

## The Effect of Ginger Decoction on Emesis Gravidarum among Trimester I Pregnant Women

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### ABSTRACT

Based on data in Indonesia, the comparison of the incidence of nausea and vomiting leading to pathological or hyperemesis gravidarum is 4: 1000 pregnancies. It is estimated that 50% to 80% of pregnant women experience nausea and vomiting and approximately 5% of pregnant women require treatment for fluid replacement and correction of electrolyte imbalances. The occurrence of pregnancy causes hormonal changes in women because there is an increase in the hormones estrogen, progesterone, and the release of the placental chorionic gonadotropin (HCG) hormone. This study aimed to determine the effect of ginger decoction on the frequency of emesis gravidarum in the first trimester. The design used was a quasi-experimental design. The location of this study was carried out at PMB R. Agustina on July 29, 2021 to August 8, 2021. In this study, the number of samples taken by pregnant women who were experiencing emesis gravidarum were 15 experimental groups and 15 total control groups 30. Independent variable was the ginger decoction, and dependent Variable was emesis gravidarum in first trimester among pregnant women. Research instruments can be in the form of a questionnaire (a list of questions), an observation form. Using the Mann Whitney Test. The results showed that the emesis gravidarum before being given ginger boiled water was 9.07 after being given ginger boiled water was 5.27, it was known that the emesis gravidarum before the control was 8.20 after the control was 6.47. There was an Effect of Giving Ginger decoction on Emesis Gravidarum in Pregnant Women TM 1 ( $p$ -value 0.001). It is hoped that it can increase public knowledge and is expected to be useful for respondents in knowing about the effect of ginger drink on reducing the frequency of emesis gravidarum in first trimester pregnant women.

Keywords: emesis gravidarum, ginger decoction, pregnant women

### INTRODUCTION

Nausea and vomiting is a common complaint 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 the placental chorionic gonadotropin (HCG) hormone (Zuraida, 2018). Factors causing nausea and vomiting include liver glycogen which is thought to be the trigger for nausea and vomiting complaints, but these complaints will disappear when there is compensation for glycogen metabolism in the body. The increase in the HCG hormone is able to stimulate nausea and vomiting through stimulation of the muscles of the stomach process. Emesis Gravidarum can cause various impacts on pregnant women, one of which is a decrease in appetite which results in changes in the electrolyte balance, namely potassium, calcium and sodium, causing changes in the body's metabolism. Another impact of Emesis Gravidarum is that it can result in weight loss of about 5% because the reserves of carbohydrates, proteins and fats are used for energy (Marianti, 2014; Darulis et al., 2021).

Nausea and vomiting in the first trimester of pregnancy in the community still occur and most of the ways to overcome it still use pharmacological therapy. It would be better if pregnant women are able to overcome the problem of nausea in early pregnancy by using complementary non-pharmacological therapies that are non-instructive, non-invasive, inexpensive, simple, effective, and without adverse side effects. Nausea and vomiting in early pregnancy can also be overcome by using ginger decoction therapy, which can help pregnant women overcome nausea. Based on data in Indonesia, the comparison of the incidence of nausea and vomiting leading to pathological or hyperemesis gravidarum is 4: 1000 pregnancies. It is estimated that 50% to 80% of pregnant women experience nausea and vomiting and

approximately 5% of pregnant women require treatment for fluid replacement and correction of electrolyte imbalances (Zuraida, 2018; Novelia et al., 2021).

Ginger is a medicinal plant and also a spice that has long been known by the people of Indonesia. Ginger is almost spread throughout the wet tropics in the Asian Region. The main centers of ginger plants in Indonesia are North Sumatra, Bengkulu, West Java, Central Java, and East Java. Ginger is very effective in reducing metocloamide, which is a compound that induces nausea and vomiting. Ginger is a plant that is widely used as a cooking spice, flavoring food, drinks and traditional ingredients. Ginger drink is a processed ginger as an herbal medicine to treat nausea and vomiting. And made like a drink using 250 grams of large ginger, 50 grams of sugar, 1,000 ml of water. Then it is processed and given to 10 pregnant women with 100 ml of ginger water for each pregnant woman. Consume ginger drink 2 times a day in the morning and evening for 7 consecutive days. Adequate nutrition during pregnancy is very necessary for the health of the fetus and pregnant women. And the presence of nausea and vomiting in pregnancy needs to be overcome one of them with herbs. As ginger is a type of nutritional complement that has been recognized by the American FDA (food and drug administration), it has also been included in the WHO monograph herbal medicine list (Setyaningrum, 2013).

### METHOD

This research was a quantitative research with the design used Quasi Experiment Design. The population in this study was all pregnant women in the first trimester who experienced emesis gravidarum at PMB R. Agustina during the last month, which consisted of 30 people who experienced emesis gravidarum in the first trimester, the sample in this study was a sample of pregnant women who were experiencing emesis gravidarum consisted of 15 experiment group and 15 for the control group a total of 30. The sampling technique used consecutive sampling. The variables used were the administration of ginger decoction and the frequency of emesis gravidarum in first and second trimester pregnant women. Research instruments can be in the form of a questionnaire (PUQE list of questions), observation forms, statistical tests using the Mann Whitney Test.

### RESULT

#### Univariate Analysis

Table 1. Average Emesis Gravidarum Levels among First Trimester Pregnant Women Before and After Intervention

Emesis Gravidarum	Mean	SD	Min	Max	N
Experiment Group					
Before	9.07	1.163	7	11	15
After	5.27	1.163	4	7	15
Control Group					
Pre test	8.20	1.656	6	11	15
Post test	6.47	1.598	4	8	15

Based on the table above, it can be seen that the emesis gravidarum before being given ginger boiled water in the experimental group was 9.07 with a standard deviation value of 1.163, a minimum value of 7 and a maximum value of 11. And it can be seen that the emesis gravidarum after being given ginger boiled water was 5.27 with a standard deviation value of 1.163, a minimum value of 4 and a maximum value of 7. It is known that emesis gravidarum before control was 8.20 with a standard deviation value of 1.656, a minimum value of 6 and a maximum value of 11. And it is known that after control emesis gravidarum was 6.47 with a standard deviation value of 1.598, a minimum value of 4 and a maximum value of 8.

**Bivariate Analysis**

Table 2. Differences of Emesis Gravidarum Before and After Intervention in Experiment Group

Emesis Gravidarum	Median (min-max)	p
Before	9.00 (7-11)	0.001
After	6.00 (4-7)	

Based on the table above, the results of statistical tests, p-value = 0.001 (p-value < 0.05) which means that there was an effect of giving ginger decoction on emesis gravidarum among trimester I Pregnant Women.

Table 3. The Differences of Emesis Gravidarum Before and After Intervention in Control Group

Emesis Gravidarum	Median (min-max)	p
Before	9.00 (6-11)	0.001
After	7.00 (4-8)	

Based on the table above, the results of the statistical test, p-value = 0.001 (p-value < = 0.05) which means that there was a significant difference of emesis gravidarum before and after intervention in control group.

Table 4. The Differences of Emesis Gravidarum Between Experimental and Control Group after Intervention

Emesis Gravidarum	Mean	p
Control group	18.90	0.029
Experiment group	12.10	

Based on table 4.5 above, the results of the statistical test, p-value = 0.001 (p-value < = 0.05) which means that there was a difference of emesis gravidarum between the intervention group and the control group after intervention.

**DISCUSSION**

It is known that the emesis gravidarum before being given ginger boiled water was 9.07 with a standard deviation value of 1.163, a minimum value of 7 and a maximum value of 11. Emesis gravidarum after being given ginger boiled water was 5.27 with a standard deviation value of 1.163, a minimum value of 4 and a maximum value of 7. The analysis of the difference in the frequency of emesis of pregnant women in the first trimester before and after giving ginger drink showed that the frequency of emesis of pregnant women in the first trimester before being given ginger drink was 5.00 times while after giving ginger drink the mean emesis frequency of pregnant women was 3.50 times. Emesis gravidarum before control was 8.20 with a standard deviation of 1.656, a minimum value of 6 and a maximum value of 11. Emesis gravidarum after control was 6.47 with a standard deviation value of 1.598, a minimum value of 4 and a maximum value of 8.

Based on the results of statistical tests, p-value = 0.001 (p-value < = 0.05) which means that there was an effect of giving ginger boiled water to Emesis Gravidarum in Pregnant Women with TM I. Defrin (2014) Statistical Test Wilcoxon test shows a p value = 0.001 so it can be concluded that there is a very significant effect or there is a significant difference on changes in the frequency of emesis of pregnant women before and after being given ginger drink. In line with the theory expressed by (Winkjosastro 2007) Nausea and vomiting during pregnancy are usually caused by changes in pregnancy hormones such as the hormone Human Chorionic Gonadotropin (HCG) which is produced in the bloodstream to maintain the supply of estrogen and progesterone. Human Chorionic Gonadotrophin (HCG) will reach its highest level at 12-16 weeks of gestation and will directly affect the digestive system such as decreased digestion and intestinal peristalsis accompanied by increased stomach acid and decreased appetite. The sudden increase in hormone levels can cause a stinging effect in the stomach and this effect is in the form of nausea. These hormones can also cause a loss of sugar in the blood which can cause feelings of extreme hunger (Indah & Wahyuningsih, 2021).

According to the theory expressed by (Cunningham 2005), nausea and vomiting during pregnancy is a digestive system disorder during pregnancy that usually occurs in the morning caused by an increase in pregnancy hormones such as the hormone Human Chorionic Gonadotropin (HCG), estrogen and progesterone. The theory also supports the fact that peak levels of hCG occur in the 6th to 12th weeks of gestation, together with hyperemesis generally occurring.

Other factors associated with hyperemesis are autonomic dysfunction, abnormal gastric emptying, and psychological factors. In Hospital this case maybe can be finish with professional staf like doctor, nurse and midwifery (Laksmi, 2008; Putri et al., 2021).

Estrogens and progesterone both have a relaxing effect on gastrointestinal smooth muscle. Steroid hormones, especially progesterone cause gastric emptying time and intestinal transit time to be prolonged, so that it is a predisposing factor for nausea and vomiting. Pregnant women with nausea and vomiting have slow wave dysrhythmias such as tachygastria and bradygastria as well as unstable fasting electrical activity and impaired electrical responses to food digestion. Many factors are suspected to be the cause of hyperemesis gravidarum, according to (Proverawati 2010), hyperemesis gravidarum starts from an untreated condition of emesis gravidarum and this condition can be caused by hormonal factors, psychosocial factors, work, and parity.

According to researchers in the control group, the respondent's condition of hyperemesis gravidarum was not much different from the intervention group, where before the intervention generally mothers also complained of excessive nausea and vomiting that interfered with their daily activities. The mother stated that she had nausea and vomiting more than 7 times in 12 hours and the mother stated that she had nausea and vomiting so that she did not expel anything when she vomited except air (Novelia et al., 2021). This condition is very disturbing and affects the health condition of the mother. The severity of hyperemesis gravidarum in the control group is also seen in the group of mothers aged > 35 years and working mothers who have work ties with other parties such as private employees and civil servants, where the nature of this work can increase psychological stress due to the mother's workload, while Stress is a condition that can worsen nausea and vomiting or hyperemesis in pregnant women. The mechanism of reducing hyperemesis gravidarum with additional warm ginger steeping is the content of natural compounds, which is potassium, magnesium and vitamin B6 (pyridoxine) in ginger which is able to provide carminative properties, which is anti-bloating properties by removing excess gas in the digestive system, so the content of these natural compounds can reduce nausea and vomiting in pregnant women by preventing bloating as a trigger for nausea and vomiting. The main content of ginger, namely gingerol, is a natural compound that can block serotonin, which is a messenger compound for nausea and vomiting, so that if it is blocked, it will reduce nausea and vomiting by increasing relaxation in the digestive organs. Furthermore, ginger is also a strong aromatic stimulant that can control vomiting by increasing intestinal peristalsis so as to increase the body's digestibility so that the stimulation of nausea and vomiting can be reduced.

Researchers concluded that ginger has all the "secretory" effects or "excreting" effects in this case ginger is anti-bloating, then ginger also has antimyetic properties by blocking serotonin as a messenger of nausea so as to increase relaxation in the digestive organs, and ginger has aromatic properties that strong that can increase intestinal peristalsis and all the properties of ginger content can improve the performance of the digestive system so that the frequency of nausea and vomiting can be reduced.

## CONCLUSION

From the results of the study, it is known that the emesis gravidarum before being given ginger boiled water was 9.07 with a standard deviation value of 1.163, a minimum value of 7 and a maximum value of 11. Emesis gravidarum after being given ginger boiled water was 5.27 with a standard deviation value of 1.163, a minimum value of 4 and the maximum value 7. It is known that the emesis gravidarum before the control was 8.20 with a standard deviation value of 1.656, a minimum value of 6 and a maximum value of 11. Emesis gravidarum after control was 6.47 with a standard deviation value of 1.598, a minimum value of 4 and a maximum value of 8. There was an Effect of Giving Ginger Boiled Water on Emesis Gravidarum in Pregnant Women TM 1 ( $p$ -value 0.001). The results of the study of ginger boiled water can be used as an alternative to reduce the frequency of nausea and vomiting in pregnant women. In addition, the role of health workers, especially midwives, is needed to provide education about ginger decoction to reduce the frequency of nausea and vomiting that occurs in first trimester pregnant women.

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