

The effect of ginger herbal drink on reducing the degrees of hyperemesis gravidarum in pregnant women.

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Abstract

Background: Nausea and vomiting are common early pregnancy complaints. Nausea and vomiting that are not properly managed can result in hyperemesis gravidarum, which can have a negative effect on both the mother and the fetus in the womb. Ginger contains flying oil (essential oil), which is refreshing and inhibits the vomiting reflex, which can help pregnant women with nausea and vomiting. The purpose of this study is to demonstrate that giving ginger herbal drinks can help pregnant women with hyperemesis gravidarum degree I.

Methods: The pre-test post-test control group design was used in this study as a quasi-experimental design. The population for this study was pregnant women in the village of Kedungring Balongpanggung Gresik who had experienced hyperemesis gravidarum. The sample size was 32 respondents using a simple random sampling technique. It consists of 16 people divided into two groups: Those given a ginger herbal drink and those given water and sugar. Treat it with a herbal tea made with white/small yellow ginger/ginger extracted from up to 2.5 grams of slices and brewed with 250 ml of hot water and 1 tablespoon of sugar (10 grams) twice daily for four days. A questionnaire was used to collect data on the frequency with which hyperemesis gravidarum was felt within 24 hours. The Paired t-Test was used to analyze the data.

Results: The frequency of hyperemesis gravidarum decreased by -56.971 in the treatment group that received ginger herbal drinks.

Conclusion: In pregnant women, giving ginger herbal drinks significantly increases the risk of hyperemesis gravidarum degree I. Ginger herbal drinks can be used safely and effectively to alleviate nausea and vomiting in pregnant women.

Keywords: Ginger herbal drinks, Hyperemesis gravidarum, Pregnant women.

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Introduction

Pregnancy is distinct from natural conception, as it results in the development of a foetus in the mother's uterus pregnancy alters the mother's physical, psychological, and hormonal changes in the mother's body. Nausea and vomiting is very common in pregnancy, with rates as high as 91% this results in a variety of symptoms, one of which is Hyperemesis Gravidarum or nausea and vomiting that occurs in early pregnancy [1].

Hyperemesis Gravidarum (HG) is a fairly rare and extreme form of nausea and vomiting of pregnancy with distinct features and outcomes. A recent met analysis found that its prevalence in pregnancy to be between 0.3% and 3.6%, with an average of 1.1% According to the World Health Organization (WHO), hyperemesis gravidarum affected 12.5% of all pregnancies worldwide [2]. In Indonesia, data from pregnant women with hyperemesis gravidarum indicated that the condition affected 14.8% of all pregnancies.

Gravidarum Hyperemesis Although the cause is unknown, it may be influenced by several predisposing factors, including increased progesterone, estrogen, and human Chorionic Gonadotropin (hCG), which may act as a trigger for nausea and vomiting. Hyperemesis gravidarum dehydrates the mother, impairs fetal growth and development, disrupts electrolyte balance, depletes the mother's carbohydrate reserves, tears the lining of the oesophagus and stomach tissue, and can also result in abortion, low birth weight, premature birth, and malformations in new-borns.

Hyperemesis gravidarum is a clinical diagnosis based on typical presentation and exclusion of other causes of nausea and vomiting in the pregnant woman (ACOG, 2004). A universal definition has yet to be established, although it is classically defined by persistent nausea and vomiting, signs of dehydration, ketonuria, and weight loss of 5% or more of prepregnancy weight. Onset of symptoms typically occurs between 6 and 8 weeks' gestation and peaks by 12 weeks. Most women experience relief of symptoms by 20 weeks' gestation.

However, 10% to 20% of affected women experience symptoms throughout pregnancy and symptoms may even persist postpartum. Despite a low overall prevalence, the impact on women, families, and society is substantial [3]. Pour Sharif and colleagues found that more than 80% of women with HG reported negative psychosocial effects, including socioeconomic burdens, relationship difficulties, and psychological sequelae. Furthermore, the severity of symptoms of nausea and vomiting is correlated with decreased Quality of Life (QOL).

Hyperemesis gravidarum is the most common indication for hospitalization during the first half of pregnancy and is second only to preterm labour in pregnancy-related hospitalizations. Although no conclusive pathogenesis has been determined, some theories are favoured more than others. In general, the cause is thought to be multifactorial, with the placenta playing a large role in the disorder. Several placental hormones have been explored as causal components including human Chorionic Gonadotropin (hCG), oestrogen, progesterone, human growth hormone, prolactin, and leptin. Of these, hCG is most often implicated as a cause. The peak occurrence of HG is at the time of highest hCG levels. In addition, the association of HG with conditions associated with increased placental mass and elevated hCG levels such as multifocal and molar pregnancies supports this theory. It is thought that hCG may stimulate upper gastrointestinal secretory processes or that the structural similarity between hCG and thyroid-stimulating hormone may cause excessive thyroid stimulation, leading to overwhelming nausea and vomiting [4]. The latter is supported by findings of declining thyroid-stimulating hormone levels mirroring elevations in hCG levels during early pregnancy and the high prevalence of excessive thyroid stimulation in women with HG. Found in as many as two-thirds of afflicted women, this excessive thyroid stimulation is often referred to as gestational transient thyrotoxicosis and is characterized by elevated free T4 and suppressed thyroid-stimulating hormone levels during the first half of pregnancy without evidence of autoimmune disease. Other causes of hyperthyroidism in pregnancy, such as Graves' disease, are not typically associated with severe nausea and vomiting, emphasizing the role of hCG, rather than solely the state of hyperthyroidism.

However, research has failed to conclusively link elevated hCG levels to HG. Proposed explanations for this include dissimilar research methods, as the sensitivity of hCG assays varies, and the existence of hCG isomers. It is theorized that the type of hCG, rather than simply the amount, may play a role in the development of nausea and vomiting of pregnancy. In addition, there is individual variation in sensitivity to hCG. While hCG is a likely cause of nausea and vomiting of pregnancy, hCG alone cannot be responsible for all cases of HG, as symptoms often persist beyond the first trimester after hCG levels have peaked. Another factor commonly theorized to play a role in the development of HG is oestrogen. Support for this hypothesis stems from estrogen-related gastrointestinal changes in pregnancy, including delayed gastric emptying and increased intestinal transit time.

There are two types of treatments available for nausea and vomiting: pharmaceutical and non-pharmacological. Pharmacologically, vitamin B6 and iron/Fe tablets were administered as blood enhancers. Non-pharmacological measures include using traditional medicine to prevent nausea and vomiting, such as ginger, which can be brewed to alleviate nausea and vomiting with few side effects.

Ginger has been shown to have anti-inflammatory properties in pharmacological studies. The results of this test indicate that ginger extract in hot water can inhibit cyclooxygenase and lipoxygenase activity, thereby lowering prostaglandin and leukotriene levels [5]. The first benefit of ginger is that it contains ginger oil (essential oil), which is refreshing and inhibits the gag reflex, while ginger promotes blood circulation and nerve function. As a result of ginger's non-pharmacological benefits, including antiemetic, tension can be dissipated, the head becomes clear, and nausea and vomiting can be suppressed (anti-nausea). Pregnancy hyperemesis. According to Fiorina's 2018 study, the intervention group given ginger tablets experienced a general decrease in nausea and vomiting compared to the placebo group. As a result, researchers are interested in the effect of ginger herbal drinks on reducing hyperemesis gravidarum degree I in pregnant women.

Materials and Methods

This is a quasi-experimental study with a pre-post-control group design. The population for this study was pregnant women in the village of Kedungpring Balongpanggung Gresik who had experienced hyperemesis gravidarum. The sample size was 32 respondents using a simple random sampling technique [6]. It consists of 16 people divided into two groups: Those given a ginger herbal drink and those given water and sugar. The study's independent variable was ginger herbal tea. The ginger used is white ginger/small yellow/ginger merit, sliced and brewed with 250 ml of hot water and 1 tablespoon of sugar (10 grams), taken twice daily for four days. The dependent variable is a decrease in the number of times per day that hyperemesis gravidarum occurs. A questionnaire was used to collect data on the frequency with which hyperemesis gravidarum was felt within 24 hours. For four consecutive days, measurements were taken 1 × 24 hours before and 1 × 24 hours after treatment was administered. The paired t-test was used to analyse the data [7].

Results

Table 1 shows that the frequency of hyperemesis gravidarum using a paired t-test statistic with a significance level (0.05) in the experimental group obtained results of $0.000 < 0.05$, meaning that there is a significant difference in the frequency of hyperemesis gravidarum before and after being given ginger herbal drink.

Variable	Group		Value
	Experiment (n=16)	Control (n=16)	
Before intervention mean ± SD	184.895 ± 71.622	260.240 ± 134.356	0.0601
After intervention mean ± SD	127.924 ± 44.172	259.68 ± 133.541	0.0021
Difference before-after intervention value	0.0012	0.0612	-
The difference in frequency of hyperemesis gravidarum mean ± SD	-56.971 ± 54.132	-0.557 ± 0.603	0.0003

Table 1. Difference in frequency of hyperemesis gravidarum in THE control group and experimental group in Kedungpring village, Balongpanggang district, Gresik.

While in the control group, the results were $0.000 > 0.05$, meaning that there was no significant difference in the frequency of hyperemesis gravidarum before and after being given water and sugar. In the experimental group, there was a decrease of -56.971 while in the control group there was a decrease of -0.557 indicating that there was a difference in the effectiveness of reducing the frequency of hyperemesis gravidarum in the experimental group and the control group with a value of. So it can be concluded that there is an effect of giving ginger herbal drink on hyperemesis gravidarum degree I in pregnant women.

Discussion

The analysis of the frequency of hyperemesis gravidarum in the experimental group before and after the intervention obtained a value of $=0.001$, indicating that there was a significant decrease in the frequency of hyperemesis gravidarum following the intervention, indicating that giving ginger herbal drink could help reduce the frequency of hyperemesis gravidarum grade I in pregnant women. During pregnancy, there will be hormonal changes, so the complaints in the first trimester of pregnant women are usually nausea and vomiting [8]. HCG is the hormone that causes nausea and vomiting. At 12-16 weeks of gestation, the HCG hormone will increase and reach its highest level, causing decreased digestion and intestinal peristalsis, increased stomach acid, and decreased appetite.

Ginger contains essential oils, starch, fibre, and ash, as well as gingerol, which is beneficial to the body and has been shown to have antiemetic activity (anti-vomiting), blocking serotonin so that when the muscles of the digestive tract contract, they relax and weaken, alleviating nausea. Ginger has been used since antiquity as an antiemetic herb for NVP in Chinese and Ayurvedic medicine, and the scientific studies have substantiated these observations. Multiple studies have shown that ginger was effective as an antiemetic in NVP and that it did not alter or affect the pregnancy outcome.

This is supported by Hashanah's 2014 research, which found that a third of a teaspoon brewed with water and consumed four times a day had an antiemetic effect comparable to metachlorobromide and could stimulate pregnant women's appetites.

This is also supported by Handayani and Indah's 2019 research. According to the article, pharmacological studies indicate that ginger has anti-inflammatory properties. This is demonstrated by mixing the ginger extract with hot water, which inhibits cyclooxygenase and lipoxygenase activities, resulting in a decrease in blood prostaglandin and leukotriene levels. Demonstrate that candy ginger is effective at reducing vomiting in pregnant women with emesis gravidarum [9]. Another study published found that ginger was effective and efficacious in reducing nausea and vomiting in pregnant women. Pregnant women were given a supplement containing 1 gram of ginger extract daily, and symptoms of nausea and vomiting were significantly reduced.

In one of the earliest study, performed a double-blind randomized crossover trial where ginger (250 mg) was administered to pregnant women with HP for 4 days and interrupted by a 2-day wash out before administering the alternative medication in the second 4-day period. The severity and relief of symptoms before and after each period were evaluated by 2 scoring systems, and the authors observed that 70.4% of the subjects preferred ginger when compared with the placebo have also observed that ginger was effective in preventing NVP when ginger (250 mg) was taken 3 times daily after meals and once before bedtime for 4 consecutive days when compared with the placebo-treated group. Furthermore, the average number of vomiting episodes over the 4 days of treatment was lesser when compared to the same patient before initiation of the ginger. Ginger treatment did not cause spontaneous abortions, affect the term delivery, or cause any congenital anomalies. The extract of ginger (EV.EXT35; equivalent to 1.5 g of dried ginger) given 4 times per day for 4 days help in reducing the symptoms of morning sickness. They observed that the nausea experience and retching were reduced, while there was no significant effect on vomiting.

The follow-up of the pregnancies showed ginger did not affect the birth weight, gestational age, Apgar scores, and frequencies of congenital abnormalities. Oral administration of ginger (0.5 g twice a day) for 1 week was observed to be as effective as dimenhydrinate (50 mg twice a day) in the treatment of nausea and vomiting during pregnancy and did not possess any severe side effects.

In another randomized controlled equivalence trial with 8 to 16-week-pregnant women with NVP, administering standardized and quality controlled ginger (350 mg × 3 times a day=1.05 g) daily for 3 weeks caused a reduction in the nausea, retching, and vomiting. The effect was comparable to that of vitamin B6 (25 mg × 3 times a day=75 mg) used as a known control. Recent studies have also shown that administering ginger (1g/day) was more effective than vitamin B6 (40 mg/day) for 4 days in decreasing both NVM (below 17 weeks of gestation). Consuming ginger did not increase the risk of pregnancy complications, pregnancy outcome, and congenital abnormalities [10]. There was also no difference in the mean birth weight, birth length, and head circumference for babies of mothers having taken ginger. Ginger does not appear to increase the rates of major malformations above the baseline rate of 1%-3% and has a mild effect in the treatment of NVP. All these observations suggest ginger to be effective in preventing NVP.

Ginger is an effective antiemetic and can be used to alleviate morning sickness in pregnant women. Another advantage is that the price is affordable, the product is readily available, it is safe and harmless for pregnant women to make. Thus, ginger may be used instead of antiemetic medications to treat emesis gravidarum.

Conclusion

Giving ginger herbal drinks can significantly reduce the frequency of pregnancy-induced hyperemesis. Because ginger herbal drink can be used as a safe and effective herbal medicine to treat hyperemesis gravidarum, pregnant women who experience hyperemesis gravidarum are advised to consume ginger herbal drink as a safe and effective herbal medicine to treat hyperemesis gravidarum.

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