in remedy of nausea and vomiting is unknown (16). Exactly but its effectiveness contingent mechanism in preventing of nausea and vomiting is releasing B-Endorphin in spinal cord medullary liquid and its effect on μ receptors and increasing the movement of the stomach (18). Stimulation of Neiguan can cause to release of this neurochemical substance. We can use of a kind of

elastic band to stimulate this point that is called sea band(19).

It is believed that tangible movement that is resulted from nerve stimulation is transformed to stem of the brain ambiguously and control the nausea and vomiting(20). Until the pressure is maintained on this point the centre of nausea and vomiting in brain remain unsensitive and when the pressure is removed the remedial effect is removed after 24 hours(21). Afhami and his collaborators in an investigation that was done in 2003 in Tabriz, showed that the acupressure on PC6 point is influential for nausea and vomiting (22).

Tadayon and his collaborators conducted an investigation in 2005 in Ahvaz and concluded that acupressure such as B6 vitamin, caused to decrease of nausea and vomiting at pregnancy period (21). Naseri and his collaborators in an investigation that has been done in 2006 in Kordestan showed that acupressure on PC6 point is a useful method to decreasing the nausea and vomiting in adults after orthopedic surgeries. They proposed that it can be used in other surgeries that nausea and vomiting are side effects of these surgeries(11). Salehian and his collaborators in an investigation in 2007 in Shahrekord propounded that it seems that acupressure is influential in decreasing the time and the intensity of the vomiting in pregnancy period(8). Werntoft and his collaborators found in an investigation that conducted in 2001 that using the acupressure band in usage duration caused to decreasing the signs of nausea and vomiting about 80 percent in pregnancy period (23). Norhem and his collaborators concluded in an investigation in 2001 that stimulating the PC6 point by sea band, cause the decreasing of the intensity and the duration of nausea and vomiting about 71 percent in pregnancy period(12). Belluomini found in an investigation in 1994 that the pregnancy vomiting improve follow the intering pressure on Neiguan point(24). Stein found in an investigation in 1997 that using acupressure technic cause to decreasing of nausea and vomiting and Neiguan point is one of the main points in creating the useful effects of acupressure(25). In another study that conducted by Hsu and his collaborators in 2003 in Pennsylvania, any positive effect of acupressure was seen in decreasing the nausea and vomiting in pregnancy period(26). In investigating the recent investigation result, the intensity of the nausea and the times of vomiting in acupressure group decreased meaningfully after remedy ($P < 0.01$).

It shows that our results are in accordance with the results of Afhami, Tadayyon, Naseri, Salehian, Werntoft, Belluomini, and Stein's investigation that indicate decreasing nausea and vomiting intensity and

the time of occurrence in acupressure group by using sea band on Neiguan point.

In this field there were differences between the recent investigation results and the results of Hsu's investigation. The differences between this investigation's finding is related to the shortness of the time of sea-band using in Hsu's study, because the anti nausea and anti vomiting effects of seaband is revealed 24 hours after consumption.

Finally Results: finally the results of the recent study and similar researches indicate the positive effect of acupressure on Neiguan point against nausea and vomiting in pregnancy period. Training this method can be economical and useful in perinatal remedial care.

References:

1. Cunningham FG. Prenatal care. In: Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Gilstrap LC, Wenstrom KD, et al. *Williams' obstetrics*. New York: Lippincott Williams & Wilkins; 2005:400.
2. Annpa L. The new midwifery, 1st ed. London. Churchill Lippincott company, 2000:30.
3. Varney H. Varney's midwifery. 4th ed. London. Jones and Bartlett publisher, 2001:290.
4. Choen WR. Complications of pregnancy. 5th ed. USA. Lippincott Williams and Wilkins, 2000:30.
5. Gazmararian JA, Petersen R, Jamieson DY, Schild L, Adams MM, Deshpande AD, et al. Hospitalizations during pregnancy among managed care enrollees. *Obstet Gynecol*. 2002; 100 (1): 94-100.
6. Ditto A. Evaluation of treatment of hyperemesis gravidarum using parenteral fluid with or without diazepam. *Obs & Gyn invest*. 1999;48(4): 232-6.
7. Broussard C, Vichter JE. Nausea and Vomiting of pregnancy. *Gastroenterology clinics of North America*. 1998; 27(1): 123-151.
8. Tadayon M, Salehian T, Abbaspoor Z, Latifi M. Comparison of between acupressure and Vitamin B6 in Reducing pregnancy induced nausea and Vomiting. *Scientific Medical Journal, Ahwaz Jundishapur university of Medical sciences*. Summer 2005; 4(3): 195-200.
9. Fan CF, Tanhui E, Joshi S, Trivedi S, Hong Y, Shevde K. Acupressure treatment for prevention of postoperative nausea and Vomiting. *Anesth Analg*. 1997; 84(4):821-5.
10. Dundee JW. Belfast experience with p₆ acupunctare antiemesis. *Ulster Med J*. 1990; 59(1): 63-70.
11. Naseri K, Shami S, Ahsan B, Zojaji Kohan M.R. Effect of acupressure on post operative nausea and

Vomiting Hormozgan medical Journal. Winter 2006; 10(4): (357-362).

12. Norhem Aj, Pedersen EJ, Fonnebo V. Acupressure treatment of morning sickness in pregnancy. Scand J prim Health care. 2001; 19: 43-7.

13. Steele NM. Effect of acupressure by sea-bands on nausea and Vomiting of pregnancy. Jobs Gyn Neonatal Nurs. 2001; 30(1):61-70.

14. Niebyl JR. Drug Therapy in pregnancy. 3rd ed. USA. Lippincott williams & Wilkins, 2001: 77-86.

15. Evans AT, Niswander KR. Manual of obstetrics. 6th ed. USA. Lippincott Williams & wilkins, 2000: 113-115.

16. Ezzo J, Streitberger k, Schneider A. Cochrane Systematic reviews examine 6G acupressure point stimulation for nausea and Vomiting. J Alterncomple ment Med. 2006; 12(5): 489-495.

17. Clement- Jones V, Mcloughlin I, Tomlin S, Besser JM, Rees LH, Wen HL. Increased beta - endorphin but not met- enkephalin levels in human cerebrospinal fluid after acupuncture for recurrent pain. Lancet. 1980; 2:946-949.

18. Lin x,Liang J, Ren J, Mu f, Zhang M, chen JD. Electrical stimulation of acupuncture points enhances gastric my electrical activating in human. Am J Gastro enterol. 1997; 92: 1527-30.

19. Heazell A, Thorneycoroft J, Walton V, Etherington I. Acupressure fore the inpatient treatment

of nausea and Vomiting in early pregnancy: a randomized controlled trial. Am J obstet Gynecol. 2006; 194(3): 815-820.

20. Chernyak GV, Sessler DI. Perioperative acupuntcture and related techniaques. Anesthesiology. 2005; 102(5): 1031-1049.

21. Salhian T,Del Aram M, Tadayon M, The Effects of acupressure by sea band on nausea and Vomiting of pregnancy. Hormozgan medical Journal. Spring 2007; 11(1) : 77-82.

22. Afhami MR Method of non medicinal in prevention of nausea and Vomiting in cesarean section by spinal anesthesia. Medical Journal, Tabriz university of medical sciences. 2003; 59: 14-18.

23. Werntoft E, Dykes Ak. Effect of acupressure on nausea and Vomiting during pregnancy. J Repord Med. 2001; 46(9): 835-9.

24. Belluomini G. Acupressure for nausea and Vomiting of pregnancy. Obstet & Gynocol. 1994; 84: 245-8.

25. stein Dg. Acupressure Versus intravenous Metoclopramide to prevent nausea and Vomiting during spinal anesthesia for Ceasarean section. Anesth Analg. 1997; 84: 342-5.

26.Hsu E, Peiv A.Propective randomized controlled trial of acupressure Vs sham for pregnancy related nausea and Vomiting in the Emergency Department. Acad Emery Med. 2003; 10(5): 437.