

Complementary Therapies in Reducing of Emesis Gravidarum

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ABSTRACT

Nausea and vomiting in early pregnancy are very common, affecting approximately 80% of the pregnancies, hyperemesis gravidarum is a severe form affecting 0.3–1.0% of the pregnancies. Emesis gravidarum can be treated using complementary therapies such as ginger and lemon. Ginger and lemon have a pharmacological function as an antiemetic. Objective: to determine the effect of ginger water and lemon inhalation in reducing emesis gravidarum. Method: pretest-posttest experiment with control group design. The experimental group was given ginger water, the control group was given lemon inhalation. The study was conducted at the Nagaswidak Health Center in June - July 2022. The sample consisted of 60 pregnant women who met the inclusion criteria using purposive sampling technique. Data were analyzed using paired sample t test and non-parametric Mann Whitney test. The results of the paired sample t test of the experimental group obtained $t : 4.726$ p value 0.004 ($p < 0.05$) and the control group obtained $t : 4.878$ p value 0.005 ($p < 0.05$). The non-parametric Mann Whitney test obtained p value of 0.004 ($p < 0.05$). There was a change in the scale of nausea and vomiting in the experimental group and the control group before and after the intervention.

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INTRODUCTION

Nausea and vomiting in early pregnancy are very common, affecting approximately 80% of the pregnancies, hyperemesis gravidarum is a severe form affecting 0.3–1.0% of the pregnancies (Gabra et al., 2019). Mild to moderate nausea and vomiting are common in early pregnancy and known as emesis gravidarum, while the most severe form is called Hyperemesis gravidarum (Azizah et al., 2022). Hyperemesis gravidarum can seriously affect health and well being of the pregnant women and her unborn foetus. Furthermore, it has deleterious effects like dehydration, metabolic acidosis due to starvation, metabolic alkalosis resulting from loss of hydrochloric acid, electrolyte imbalance like hypokalaemia, and weight loss (Lubis et al., 2019).

Nausea experienced during pregnancy can be overcome by using complementary therapies

with easily available ingredients such as ginger, peppermint leaves and lemon. One of the pharmacological functions of ginger is antiemetic (anti-vomiting) (Lete & Allué, 2016). Ginger is an aromatic stimulant containing zingiberene (zingirona) essential oil, zingiberol, bisabilene, curcumin, gingerol, flavonoids, vitamin A and bitter resin which can block serotonin which is a neurotransmitter synthesized in serotonergic neurons in the central nervous system and enterochromaffin cells in the digestive tract. digestion so that it can provide a sense of comfort in the stomach that can overcome nausea and vomiting (Rofi'ah et al., 2019).

Ginger is a rhizome plant with the Latin name *Zingiber officinale* which belongs to the Zingiberaceae family. The chemical constituents of ginger are shogaols, gingerols, bisabolene, zingiberene, zingiberol, Abidah et al. The Effect of Ginger Herbal Drink on Hyperemesis Gravidarum in the First Trimester Pregnant Women, sesquiphellandrene, essential oils, and resins. Ginger contains flying oil (essential oil) which is refreshing and blocks the gag reflex, while gingerols and shogaols can improve blood circulation and nerves work well and have anti-nausea, anti-vomiting, analgesic, sedative, antipyretic, and anti-bacterial effects (Abidah et al., 2022).

One of the pharmacological functions of ginger is antiemetic (antivomiting) which is an ingredient that is able to expel gas in the stomach which will control vomiting by increasing intestinal peristaltic movements (Ozkur et al., 2022). About 6 compounds in ginger have been shown to be effective antiemetics. These compounds are more directed at the stomach wall than the central nervous system. Ginger is usually safe as herbal medicine; ginger does not have acute toxicity at doses commonly consumed for food or medicine (Ningsih et al., 2020).

Lemon oil is one of the herbal oils that is considered a safe drug in pregnancy, according to a study 40% of women used lemon aromatherapy to relieve nausea and vomiting and 26.5% reported being effective for controlling nausea and vomiting symptoms (Safajou et al., 2020). This study was to determine the effect of inhalation of lemon oil aromatherapy on emesis gravidarum in first trimester pregnant women. By using the literature study method, an analysis was carried out on the results of searching journals and articles with a review of existing theories. This study revealed that there was an effect of giving inhaled lemon aromatherapy on morning sickness in pregnant women (McParlin et al., 2016).

Ginger is an herbal plant that has long been known to prevent nausea and vomiting, but people do not know more about the benefits of ginger for pregnant women (Fejzo et al., n.d.). Therefore, the purpose of this study was to analyze the effect of giving ginger herbal drink in reducing the level of hyperemesis gravidarum in first trimester pregnant women. Consisting of 48 in the experimental group given ginger herbal drink and 48 in the control group given water and sugar to determine whether or not ginger drink was effective in reducing the frequency of hyperemesis gravidarum (Azizah et al., 2022).

Ginger and lemon are herbal plants that have long been known to prevent nausea and vomiting, but people do not know more about the benefits of ginger and lemon for pregnant women (Wegrzyniak et al., 2012). Therefore, the purpose of this study was to analyze the effect of complementary therapy with ginger water and lemon inhalation in reducing emesis gravidarum in first trimester pregnant women. It consisted of 30 in the experimental group given ginger herbal drink and 30 in the control group given lemon inhalation (Maternity et al., 2017).

RESEARCH METHOD

Design of research used is quantitative research using experimental research methods with a pretest-posttest approach with control group design. The experimental group was given ginger water intervention, group 2 was given lemon inhalation intervention. The intervention was carried out for two weeks. Measurement of the nausea and vomiting scale using a questionnaire was carried out before and after the intervention was given.

Samples were all pregnant women with gestational age 12 weeks with emesis gravidarum obtained through interviews with a scale of mild to severe nausea and vomiting totaling 60 people. The sampling technique used is purposive sampling. Inclusion criteria were pregnant women who had no history of gastrointestinal disease, heart disease, gallstone disease, hypoglycemia, diabetes mellitus and a history of allergy to aromatherapy. Exclusion criteria were pregnant women who were taking anti-nausea drugs. Analysis of the data used to measure the decrease in the scale of nausea and vomiting in each group before and after the intervention used a dependent t test (Paired Sample T Test). To measure the difference in the average decrease in nausea and vomiting scale in the ginger group and the lemon inhalation group, an independent t test (Mann Whitney Test).

RESULTS AND DISCUSSIONS

Univariate Analysis

Table 1. . Homogeneity Test

Responden Characteristic	Experiment		Control		Jumlah	%	p value
	Jumlah	%	Jumlah	%			
Age							
Risk (< 20 and > 35 years old)	15	25	12	20	27	45.0	0,108
No risk (20 -35 years old)	15	25	18	30	33	55.0	
Parity							
Risk (> 3 child)	13	22.5	18	30	31	53.5	0.174
No risk (\leq 3 child)	17	27.5	12	20	29	46.5	
Profession							
Work	12	20	15	25	28	45.0	0.121
Doesn't work	18	30	15	25	32	55.0	
Income							
Low	12	20	15	25	28	45.0	0.101
Tall	18	30	15	25	32	55.0	

Table 1 shows the p value of each characteristic in the experimental group and the group control shows a number > 0.05 . This means that the characteristics of respondents between groups are equal or homogeneous.

Bivariat Analysis

Table 2. Emesis Gravidarum Scale Before and After Intervention (Pretest and Posttest)

Group	Mean	SD	Min	Max	p value
Experiment	3.4575	0.420	2	4	0.001
Control	3.1245	0.456	1	3	0.002

Based on table 2 obtained p value of 0.001 in the experimental group and 0.002 in the control group. this means that there is an effect of ginger water and lemon inhalation on the emesis gravidarum scale.

Multivariat Analysis

Table 3. . Result of Non-Parametric Mann Whitney Test Differences in Nausea Vomiting Scale Decrease in the Experimental Group and the Control Group

Group	N	Mean Rank	Sum of Rank	Z	ρ
Experiment	30	18.83	289.00	-2.893	0.004
Control	30	10.07	156.00		

Based on table 3, the results of the non-parametric Mann Whitney test obtained p value 0.004 ($p < 0.05$), it can be concluded that there is a difference in the decrease in nausea and vomiting scale in the experimental group and the control group.

Discussion

a. Decrease in the scale of emesis gravidarum in the experimental group

The results of the study listed in table 2 show that the experimental group given ginger water experienced a decrease in the emesis gravidarum scale by an average of 4. Based on the measurement of the emesis gravidarum scale using the Pregnancy Unique Quantification of Emesis and Nausea (PUQE)-24 scoring system, the administration of ginger water decreased moderate to mild emesis gravidarum scale.

How to overcome emesis gravidarum can be done by giving traditional ingredients such as ginger which can overcome nausea and vomiting by brewing. Ginger contains essential oil levels, starch content, fiber content, ash content and contains gingerol which is useful for the body which is proven to have antiemetic activity (anti-vomiting) which blocks serotonin so that during contraction of the muscles of the digestive tract it will relax and weaken so that nausea will decrease (Abramowitz et al., 2017).

Ginger infusion overcomes nausea and vomiting in pregnant women in the first trimester, where nausea and vomiting are caused by changes in the endocrine system during pregnancy, mainly due to high fluctuations in HCG levels (Stanisiere et al., 2018). Ginger contains zingerone substances and the aroma of ginger is caused by zingiberol substances (Fitria, 2018). Ginger can work by blocking receptors serotonin and causing an antiemetic effect on the gastrointestinal system, thereby reducing nausea and vomiting (Herrell, 2014).

The results of this study are in line with research conducted by Adibah (2022) on The Effect of Ginger Herbal Drink on Hyperemesis Gravidarum in the First Trimester Pregnant Women. The average level of emesis gravidarum before the intervention of ginger herbal drink in the intervention group was 2.2083 and 2.2292 in the control group with p value = 0.806 which means there was no difference in the average frequency of emesis gravidarum while after being given the intervention, the average level of emesis gravidarum in the intervention group was 3.4375 and 2.2917 in the control group with p value = 0.000, which means that there is a difference in the average frequency level of emesis gravidarum in the intervention group and the control group after being given the intervention (Abidah et al., 2022).

Ginger has a distinctive aroma that serves to reduce nausea and vomiting in pregnant women (Kabir et al., 2018). When consumed, ginger water can warm the body and provide a sense of comfort. Another advantage is that the price is affordable, easy to get in the market, safe and harmless because pregnant women can make it themselves. So that ginger can be used as an alternative treatment to overcome emesis gravidarum before using pharmacological antiemetic drugs.

b. Decrease in the scale of emesis gravidarum in the experimental group

The results of the study listed in table 2 show that the control group given lemon inhalation experienced a decrease in the emesis gravidarum scale by an average of 3. Based on the measurement of the emesis gravidarum scale using the Pregnancy Unique Quantification of Emesis and Nausea (PUQE)-24 scoring system, the administration of lemon inhalation decreased moderate to mild emesis gravidarum scale.

One of the treatments for emesis gravidarum is a non-pharmacological method, namely lemon aromatherapy. Aromatherapy lemon therapy contains 66-80% limonene, geranyl acetate, nerol, linalyl acetate, 0.4-15% pinene, 1-4% pinene, 6-14% terpinene and myrcen. Chemical compounds such as geranyl acetate, nerol are useful for antidepressants, Nantiseptics, anti spasmodics to relieve feelings of anxiety, stress, and fatigue (Kia et al., 2014).

The results of this study are in line with research conducted by Safajou and Sultani (2014) which showed that mean (SD) scores of nausea and vomiting intensity before the intervention and on the first day of intervention were not significantly different between the two groups, but became significant on the second, third, and fourth days of intervention. The results showed that the effect inhalation lemon on the mean intensity of nausea and vomiting was significant in the aromatherapy group ($F_{2,84} = 22.92, p < 0.001$) but was not significant in the placebo group ($F_{2,78} = 0.26, p = 0.836$) (Kia et al., 2014).

Aroma therapy Lemon contains limonene, citral, linalyl, linalool, terpineol which can stabilize the central nervous system, cause feelings of pleasure, increase appetite, improve blood circulation, and as a sedative (Sulistyowati, 2021). Nausea in pregnant women can be reduced when inhaled aromatic elements transmit messages to the nervous system so that feelings of pleasure, relaxation and calm appear. This condition makes pregnant women can control their nausea well.

CONCLUSION

The conclusion of this study is that there is an effect of complementary therapy on emesis gravidarum. giving warm ginger water can reduce the scale of nausea and vomiting in pregnant women. Likewise, lemon inhalation has an effect on reducing the scale of nausea and vomiting in pregnant women.

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