To evaluate the effects of acupressure by sea band on nausea and vomiting of pregnancy.

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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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Key words: Acupressure, Nausea, Vomiting, sea - bands.

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 occure at every time in a day(1,3). In 80 percent it occure in day but in 3.1 percent it occure in the afternoon or evening (2). Hormon changes resulted from pregnancy, psychological reasons, blood suger 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 intense that can cause to electrolyts unequillibrain and can create methabolic problems and nutrition(5) . Intra venous liquid injections and prscription of vitamins are useful remedical 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 longous 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 foregoing mentioned point cause to to releasing of a norochemical substance that make the vomiting centre unsensitive at the brain(9). Dundee in 1990 found that using accupuncture or prickly medicine on PC6 point in remedy of nausea and vomiting is influental(10). Norhem and his collaborators found in an study about pregnante women who were refeered 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
accupuncture in remedy of different kinds of diseases such as nausea and vomiting (8,11). By considering this subject that one of stimulation methods of neiuguan point is using sea band (13) so the recent investigation had compared the effect of using pressure on neiuguan 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 refered 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: $n = \frac{1.96^2 \delta^2}{\text{0.05}^2}$. In this equation, $\delta^2$ is the variance of investigational society. The samples were devided to two 50 memrbr group after selecting coicidently.

<table>
<thead>
<tr>
<th>The characteristics of investigational units:</th>
<th>The sample refusing factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>The sample selecting factors</td>
<td>The sample refusing factors</td>
</tr>
<tr>
<td>1. primigravida</td>
<td>1. The Threatened abortion, Ectopic pregnancy, mole</td>
</tr>
<tr>
<td>2. one fetous</td>
<td>2. digestive diseases such as gastritis</td>
</tr>
<tr>
<td>3. The Gestational age of 10 To 16 weeks</td>
<td>3. Special internal diseases and surgeries such as apandisit</td>
</tr>
<tr>
<td>4. having exact sonography or LMP</td>
<td>4. smoking</td>
</tr>
<tr>
<td>5. having at least 2 days or more than 2 days nausea or vomiting</td>
<td>5. fever having diseases such as influenza</td>
</tr>
<tr>
<td>6. don’t use of anti nausea or anti vomiting medicine in 7 past days.</td>
<td>6. inflammation, breaking and ulcer on neiuguan point</td>
</tr>
<tr>
<td>7. Having some suffering phenomenon such as mothers or fathers death.</td>
<td>7.</td>
</tr>
<tr>
<td>8. pregnancy followed by in fertility</td>
<td>8.</td>
</tr>
</tbody>
</table>

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 visual 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 test and man whitney 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. T test 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 acupresure group, the wilkacson test
showed meaningful differences (P<0.01) and the difference wasn’t meaningful in plasbo group (P=0.67) (Tabel1). The average of vomiting intensity before and after remedy, was meaningful by using wilkacson test (P<0.01) and it was not meaningful in plasbo group (P=0.65) (tabel2).

Finally there wasn’t seen any statistical differences between two understudied group 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)(tabel3).

**Table1.** Comparision of the average of the intensity of nausea in two understudied group before and after remedy

<table>
<thead>
<tr>
<th>Remedy care</th>
<th>acupressure</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage-time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>Before remedy</td>
<td>6.00</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>2.08</td>
<td>1.58</td>
</tr>
<tr>
<td>P</td>
<td>P&lt;0.01</td>
<td>P=0.67</td>
</tr>
</tbody>
</table>

**Table2.** Comparison of the average of the time of vomiting in two understudied group before and after remedy

<table>
<thead>
<tr>
<th>Remedy care</th>
<th>acupressure</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>Before remedy</td>
<td>1.50</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.50</td>
<td>0.41</td>
</tr>
<tr>
<td>P</td>
<td>P&lt;0.01</td>
<td>P=0.65</td>
</tr>
</tbody>
</table>

**Table3.** Comparison of nausea intensity and times of vomiting in two understudied group before and after remedy

<table>
<thead>
<tr>
<th>Stage</th>
<th>Before remedy</th>
<th>After remedy</th>
<th>Remedy care</th>
<th>acupressure</th>
<th>Placebo</th>
<th>acupressure</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average of nausea intensity</td>
<td>6.00</td>
<td>5.50</td>
<td>3.80</td>
<td>5.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average of vomiting intensity</td>
<td>1.50</td>
<td>1.52</td>
<td>0.60</td>
<td>1.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>P=0.60</td>
<td>P&lt;0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion:** Nausea and vomiting are among most common disorder’s of digestion system in pregnancy period and is seen on primigravida, young, high weight women and multigravida (14). Nausea and vomiting remedy 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 supersending 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 it’s 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 nourchemical 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
remedical effect is removed after 24 house(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 decreation
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
proounced 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). Belloumini 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 an another study that conducted by
Hsu and his collaborators in 2003 in pensilvania, 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, Tadayon, Naseri, salehian,
werntoft, Belloumini, and stein’s investigation that
indicate decreasing nausea and vomiting intensity and
the time of assurance in acupressure group by using
sea band on neiguan point.
In this field there was 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 lusu’s study, because the anti
nausea and anti vomiting effects of seaband is
revealed 24 house 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 remedical
care.

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