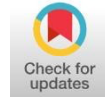


## Effectiveness of the pericardium (PC) 6 point massage on emesis decrease first trimester pregnant women

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### ABSTRACT

Hyperemesis gravidarum is a determinant of LBW occurrence of 4,821. The prevalence of emesis gravidarum is more than 80% of pregnant women in Indonesia. Nausea and vomiting can be treated non pharmacologically. Determine the effectiveness of the Pericardium (PC) 6-point massage on the reduction of emesis in the first trimester of pregnant women. This study was quantitative research, experimental design approach with two group design with pre posttest design. The population of pregnant women in the first trimester is 49. The sample in this study were 34 respondents who were pregnant in the first trimester using a randomization control trial technique. The PC6 group was given 2x massages at the pericardium 6 point for 1-3 minutes and the ginger group was given 2.5 g of ginger drink with 250 ml hot water, drunk 2x1 for 7 days. Data analysis used Shapiro-Wilk test, the number of ratings obtained normal results data processing with paired T test. That was mean decrease was 3.706 in the PC6 massage, while the mean decrease was 0.882 in the ginger. There was a difference in the decrease in emesis frequency in the calculation of the difference between the experimental group and the control group (p-value = 0.000 < 0.005). There is effectiveness of the Pericardium Point (PC) 6 massage on the reduction of emesis in first trimester pregnant women.



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### Introduction

Hyperemesis gravidarum is a determinant of the occurrence of LBW of 4.821<sup>1</sup> According to WHO, in 2018 the incidence of LBW was 8.88% of the 20.6 million babies born each year<sup>2</sup> The LBW rate in Indonesia nationally based on further analysis of the IDHS, the LBW rate is around 7.1%.<sup>3</sup>Data on pregnant women in Sleman district amounted to 15,420 people and 752 LBW births<sup>4</sup>Seyegan Health Center totaled 778 pregnant women with 38 LBW births<sup>4</sup>.

The prevalence of emesis gravidarum is more than 80% of pregnant women in Indonesia experience excessive nausea and vomiting. The incidence of cases of emesis gravidarum is 0.8 to 32 cases per 1000 pregnancies.<sup>5</sup> Symptoms of nausea can become severe if not treated properly. Continuous nausea and vomiting can result in babies at birth, namely low birth weight babies, the incidence of LBW is 11.3% with an increased incidence of 55% nausea and vomiting<sup>6</sup>

Emesis gravidarum is a normal symptom or is often found in the first trimester of pregnancy. Nausea usually occurs in the morning, but some occur at any time of the night. These symptoms usually occur 6 weeks after the first day of the last menstrual period and last approximately 10 weeks<sup>7</sup>

Management of nausea and vomiting in pregnancy depends on the severity of the symptoms. Treatment ranges from mild with dietary changes to approaches with antiemetic medication, hospitalization, or parenteral nutrition. Treatment consists of pharmacological and non-pharmacological therapy. Pharmacological therapy is carried out by giving antiemetics, antihistamines, and corticosteroids. Non-pharmacological therapy is carried out by adjusting diet, emotional support, acupressure and ginger consumption.<sup>7</sup> Acupressure (pericardial point 6) is an action to reduce or reduce nausea and vomiting in pregnancy which is done by pressing on certain body points (pericardial point 6 or three fingers below the wrist). Acupressure is a massage method based on the science of acupuncture or it can also be called acupuncture without needles. Acupressure therapy is one of the non-pharmacological therapies in the form of massage therapy at certain meridian points associated with internal organs to treat nausea and vomiting. Effects of P6 acupressure in the prophylaxis of chemotherapy-associated nausea and vomiting in breast cancer patients<sup>8</sup>

Not all pregnant women can undergo therapy using drugs, there are some mothers who do not really like it when they have to take drugs, so the provision of non-pharmacological therapy is needed here. One of the non-pharmacological therapies that can be used to treat emesis gravidarum is massage of the P6 point with acupressure. It is proven by the results of Widyastuti Asymp.sig's  $0.005 < 0.05$ .<sup>9</sup>

Nausea and vomiting can be treated non-pharmacologically. Non-pharmacologically is by taking preventive measures and with traditional medicine. One of the traditional treatments is to drink ginger tea, eat ginger candy or drink ginger boiled water<sup>10</sup>. Although ginger has many side effects if taken more than four grams in one day, with symptoms of heartburn, bloating, nausea or stomach upset.<sup>8</sup> Acupressure is effective in preventing nausea and vomiting, the more routine acupressure is done, the complaints of nausea and vomiting will decrease, so it can prevent complications in pregnant women as evidenced by the results of the independent test  $p = 0.010 < \alpha = 0.05$ .<sup>11</sup>

Ginger is more effective at relieving mild nausea and vomiting than placebo. A study conducted in South Africa involving 1278 pregnant women was given ginger, where ginger is considered a harmless and effective alternative medicine for women who experience nausea and vomiting in pregnancy.<sup>12</sup> Preliminary studies conducted on 10 pregnant women aged 21 to 42 years, there were 8 mothers who experience nausea and vomiting. Efforts to reduce nausea and vomiting are by changing diet, using anti-emetic drugs such as vitamin B6, and using aromatherapy. But these efforts have not been maximized in an effort to reduce nausea and vomiting. For the incidence of LBW during the last 6 months there were 5 babies (18.5%) from 27 deliveries. So that researchers are interested in conducting research to determine the effect of the effectiveness of *Pericardium* Point massage (PC) 6 on the reduction of *emesis* in first trimester pregnant women.

## Method

This research is quantitative research, *experimental design* approach with *two group design with pre posttest design, randomization control trial* method. The population is the entire source of data needed in a study.<sup>13</sup> The population in this study were all TM 1 pregnant women at the Seyegan Health Center in December 2020-March 2021 with a total number of 49 TM 1 pregnant women while 39 TM 1 pregnant women with emesis. Sampel premises n number of groups totaling 17 massages PC 6 and Ginger numbering 17 in total 34 samples. Techniques or sampling methods are divided into two, namely random techniques (random) and non-random techniques. Random sampling technique should only be used if

each unit or member of the population is homogeneous or assumed to be homogeneous.<sup>13</sup> In this study, the researcher used a random sampling technique. The k criteria inclusion: Pregnant women who do the ANC in Puskesmas Seyegan, with *emesis* mild and moderate, pregnant women who are not with something gastrointestinal diseases eg: appendicitis, gastritis. While the sample excluded pregnant women with comorbidities (*Diabetes Mellitus*, *Hypertension*, *Tuberculosis*), pregnant women drank herbal ingredients except for ginger and nausea-reducing drugs. The study was conducted in August 2020-March 2021. The analysis was carried out using *paired T test*.

## Result and discussion

The distribution of the characteristics of the sample studied including parity, age, education, responses to pregnancy, work and income. From this study based on the level of *emesis* of the two groups of moderate *emesis*. Based on age, the most were aged 20-35 years in both groups, namely in the control group as many as 16 pregnant women (94.1%) and 14 pregnant women (82.4%) in the PC6 group. Based on education, most were high school graduates in both groups, and equally distributed in the control group and PC 6 group as many as 12 pregnant women (70.6%). Based on parity, it was found that pregnant women had more *emesis* in multigravida both in the control group as many as 9 pregnant women (52.9%) and in the PC6 group as many as 11 pregnant women (64.7%). Based on pregnancy responses, 100% of pregnant women feel happy with their pregnancy. Based on the most occupations are not working (housewives in both groups, and equally distributed in the control group and PC6 group as many as 10 pregnant women (58.8%). Based on the highest income is not enough in the control group 12 pregnant women (70.7%). Meanwhile, in the PC6 group, there were only 9 pregnant women (52.9%) the variables listed in table 6 showed homogeneity to the study, except for the age where the *p value* was 0.033.

Table 1. Distribution of Frequency and Homogeneity of Pregnant Women Respondents based on Characteristics in the Seyegan Health Center Area in 2020

Variable	PC6 massage		Ginger		P value
	f	%	f	%	
Age					
20-35	14	82.4	16	94.1	0.033
>35	3	17.6	1	5.9	
Education					
middle school	3	17.6	3	17.6	1,000
high school	12	70.6	12	70.6	
PT	2	11.8	2	11.8	
parity					
Primigravida	6	35.3	8	47.1	0.256
Multigravida	11	64.7	9	52.9	
Profession					
Does not work	7	41.2	7	41.2	1,000
Work	10	58.8	10	58.8	
Income					
Not enough	8	47.1	12	70.6	0.90
Enough	9	52.9	5	29.4	

Table 2. Effect of PC6 massage with the control group (ginger) on reducing *emesis*

Classification	Emesis				P value
	Before		After		
	mean	Std Deviation	mean	Std Deviation	
PC6 massage	10.94	1.029	7.24	1.251	0.048
Ginger	10.65	1.412	9.76	1.393	0.000

In table 2 can be seen that the average nausea and vomiting of pregnant women with TM I before being given PC 6 massage with a *mean* value of 10.94 with a standard deviation of 1.029 after being given a PC6 massage the mean 7.24 with a standard deviation of 7.24 while the Control Group before being given ginger Mean 10.65 with a standard deviation 1.251 and after being given ginger a mean of 9.76 with a standard deviation of 1.393. So it can be concluded from the PC6 and Ginger groups that there were differences before and after treatment.

Table 3 Comparison of the difference in the effectiveness of reducing emesis on PC6 massage and the control group.

Respondent	mean	St Deviation	Minimum	maximum	p- value
PC6 Titik point	3,706	1,490	2,940	4.472	0.00
Control group (Ginger)	0.882	0.781	0.481	1,284	

From table 3, it can be seen that the average emesis gravidarum was 17 respondents with a *mean* of 3706 and a *standard deviation* of 1,490 on the PC6 massage measurement, 17 respondents with emesis gravidarum were given ginger with a *mean* of 0.882 and a *standard deviation* of 0.781. The results of statistical tests obtained *p-value* = 0.000 which means that there is an effect of giving acupressure point pc 6 and giving ginger to emesis gravidarum. These results show that PC6 massage reduces more effectively than Ginger.

From a total population of 39 (79.5%) pregnant women experienced *emesis* according to a study conducted from 108 pregnant women, 74% reported nausea, although only 1.8% experienced it as a symptom that only occurred in the morning. As many as 27% of pregnant women who experienced nausea and vomiting said their symptoms disappeared by the twelfth week, although most felt better by the 22nd week of pregnancy<sup>14</sup>

The average emesis gravidarum of pregnant women with TM I before being given acupressure therapy at the Seyegan Health Center with a *mean* of 10.4 and a *standard deviation* of 1.029. In line with what was stated that nausea (nausea) and vomiting (emesis) are normal symptoms and are often found in the first trimester of pregnancy. Nausea usually occurs in the morning, but can also occur at any time and at night these symptoms are approximately 6 weeks after the first day of the last menstrual period and lasts for approximately 10 weeks. Emesis Gravidarum is a common complaint presented in early pregnancy. The occurrence of pregnancy causes hormonal changes in women because there is an increase in

the hormones estrogen, progesterone, and the release of human chorionic gonadotropine placenta. This hormone is what causes emesis gravidarum<sup>15</sup> In line with research conducted by giving PC 6 massage there was an average decrease of 3,706 explaining that acupressure at the PC 6 point can reduce nausea for pregnancy, PC 6 is part of the acupressure point, which has not been explained by many researchers on nausea and vomiting or morning sickness. sickness for pregnant women<sup>16</sup>

Ana Mariza's research also showed vomiting before being given the intervention Mean 10.53 Min 9 Max 13 and Standard Deviation 1.408 and Standard Error 0.257, after being given acupressure Mean 7.30 Min 5 Max 10 and Standard Deviation 1.317 and Standard Error 0.240. Statistical test results obtained value of P-value = 0.000 means that there Effect of akupresure p6 point against nausea and vomiting in pregnant women in the BPM TM I Wirahayu Long Year 2018.<sup>17</sup> So as to reduce this impact, which does not only occur in pregnant women, but can also cause side effects on the fetus such as the fetus experiencing certain nutritional deficiencies, perfect organ formation can fail. In addition, the fetus is at risk of being born with low birth weight to death.<sup>14</sup> In accordance with Mutmainna's research that Hyperemesis gravidarum is the determinant of the occurrence of LBW by 4,821.

Not all pregnant women can undergo therapy using drugs, there are some mothers who do not really like it when they have to take drugs, so the provision of non-pharmacological therapy is needed here. One of the non-pharmacological therapies that can be used to treat emesis gravidarum is massage of the P6 point with acupressure. It is proven by the results of Widyastuti Asymp.sig's research. (2-tailed)0.005<0.05<sup>9</sup>. Acupressure is a treatment by massaging or pressing fingers on the surface of the skin, where the massager will reduce tension, increase blood circulation, and stimulate the body's energy power to heal or nourish.<sup>19</sup> Several studies have shown that acupressure reduces nausea and vomiting and there is no risk of trying acupressure for morning sickness<sup>18</sup>

In this study, emesis gravidarum has at least a minimum value of 6 and a maximum value of 13, the frequency of nausea and vomiting can be caused by the body's response to objects, odors, or food consumed, in addition to the handling and management of nausea and vomiting is very necessary for pregnant women, such as giving warm food, snacks or crackers, as well as non-pharmacological management (herbal medicine) in the hope that nausea and vomiting can be resolved, and do not interfere with maternal nutritional intake.

Non-pharmacological therapy is done by regulating diet, emotional support, and acupressure. Non-pharmacological therapy is a type of complementary therapy that can be used as an intervention to treat nausea, including: acupressure, acupuncture, relaxation, and therapy. The purpose of this study was to determine the effect of acupressure complementary therapy in reducing nausea and vomiting (Emesis Gravidarum) in pregnant women in the first trimester of.<sup>19</sup> Pathophysiology *Emesis gravidarum* can be caused by an increase in the *hormone chorionic gonodhotropin* (HCG) which can be a factor in nausea and vomiting.<sup>20</sup> Increased levels of the *hormone progesterone* causes the smooth muscle in the gastrointestinal system experience the relaxation that decreased motility and stomach to be empty.

In this study, the results of giving ginger to the control group decreased emesis but it was not in line with studies in Africa that ginger was more effective for relieving mild nausea and vomiting than placebo. A study conducted in South Africa involving 1278 pregnant women was given ginger, where ginger is considered a harmless and effective alternative medicine for women who experience nausea and vomiting in pregnancy.<sup>12</sup> Nausea and vomiting in pregnant women during the first trimester still occur and mostly use pharmacological therapy to treat it. As in the work area of the Seyegan

Community Health Center , many pregnant women use pharmacological therapy to reduce nausea and vomiting. It would be better if pregnant women are able to overcome nausea in early pregnancy by first using non-pharmacological complementary therapies. Because tend to be non-instructive, non-invasive, inexpensive, simple, effective and without adverse side effects <sup>21</sup>. Based on the results of a literature review that has described many factors that cause emesis, but due to the limitations of the researcher considering time and ability, not all variables related to emesis were studied, only a few variables were taken in this study. Other variables that have not been studied in this study such as *HCG*, ability to smell, estrogen and progesterone, serotonin, thyroid hormone, fatigue, previous history, use of contraceptive pills can be used as variables for further research. This study has limitations, namely it depends on patients who come to the Puskesmas which are the primary data sources in this study because during the pandemic patients have anxiety so that visits by pregnant women are reduced.

Operational difficulties found in this study were in the case if the patient had not collected the evaluation sheet, our researchers took the data door to door and because of the terrain, the distance from one house to another house was far apart so it took quite a long time. The technical difficulties that the researchers originally scheduled to use the *Google form* link could not be implemented because some people still use manual cellphones that cannot open the application, and many have signal problems so that data collection uses manual forms.

## Conclusion

In order to be able to provide a policy for implementing complementary management of emesis in the first trimester of all Puskesmas in Sleman because of the importance of dealing with emesis to prevent the increase in LBW in Sleman district, especially because with complementary treatment it can be more cost-effective and safer. Researchers further expected to be able to continue the study of this with a case control y ang else in this study and is expected to be even better and more varied complementary therapy.

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