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Research Article

Effectiveness of Generation of Red Ginger and Mint Leaves to Reduce Hyperemesis Gravidarum in the 1st Trimester Pregnant Women

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Abstract

Aims: The incidence of emesis gravidarum is 14 % of all expectant women worldwide. In five European, American, and Australian jurisdictions, approximately 73.5 percent of pregnant women experience emesis. Up to 75 % of expectant women in Indonesia experience nausea and vomiting in the first trimester or early pregnancy. Several pharmacological and non-pharmacological actions can contribute to efforts to reduce the frequency of regurgitation. Non-pharmacologically, herbal plants, such as red ginger and peppermint leaves, are readily available.

Methods: One-group, quasi-experimental, pretest-posttest design. This study's sample consisted of all 35 expectant women in the first trimester of PMB "E" from June to December 2022, and the sampling technique employed was a complete sample.

Results: The average intensity of nausea and vomiting in first-trimester expectant women was 9.54 prior to consuming red ginger and mint leaves, and 5.46 afterward. Red ginger water and mint leaves are efficacious in reducing hyperemia gravidarum in first-trimester pregnant women (p-value = 0.000).

Conclusions: Red ginger water and mint leaves are effective in reducing hyperemesis gravidarum in first-trimester expectant women. It is anticipated that the midwife will provide pregnant women with guidance on how to prepare a decoction of ginger and mint leaves to alleviate hyperemesis gravidarum.

Keywords:

Hyperemesis Gravidarum, Red Ginger, Mint

INTRODUCTION

Hormonal changes occur during pregnancy because Human Chronic Gonadotropin produces more of the female hormones estrogen and progesterone. Emesis gravidarum is believed to be caused by these hormones, but because each woman reacts differently to these changes, not all women experience it (1). WHO reports that 14% of all pregnant women experience nausea and vomiting during their pregnancy. An estimated 73.5 % of pregnant women in the United States, Australia, and five European countries suffer with morning sickness. 50-

75% to 85% of pregnant women in Indonesia report feeling sick during their first trimester (2).

In the first trimester of pregnancy, it is usual to have nausea and vomiting (emesis gravidarum). Although nausea and vomiting are more common in the morning, hence the name "morning sickness," they can still happen at any time of the day or night. Nausea and vomiting are two of the most common complaints from pregnant women due to changes in the gastrointestinal tract and higher levels of Human Chorionic Gonadotropin (hCG) in the blood. Due to a

lack of food intake, the body's electrolyte balance — specifically that of potassium, calcium, and sodium — shifts, leading to metabolic alterations in pregnant women with emesis gravidarum. Hyperemesis gravidarum is a severe form of morning sickness that causes the mother to throw up any food or liquid she consumes, leading to dehydration, weakness, and a decrease in the frequency with which she urinates. This, in turn, causes her blood to become thicker (hemoconcentration), which in turn slows blood circulation and increases the risk of tissue damage and, ultimately, the risk of stillbirth.

Hormonal considerations, the vestibular system, digestion, psychology, genetics, and evolution all have a role in the development of nausea and vomiting. Nausea and vomiting can also be the result of emotional distress, such as in the case of an unplanned, unpleasant, or unwanted pregnancy, or a stressful or overwhelming task. Nausea and vomiting can be made worse by negative emotions like guilt, wrath, fear, and worry (3). Some pregnant women might not feel sick at all, while others get the occasional queasy stomach or even experience constant, debilitating nausea and vomiting. Although mild nausea and vomiting during pregnancy are treatable, severe cases can progress to hyperemesis gravidarum and lead to complications like dehydration, nutritional abnormalities, electrolyte imbalances, and weight loss. Hyperemesis gravidarum, or severe morning sickness, is a serious health risk for both the mother and her unborn child. It increases the risk of complications like early delivery, low birth weight, and even malformations. Hyperemesis gravidarum increases the risk of intrauterine growth retardation (IUGR) in pregnant women (4).

Several pharmacological and non-pharmacological actions have been shown to lessen vomiting frequency. Vitamins B6, B Complex, and others were administered pharmaceutically. Preventative measures

and the use of traditional medicine or complementary therapies, such as ginger, peppermint leaves, lemon, and so on, are examples of non-pharmacological approaches (5).

Serotonin is a neurotransmitter synthesized by serotonergic neurons located in the central nervous system and enterochromaffin cells located in the digestive tract; by blocking serotonin, ginger can provide a feeling of comfort in the stomach, allowing one to overcome nausea and vomiting (6). Because menthol acts as a digestive system and relieves stomach cramps or cramps, mint leaves can be used as a treatment to treat nausea and vomiting, especially in pregnant women. In addition to their antispasmodic and carminative properties, mint leaves also have a modest anesthetic effect, making them useful for relieving nausea and vomiting (7).

Based on a preliminary study that was conducted at PMB "E", in the last 3 months data on trimester I pregnant women who experienced hyperemesis gravidarum, namely in March 2022 there were 14 people, in April 2022 there were 8 people, and in May 2022 there were 10 people. The data above shows that in the last 3 months there has been an increase in the incidence of hyperemia gravidarum in PMB "E". Based on the data above, the researcher is interested in conducting research with the title "Effectiveness of giving red ginger and mint leaves to reduce hyperemesis gravidarum in first trimester pregnant women at PMB "E" in 2022".

METHODS

One-group pre- and post-test design; quasi-experimental. Total sampling was used to compile this study's sample of 35 pregnant women from PMB "E" in the first trimester of their pregnancies between June and December 2022. Univariate and bivariate analysis using the Paired Samples Test are employed for data interpretation.

RESULTS

Table 1. Category of Nausea Vomiting Before Giving Red Ginger Water and Mint Leaves at PMB "E" in 2022

No	Category Nausea Vomiting	Frequency	Percentage
1.	No vomiting	0	0,0
2.	Light	5	14,3
3.	Currently	23	65,7
4.	Heavy	7	20,0
Total		35	100,0

Table 1 shows that out of the 35 respondents, 23 (or 65.7%) reported feeling some degree of nausea or vomiting prior to receiving the red ginger water and mint leaves, 5 (14.3%) reported feeling somewhat nauseated, 7 (20.0%) reported feeling very nauseated, and none (or 0%) reported feeling no nausea or vomiting at all.

Table 2. Categories of Nausea Vomiting After Giving Red Ginger Water and Mint Leaves at PMB "E" in 2022

No	Category Nausea Vomiting	Frequency	Percentage
1.	No vomiting	3	8,6
2.	Light	28	80,0
3.	Currently	4	11,4
Total		35	100,0

According to the table above, the majority of the 35 respondents experienced mild nausea and vomiting after being given red ginger water and mint leaves, with as many as 28 people (80.0%) not experiencing mild nausea and vomiting and as many as 3 people (8.6%) not experiencing mild nausea and vomiting. As many as four patients (11.4%) reported moderate nausea and vomiting, whereas no one reported severe nausea and vomiting (0%).

Table 3 Average Intensity of Nausea Vomiting in First Trimester Pregnant Women Before and After Giving Red Ginger Water and Mint Leaves at PMB "E" in 2022

Intensity of nausea and vomiting					
Red Ginger and Mint Leaf Giving Group	N	Mean	Difference Mean	Min	Max
<i>Pretest</i>	35	9,54	4,08	6	13
<i>Posttest</i>	35	5,46		2	9

According to the table above, the average intensity of nausea and vomiting before being given red ginger and mint leaf drink was 9.54, and the average intensity of nausea and vomiting after being given red ginger and mint leaf drink was 5.46, resulting in a difference of 4.08 in the average value of the intensity of nausea and vomiting before and after being given red ginger and mint leaves.

Table 4 Effectiveness of Consuming Red Ginger Water and Mint Leaves in Overcoming Hyperemesis Gravidarum at PMB "E" in 2022

Group	Nausea and vomiting category	Frequency		Mean		Differen ce Mean	Differen ce SD	P value
		Pre test	Post test	Pre test	Post test			
Red ginger water and mint leaves	No vomiting	0	3	9,54	5,46	4,08	0,360	0,000
	Light	5	28					
	Currently	23	4					
	Heavy	7	0					

According to the table above, the average difference in the intensity of nausea and vomiting in pregnant women in their first trimester before and after being administered red ginger water and mint leaves is 4.08, with a standard deviation of 0.360. The study obtained a p value (0.000) (0.05) in the group given red ginger water and mint leaves, indicating that there was a significant difference after giving red ginger water and mint leaves. And it may be inferred that taking red ginger water and mint leaves is useful in treating hyperemesis gravidarum.

DISCUSSION

Category nausea vomiting before being given red ginger water and mint leaves

According to the study's findings, of the 35 respondents before being given red ginger water and mint leaves, the majority of them experienced moderate nausea and vomiting as many as 23 people (65.7%), mild nausea and vomiting as many as 5 people (14.3%), severe nausea and vomiting as many as 7 people (20.0%), and those who did not experience nausea and vomiting were not found (0%). Nausea, vomiting, or Emesis gravidarum, is a natural symptom that occurs frequently in first-trimester pregnant women. Such is nausea and vomiting in the morning, which can occur at any time of day or night. Emesis gravidarum develops about 6 weeks following the last day of menstruation. In general, pregnant women can adjust to this scenario, albeit severe nausea and vomiting symptoms can linger up to four months. Hyperemesis gravidarum

is defined as extreme nausea and vomiting in pregnant women to the point that it interferes with everyday activities since the overall condition worsens owing to dehydration (8).

These findings are consistent with those of a previous study by (9), in which participants who had not been given red ginger water and mint leaves reported feeling moderately nauseous and vomiting prior to receiving the treatment. (10) research, which found that, before being given a drink of red ginger water and mint leaves, most respondents had significant nausea and vomiting up to 100%, corroborated the findings of the current study. The findings of this study suggest that most participants had moderate-to-severe nausea and vomiting prior to receiving red ginger water and mint leaves. Common complaints include feeling nauseous or sick upon waking up, feeling sick throughout the day, or both. Prolonged dehydration can surely impede the growth and development of the fetus, and continuous vomiting can cause shock if it goes on for too long without being accompanied by any drinking. Pregnant women and their unborn children depend on receiving adequate nutrition. Therefore, herbs are necessary for treating vomiting during pregnancy. Red ginger, which warms the body, and mint leaves, which contain a lot of essential oils, specifically menthol, can treat/eliminate nausea and vomiting by acting on the small intestine/gastrointestinal tract and relieving bloating, nausea, vomiting, cramps, and having a carminative effect.

Nausea and vomiting category after being given red ginger water and mint leaves

The results show that out of 35 participants, 28 (80.0%) experienced mild nausea and vomiting after consuming red ginger water and mint leaves, while only 3 (8.6%) did not have any such reactions to the treatment. Four persons (11.4%) reported feeling moderately nauseous and/or vomiting, while no one reported feeling very nauseous and/or vomiting. The active component in ginger, gingerol, blocks serotonin, which is thought to explain why ginger is effective in lowering nausea and vomiting in the first trimester of pregnancy. Due to the contraction of the stomach that this substance induces, nausea is mitigated when the stomach becomes obstructed. A safe and efficient treatment for morning sickness and vomiting during pregnancy is mint leaves. Because it blocks substances that cause the stomach to contract, ginger can be used as medicine to alleviate nausea and settle an upset stomach (11).

Ginger has been shown to help pregnant women, especially in the early stages of their pregnancies, when they are experiencing nausea and vomiting. Natural chemicals called gingerol and shogaol are credited with giving ginger its health advantages. Both of these chemicals have been shown to hasten gastric emptying, relieving nausea and vomiting in pregnant women. Most authorities agree that 1,000–1,500 milligrams (mg) of ginger per day is a healthy quantity for treating motion sickness and vomiting. Ineffective and perhaps harmful effects may result from higher doses (12). Menthol is found in mint leaves. As a buddy, mint leaves are also great for expecting mothers. Pregnant women frequently experience nausea, and mint leaves have been shown to alleviate this condition (13).

Research by (9), which found that most respondents had minor nausea and vomiting after being administered red ginger water and mint leaves, is consistent with the findings of the present study. The findings of

this study were corroborated by those of a study conducted by (10), which found that 81.8 percent of respondents had experienced mild to moderate nausea and vomiting before being given a drink of red ginger water and mint leaves.

According to the study's assumptions, after being administered red ginger water and mint leaves, most participants reported an 80.0% reduction in mild nausea and vomiting. In the first trimester of pregnancy, women who drink a mixture of red ginger water and mint leaves twice daily (in the morning and evening) for four days see a reduction in nausea and vomiting. Red ginger water and mint leaves are best taken in the morning at 7 a.m. WIB and again at night at 9 p.m. WIB. An anti-emetic action is one of ginger's pharmacological effects on the body. Because of the gingerols, shogaols, galanolactone, and terpenoids it contains, ginger has the ability to combat morning sickness and vomiting during pregnancy. Drinks made from ginger and mint leaves are particularly effective at combating nausea and vomiting. Zingiberene (zingirona), zingiberol, bisabilena, kurkumen, gingerol, flandrena, vitamin A, and bitter resin are all components of ginger's essential oil that have been shown to inhibit the synthesis of serotonin in the central nervous system and brain. It is thought that the presence of enterochromaffin in the digestive tract might alleviate nausea and vomiting by generating a sensation of calmness and security in the stomach. Meanwhile, mint leaves are a tried-and-true remedy for morning sickness in pregnant women. Peppermint oil, mint tea, and eating mint leaves are all ways to enjoy this aromatic herb.

The Effectiveness of Administering Red Ginger Water and Mint Leaves to Reducing Hyperemia Gravidarum

According to the study's findings, pregnant women experiencing morning sickness in their first trimester saw an average 4.08-point improvement after consuming red ginger water with mint leaves, with the

standard deviation being 0.360 points. The examination of data from the group given red ginger water and mint leaves showed a significant difference after treatment, with a p value of (0.000) (0.05). Red ginger water and mint leaves have been shown to be useful in treating hyperemesis gravidarum. Zingerone is responsible for ginger's spicy flavor, while zingiberol is responsible for its signature scent. Ginger's anti-fat mechanism of action is not well understood. The antiemetic properties of ginger are thought to derive from its ability to block serotonin receptors in the brain and digestive tract. Gingerol improved gastrointestinal transit time in animal studies. Experiments on the ileum of pigs have shown that gingerol and other components of ginger have activity as anti-hydroxytryptamine. Ginger also contains galactone, a competitive antagonist at the 5-HT receptor in the ileum that has an anti-emetic effect. Animal studies using gingerol demonstrated ginger's influence on the central nervous system by reducing episodes of vomiting. Another study confirmed that ginger was effective in alleviating the symptoms of morning sickness during pregnancy.

Mint leaves are very efficacious for overcoming bad breath. Besides in addition, peppermint leaves also have other benefits, especially for the body. The use of mint leaves functions more as a therapeutic tool as well as disease prevention. Peppermint leaves are considered herbal plants because they are used more as traditional medicine. Mint leaves contain a lot of essential oils, namely menthol relieves bloating, nausea, vomiting, cramps and contains a carminative effect that works in the small intestine on the gastrointestinal tract so that it can overcome/eliminate nausea and vomiting. Mint leaves are also very suitable as a friend for pregnant women. Because mint leaves can relieve nausea which is closely related to morning sickness which is often experienced by women who are pregnant (14).

When compared to the findings of a study by Putri Oktaviani (2021), which found that the t test acquired a significant value of 0.000,

where it was 0.05, the present study's findings are consistent. This suggests that emesis gravidarum can be alleviated in pregnant women in their third trimester by consuming red ginger water and mint leaves. One. The findings of this study were corroborated by those of (10) study, in which it was reported that the Mann Whitney test revealed a significant difference after administration of red ginger and mint leaves with a p-value of 0.004 0.05, indicating a difference between the treatment groups.

Researchers believe that treating first trimester hyperemesis gravidarum with red ginger water and mint leaves is effective. As can be observed from red ginger's content, it has warming effects on the body. In addition to preventing nausea and vomiting, ginger can help speed up digestive processes. First, it was discovered that giving ginger drink is very effective in overcoming nausea and vomiting in the third trimester of pregnancy. This is because ginger contains about six compounds, including the essential oil of zingiberene (zingirona), zingiberol, bisabilena, kurkumen, gingerol, and flandrena, all of which have been shown to have antiemetic (anti-vomiting) activity. First. There was less throwing up and nausea after drinking the ginger tea. Red ginger, unlike its milder elephant ginger counterpart, is packed with flavor and vital oils. The oleoresin and essential oil found in this red ginger variety are excellent medicinal and herbal components. Meanwhile, the menthol in mint leaves helps to improve circulation and eases indigestion, motion sickness, and muscle cramps. Because of its mild anesthetic effect, carminative properties, and antispasmodic effects that work in the small intestine of the gastrointestinal tract to overcome or eliminate nausea and vomiting, menthol, an essential oil found in mint leaves, has the potential to facilitate the digestive system and relieve stomach cramps or cramps. Because of their widespread acceptance and ease of availability, herbal remedies like red ginger and mint leaves have been found to be

beneficial for treating pregnancy-related nausea and vomiting.

CONCLUSION

Most pregnant women in their first trimester reported feeling moderately nauseous and vomiting (65.7%), but only mildly nauseous and vomiting (80%) after drinking red ginger water and mint leaves. In the first trimester of pregnancy, the average severity of morning sickness was 9.54 before women consumed red ginger water and mint leaves, and 5.46 thereafter. Giving pregnant women red ginger water and mint leaves has been shown to be effective in reducing hyperemesis gravidarum in the first trimester (p0.0001).

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