

Effectiveness of Point ST36 (Zusanli) Acupressure on Emesis Gravidarum First Trimester in the Tenganan Health Center

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Abstract: Emesis gravidarum or nausea and vomiting are complaints that are often experienced by pregnant women in the first trimester, but if not handled appropriately, it will cause health problems for pregnant women, which not only disturb the mother but also the fetus she is carrying. Based on a preliminary study conducted in August 2023 at the Tenganan Health Center in Semarang Regency, data was obtained that the total number of pregnant women in the last month (July 2023) was 177 people and 35 people were included in the first trimester category. The results of observation of 35 pregnant women in the first trimester obtained data that 22 people (62.86%) experienced emesis gravidarum and 13 (37%) did not experience emesis gravidarum. There are many things that affect the occurrence of emesis gravidarum, including age during pregnancy, parity, work and gestational age. One of the treatments that can be done is by providing non-pharmacological therapy, ST36 point acupressure (Zusanli) which has no side effects. The goal is to find out whether there is an effect of ST36 point acupressure on emesis gravidarum in the first trimester in the Tenganan Health Center in 2023. The design of this study is Quasy-Experiment with One Group Pre-Test Post-Test. The number of samples used was 20 respondents in December 2023 at the Tenganan Health Center using the Total Sampling technique and using the PUQE-24 instrument. The data analysis used was Univariate and Bivariate data analysis, using a non-parametric statistical test, namely the Wilcoxon Test. The results of the Wilcoxon test obtained a sig value of 0.000, which means a p value of $< \alpha$ (0.05), then H_a was accepted and H_o was rejected, which means that there is an effect of ST36 (Zusanli) acupressure on the first trimester emesis in the Working Area of the Landmark Health Center. There is an effect of acupressure massage point ST36 (Zusanli) on emesis gravidarum in the first trimester in the Working Area of the Tenganan Health Center.

Keywords: Pregnancy in the first trimester, Emesis, Acupressure ST36 (Zusanli)

INTRODUCTION

Every pregnancy is a condition that requires psychological and physiological adaptation to the influence of pregnancy hormones and mechanical stress caused by the enlarging uterus and other tissues. Changes that occur in pregnant women can cause discomfort during pregnancy. One of the changes is emesis gravidarum which often occurs in early pregnancy and this condition often occurs in the morning, afternoon, evening or even nausea and vomiting at any time (Holisoh et al., 2023).

Even though it is physiological, if it is not treated immediately it will cause problems such as reduced fluid in the body and result in hemoconcentration and subsequently slow blood circulation which can affect the development and growth of the fetus (Wulandari et al., 2019). According to the Ministry of Health in 2019, cases of emesis gravidarum in pregnant women in Indonesia during the 2019 period were 2,203 maternal pregnancies.

The World Health Organization (WHO) says that emesis gravidarum accounts for 12.5% of all pregnancies worldwide. Meanwhile, the rate of emesis gravidarum in Indonesia ranges from 1 to 3% of all pregnancies. Based on the results of research conducted in Indonesia, emesis gravidarum reached 14.8%. It was found that 543 cases of emesis gravidarum occurred in pregnant women in the early period of pregnancy, so the average number of cases of emesis gravidarum in Indonesia in 2019 was as much as 67.9%, of which 60-80% of the incidence occurs in primigravidas, and 40-60% of the incidence occurs in multigravidas (Retni et al., 2020). In the Central Java province, the incidence of emesis gravidarum reaches a percentage of 40-60% of total pregnancies (Ministry of Health of the Republic of Indonesia, 2017). Based on a preliminary study in August 2023 at the Tenganan Community Health Center, Semarang Regency, data was obtained that the total number of pregnant women in the last month was 177 people and 35 people were in the first trimester category. The results of observations of 35 pregnant women in the first trimester showed that 22 people (62.86%) experienced nausea and vomiting and 13 (37%) did not experience nausea and vomiting.

The main factor causing maternal death in Indonesia is not emesis gravidarum, but the incidence of emesis is quite large, namely 60%-80% in primigravidas and 40%-60% in multigravidas. 1:1000 pregnancies experience more severe symptoms. Emesis gravidarum is caused by increased levels of the hormones estrogen and progesterone produced by Chronic Gonadotropin (HCG) in the placenta (Soa et al., 2018). Serious impacts on the mother and especially on the fetus include low birth weight (LBW) and premature birth (Sulistiarini et al., 2018).

Treatment that can be done for emesis gravidarum is pharmacological and non-pharmacological treatment. Pharmacologically, an anti-nausea drug that is often given to pregnant women is vitamin B6, but this drug is reported to have side effects such as headaches, diarrhea and drowsiness. Meanwhile, non-pharmacological treatment includes changes in diet and complementary treatments such as homeopathy, aromatherapy, osteopathy, reflexology, light massage (endorphin) or acupressure. One alternative option for managing emesis gravidarum is by administering acupressure. Compared to other non-pharmacological treatments, acupressure massage does not require space, special equipment and special preparations,

unlike reflexology therapy, aromatherapy, acupuncture which require equipment such as needles, blunt objects, special fragrances, and a really comfortable room atmosphere, as well as special skills. So the acupressure massage technique is an easy, cheap therapy and has minimal side effects (Maheswara & Christiani, 2022).

Acupressure is a type of physical therapy that involves applying pressure and stimulation to certain parts of the body and is sometimes called whole blood therapy or finger pricking (Mehta et al., 2017). Acupressure is used to achieve physical satisfaction and comfort, and to reduce tension and fatigue. Additionally, it reduces costs. ST 36 is located four fingers from the top of the tibia in Acupressure. The ST 36 point is located on the foot meridian, namely 3 cun (4 fingers) below the patella and 1 finger lateral to the crest of the tibia (Cholifah et al., 2022). This therapy does not involve the use of drugs or invasive procedures but only activates the body's cells. Therefore, this acupressure therapy does not cause side effects like pharmacological treatment and does not require large costs. In principle, acupressure therapy is similar to massage so it does not require special skills, in contrast to acupuncture which requires special training (Mariza & Ayuningtias, 2019).

So far, the treatment for emesis gravidarum at the Tenganan Community Health Center, according to data obtained through interviews with 6 pregnant women, is by administering pharmacological drugs such as vitamin B6 supplements and antiemetic drugs, as well as education about self-management such as managing portion sizes and hot drinks. Meanwhile, non-pharmacological treatments such as acupressure therapy have not been applied. Based on the description of this background, researchers are interested in conducting research with the title "The Effect of the Effectiveness of ST36 Point (Zusanli) Acupressure on Emesis Gravidarum in the First Trimester in the Tenganan Community Health Center Area".

METHOD

This research design uses a Quasi Experimental method (quasi-experiment/unreal research), namely research that approaches a real experiment where there is no control class with one group pre-test post-test design carried out using the Pregnancy Unique Quantification of Emesis and Nausea questionnaire (PUQE)-24. The research location was in the Tenganan community health center on 1-30 December 2023. The population in this study was 20 respondents in the first trimester of pregnancy who experienced emesis. The research sample consisted of 20 first trimester pregnant women who experienced emesis, taken using total sampling technique.

Researchers conducted observations of pregnant women who experienced emesis in the Tenganan community health center. Giving ST36 (Zusanli) acupressure massage is done by pressing using the thumb which is located on the meridian of the foot, namely 3 cun (4 fingers) below the patella and ½ cun (1 finger) lateral to the crest of the tibia carried out perpendicularly to a depth of 1- 2 cm for 30 seconds to 2 minutes. Performed on both legs alternately from left to right. Pressing is done 30 times in alternating clockwise rotation. If the client complains of pain, the pressure can be stopped for a moment after 3 minutes of pressure and then resumed. The duration of ST36 acupressure is 3-5 minutes. The emphasis is carried out 3 times a day, namely morning, afternoon and evening for 3 consecutive days. So the results of the pre-test measurements were compared with the results of the post-test measurements using the Wilcoxon test which aims to determine the differences before and after being given ST36 (Zusanli) acupressure in reducing first trimester emesis in the Tenganan health center in 2023.

RESULTS

Univariate Analysis

Based on the results of research conducted on 20 respondents in the work area of the landmark health center in December 2023, the following results were obtained:

1. Identifying the incidence of Emesis gravidarum in the first trimester at the Tenganan Community Health Center before giving acupressure massage

Table 1 Frequency Distribution of Respondents Before Being Given the Intervention

	n	%	Min	Max	Mean	SD
Pre-Test Akupresur	20	100%	7	11	9.30	1.418

Source: Primary Data, 2023

Based on table 1, respondents before being given the ST36 (Zusanli) acupressure massage intervention with a total of 20 respondents received a minimum score of 7, a maximum score of 11, a mean value of 9.30 and a Std. Deviation is 1,418. This percentage value reflects the distribution or prevalence of levels of vomiting in the observed sample.

2. Identifying the incidence of Emesis Gravidarum in the first trimester at the Tenganan Community Health Center after being given acupressure massage.

Table 2. Frequency Distribution of Respondents After Being Given the Intervention

	n	%	Min	Ma x	Mean	Std. Deviation
Post-Test Akupresur	20	100%	4	8	5.45	1.099

Source: Primary Data, 2023

Based on table 2, respondents before being given the ST36 (Zusanli) acupressure massage intervention with a total of 20 respondents received a minimum score of 4 and a maximum score of 8. The mean value was 5.45 and the Std. Deviation is 1,099. So there is a significant reduction in the frequency of emesis gravidarum in the first trimester. From these results it can be said that giving ST36 point acupressure to pregnant women.

Bivariate Analysis

3. Analyzing first trimester pregnant women who experienced emesis before and after being given the ST36 (Zusanli) acupressure massage intervention at the landmark health center

Table 3. Wilcoxon Test Effect of Acupressure Massage (Pre-Test and Post-Test)

	N	Mean Rank	Sum Of Ranks	P- Value	Z
Pre-Test Akupresur	20	.00	.00	0.000	-3.985
Post-Test Akupresur	20	10.50	210.00		

Source: Primary Data, 2023

Based on table 3, it is known that the results of the Wilcoxon test showed that the average value before being given acupressure was 9.30 and the average value after being given acupressure was 5.45 with the difference before and after the intervention being 3.85 which experienced a decrease and a sig value of 0.000, which means $p \text{ value} < \alpha (0.05)$, then H_a is accepted and H_o is rejected, which means there is an effect of ST36 (Zusanli) acupressure on nausea and vomiting in first trimester pregnant women.

DISCUSSION

Emesis gravidarum is a normal symptom and often occurs in the first trimester of pregnancy, caused by changes in the endocrine system that occur during pregnancy, especially due to high fluctuations in Human Chorionic Gonadotropin (HCG) levels, especially during the period of gestational nausea or vomiting which is most common in First 12-16 weeks of pregnancy. The increase in HCG causes a sore effect on the stomach lining, and this effect is nausea, causing a loss of sugar from the blood, which can cause feelings of hunger and pain. Furthermore (Christiani & Andayani, 2019) stated that the main factor causing emesis

gravidarum is due to changes in Human Chorionic Gonadotropin (HCG) which is produced by the placenta and is influenced by the hormones estrogen and progesterone. Apart from that, impaired liver function, peristaltic movements of the digestive system and infections can also cause emesis gravidarum. Women who suffer from gastritis before pregnancy with symptoms of not liking to eat and nausea will cause more severe emesis gravidarum. Furthermore (Christiani & Andayani, 2019) stated that emesis gravidarum is thought to be caused by psychological and endocrine factors (hormonal imbalance compared to before pregnancy, namely increased levels of HCG, estrogen and thyroxine), factors such as gestational age, maternal age, education and maternal occupation.

According to (Metasari et al., 2022), the hCG hormone which increases during pregnancy is thought to be the cause of nausea and vomiting which works on the vomiting center in the brain, namely the medulla. Hormone production begins at the beginning of pregnancy, namely at the time of implantation. After that, the levels of the hCG hormone in the mother's blood plasma and urine will increase very rapidly. The levels increase from the day of implantation until they reach a peak on the 60th to 70th day. After that, hCG hormone levels will gradually decrease, reaching their lowest point on days 100 to 130.

This can be seen by the percentage before being given acupressure intervention who experienced emesis as much as 85%, while the percentage after being given acupressure intervention was 5%. This is in line with (Safaa, et al., 2019) which states that acupressure has the advantage of being a simple, non-invasive technique without side effects on pregnant women and their fetuses.

The effectiveness of using the Zu san Li method in reducing first trimester emesis, (Putri et al., 2014) results of emesis analysis in pregnant women show lower values after acupressure therapy. The emesis score experienced by pregnant women after being given acupressure therapy decreased compared to before being given acupressure therapy. Acupressure points that can relieve emesis include points P6 and ST36, in line with the theory (Cholifah et al., 2022), namely that in women emesis is caused by changes in Human Chorionic Gonadotropin (HCG), so ST36 acupressure massage intervention is given (Zusanli).

Based on the results of research (Indah Sari & Wahyuningsih, 2021) published in the Nursing and Health Sciences Journal, acupressure therapy at point P6, point KID21, Zu San Li, and point Gong Sun is effective in reducing emesis when carried out routinely and concludes that non-invasive acupressure therapy pharmacology is effective in reducing complaints of nausea and vomiting in pregnant women. In line with the results of case study research (Rahmadaniyati & Selvi Yanti, 2022) shows that there is an effect of providing acupressure techniques on reducing first trimester emesis. Furthermore (Raihanah et al., 2020) states that points P6 and ST 36 are considered key points in reducing symptoms nausea and vomiting. Point P6 affects

the heart, chest and stomach and is indicated for angina pectoris, palpitations, heartburn, nausea, vomiting, malaria and stiff fingers. The ST 36 point regarding the stomach organ is characterized by abdominal pain, nausea, vomiting, gastroenteritis, diarrhea, malaise and fatigue.

Research conducted (Tan et al., 2023) shows that acupressure treatment in treating emesis gravidarum is more effective than the use of pharmacological drugs and does not have side effects or a high level of safety. The acupressure points for treating emesis gravidarum are PC6, TE5, N12, ST36, CV17, CV12, and SP4. In line with the Gate Control Theory introduced by Melzack and Wall, acupressure at acupressure points can transmit stimulation to the brain four times faster than painful stimulation.

CONCLUSION

Respondents before being given ST36 (Zusanli) point acupressure had a minimum value of 7, maximum value of 11, mean value of 9.30 and Std. Deviation is 1,418. Respondents after being given ST36 (Zusanli) point acupressure had a minimum value of 4 and a maximum value of 8, a mean value of 5.45 and a Std. Deviation is 1,099. So ST36 acupressure is able to reduce the frequency of first trimester emesis in the Tenganan health center area.

Conflict of Interest

All authors declare no conflict of interest.

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