

THE EFFECT OF LEMON TEA AROMATHERAPY ON EMESIS GRAVIDARUM REDUCTION IN PRIMIGRAVIDA TRIMESTER I

Nike Sari Oktavia¹, Dewi Susanti², Revikha Anggalia³

¹²³Department of Midwifery, Health Polytechnic Ministry of Health Padang

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ABSTRACT

Emesis gravidarum is common in first-trimester pregnancy. Based on the clinical competence of midwifery found cases 86% of the first-trimester pregnant women experience emesis gravidarum. Emesis gravidarum if it can not be given the disturbance of maternal nutrition that will affect the health of mother and fetus. Management of non-pharmacological emesis gravidarum can use lemon tea aromatherapy. The purpose of this research is to know the influence of lemon tea aromatherapy on the reduction of emesis gravidarum in the first-trimester primigravida in Working Area of Pauh Health Centre in Padang 2017. This study was using pre-experiment and with one group pretest-posttest design. This study was done in August 2017 until April 2018 in the work area of Pauh Health Centre. The population are first-trimester pregnant primigravida with the sample of the 16, used a technique the sample collection purposive sampling. An instrument used in is sheets of observation and a question. The analysis data consisted of univariate and bivariate using computerized with the dependent t-test. The result of research of average score of emesis gravidarum before treatment that is 4 and after treatment 1. After undergone at paired simple obtained the average difference before and after treatment is 3. H_0 was rejected with p -value = 0.000 < 0.05 it means that there is the influence aromatherapy lemon tea against the reduction of emesis gravidarum in the first-trimester primigravida. The conclusion of this study is there's the influence of lemon tea aromatherapy on the reduction of emesis gravidarum in the first trimester of primigravida. It is hoped that this research can be an alternative for a midwife in giving nonpharmacologic therapy to reduce the emesis gravidarum complaints in the first-trimester primigravida.

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Corresponding Author:

Nike Sari Oktavia
Department of Midwifery, Health Polytechnic Ministry of Health Padang, Indonesia
Jl. Raya Siteba Nanggalo Padang , 25146 Telp : (0751) 7051718
Email : ikesay@gmail.com

INTRODUCTION

Pregnancy is an intrauterine fetal growth and development starting from conception and ending until the onset of labor. In pregnancy, there will be both anatomical and physiological changes in pregnant women, most of which have occurred immediately after fertilization and continue during pregnancy. Changes that occur in pregnant women can be one of the causes of discomfort in pregnancy.^{1,2}

The body of a pregnant woman experiences an adjustment process for her pregnancy, one of which is nausea and vomiting. Nausea and vomiting that occurs in pregnancy are known as emesis gravidarum. Emesis gravidarum is one of the earliest and most common symptoms that occur in pregnant women. Emesis gravidarum occurs

around 65-70% in pregnant women, and there is still the rest of morning sickness accompanied by mild vomiting but does not interfere with daily activities.³

90% of women will experience some form of nausea and vomiting during pregnancy from mild symptoms of mild nausea to severe conditions. The state of emesis gravidarum is normal but if it is not given treatment it will continue to be severe, it can interfere with the intake of nutrients for the mother and fetus. Disruption of nutrition in the mother can lead to weight loss, electrolyte disturbances, metabolic disorders, and dehydration so that blood becomes thick which can slow blood circulation and cause rupture of capillary blood vessels in the stomach and esophagus. Emesis gravidarum can continue to be hyperemesis gravidarum which can cause fat burning in pregnant women to be less than perfect, resulting in ketones in the blood which can damage central nervous system function which can lead to nystagmus and impaired diplopia awareness.^{4,5,6}

Emesis gravidarum occurs mostly in primigravida which is around 60-80% and in multigravida mothers around 40-60%. Usually, emesis gravidarum starts between late on the first and second days and lasts around 14 weeks. Nausea and vomiting usually occur in the morning but will continue throughout the day. Based on research reports Lacroix et al (2000) found that nausea and vomiting were reported by 75% of pregnant women and average nausea and vomiting lasted for 35 days. Half of them improved by 14 weeks gestation, and 90% by 22 weeks.^{7,8}

Based on preliminary studies conducted in several Independent Practice Midwives (BPM) in Pasaman and the existing health centers in Padang City in August 2016 and February 2017 out of 129 first trimester pregnant women there were 111 people who experienced complaints of nausea and vomiting. This means that as many as 86% of pregnant women experience emesis gravidarum in early pregnancy.

According to the results of Lacase et al.'s study of 367 pregnant women 78.47% had nausea and vomiting that occurred in the first trimester, with a degree of nausea and vomiting that was 52.2% had mild nausea and vomiting, 43.3% had moderate nausea and 2.5% experience severe nausea and vomiting. In the second trimester, some pregnant women still experience nausea vomiting by 40.1% with the following details 63.3% have mild nausea and vomiting 35.9% have moderate nausea and vomiting and 0.8% have severe nausea and vomiting. This condition is due to hormonal changes during a young pregnancy. But this latest research says nausea has a positive effect like that reduce the risk of miscarriage.^{9,10}

Causes of emesis gravidarum due to hormonal changes in the endocrine system that occur during pregnancy, mainly due to an increase in the hormone human chorionic gonadotropin (hCG) which causes an increase in the hormone estrogen. Increased estrogen hormone will inhibit the performance of the enzyme kynureninase that affects tryptophan. Tryptophan is a protein that is essential for humans but only obtained as a nutrient intake from the digestive process with proteolytic enzymes. In tryptophan nausea vomiting functions to release serotonin and niacin, so that the five senses are more sensitive and nausea and vomiting will occur more easily.³

Hormonal explosions will give direct irritation to the abdominal wall and this will cause nausea and also cause rapid cleansing of sugar in the blood, which will cause hunger and pain. Nausea that occurs in some cases is accompanied by vomiting that occurs at 6 weeks, rarely lasts for more than the first three months and then slowly stops.¹¹

Nausea and vomiting in first-trimester pregnant women in the community is still occurring and most of the ways to overcome it are still using pharmacological therapy. Pharmacological treatment will have an effect on both mother and fetus, one of which is to increase the incidence of spontaneous abortion during young pregnancy. So it would be better if pregnant women were able to overcome the problem of nausea and vomiting in

early pregnancy by using non-pharmacological complementary therapies first, one of which is aromatherapy.¹²

Based on a study in Iran in overcoming emesis gravidarum 49.2% of pregnant women were using herbal medicines and 39.3% of them had used drugs for digestive problems which were 5.71% due to nausea and vomiting. The majority of midwives in Iran use non-pharmacological methods, namely aromatherapy, phytotherapy, and pills.¹³

Aromatherapy is a specific element of herbal medicine, usually; aromatherapy has a reputation as a unique therapy by extracting essential oil components contained in plants by distillation, cold, and extraction of carbon dioxide or solvents. Aromatherapy aims to influence a person's mood and health, often combined with alternative medical practices. Aromatherapy has its own performance mechanism to affect the nervous system, from entering the bloodstream, then to the nervous system and working in the limbic system of the brain. This is related to instinct, emotional and hormonal control behavior. Aromatherapy that is often used to reduce emesis gravidarum in pregnant women is aromatherapy peppermint, ginger oil blended with peppermint and aromatherapy lemon.^{4,14}

Lemon is a fruit that is quite popular among the people of Indonesia, this can be seen in the number of products that use lemon as a raw material, such as floor cleaners, air fresheners and also widely used as flavorings in food. So that Indonesian people are quite familiar with the aroma of lemon. Lemon essential oil (Citrus lemon) is herbal oil that is considered a safe drug in pregnancy. Four drops of lemon essential oil help and relieve morning sickness. Increased use of lemon oil in pregnancy due to the higher interest in using herbal medicines in pregnancy and due to the availability of lemon in all seasons.¹⁵

The lemon essential oil is one of the aromatherapy that has many benefits which can refresh the body, overcome flatulence, overcome nausea and vomiting, overcome headaches, and arouse appetite. The aroma of lemon provides a calming effect, refreshes the body and affects mood and emotions. The aroma of lemon oil smells of orange, which is hard and clean, the better the quality of lemon essential oil, the more tender aroma.^{16,17,18}

Based on research conducted by Astriana et al conducted in South Lampung Regency in 2015, the average frequency of nausea before lemon aromatherapy was 4.53 times a day and then the average after giving aromatherapy lemon to 3.13 times a day, with a p-value $0.000 < 0.05$. These results indicate that the frequency of respondents' nausea on average before and after lemon inhalation has a significant difference because the p-value obtained < 0.05 , so it can be concluded that the administration of lemon aromatherapy in inhalation has an effect on nausea in pregnancy.¹⁹

Based on a study conducted by ParisaYasvari et al in 2014 conducted in Iran about the effect of lemon aromatherapy on nausea and vomiting in pregnant women without distinguishing primigravida and multigravida. There was a statistically significant difference between the two groups with an average score of nausea and vomiting on the second and fourth days with the p-value ($p = 0.017$ and $p = 0.039$). Nausea and vomiting on the second and fourth days in the intervention group were lower than the control group.¹³

Based on Sherly et al's 2016 study of the effect of lemon aromatherapy on the intensity of nausea and vomiting in patients with chronic renal failure undergoing hemodialysis, there were differences in the intensity of nausea and vomiting in patients before and after lemon aromatherapy with p-value = 0,000 where the p-value $< \alpha$ (0.05). It was also in line with Ardhy et al's 2014 study that the aroma of lemon therapy and progressive muscle relaxation influenced the decrease in the intensity of nausea and vomiting during chemotherapy in breast cancer patients.^{20,21}

Pauh Health Center is one of the health centers with the highest number of pregnant women in Padang City. Based on a preliminary study by interviewing 5 pregnant women in the Pauh Health Center working area, 5 pregnant women did not know how to

reduce emesis gravidarum non-pharmacologically and immediately went to a health worker using pharmacological therapy. Therefore, researchers tried the scents of 2 varieties of lemon, named varieties of lemon tea and lemon squash. 4 of these pregnant women liked the smell of lemon tea, and 1 other pregnant woman liked the smell of lemon squash varieties, so the results of the experiment the researchers decided to use the type of lemon aroma derived from the variety of lemon tea. Researchers decided to use part of the lemon juice tea because lemon juice tea is the most abundant part of essential oils that are used as the main ingredient in making aromatherapy lemon tea.

Researchers are interested in conducting research on the effect of lemon tea aromatherapy on reducing emesis gravidarum in primigravida trimester I. Indonesian people are familiar with the lemon scent but people do not yet know the benefits of lemon aromatherapy on reducing emesis gravidarum so this research can be used as an alternative to reduce emesis gravidarum.

METHOD

This type of research uses a pre-experimental study with a one group pretest-posttest design research design. In this study conducted on 16 samples using purposive sampling technique that is in accordance with the inclusion and exclusion criteria. Inclusion criteria include Good general condition, Do not use pharmacological therapy or other non-pharmacological therapies in addition to therapies prescribed by the researcher during the assessment period, Like the aroma of lemon tea, Willing to be a respondent. Exclusion Criteria: Pregnant women who at the time of the study experienced excessive nausea and vomiting (Hyperemesis Gravidarum), pregnant women who in the middle of the study consumed drugs that reduce nausea and other non-pharmacological therapies. The dependent variable in this study is emesis gravidarum while the independent variable is aromatherapy lemon tea. Nausea of pregnant women is assessed 4 days in a row before used of lemon tea aromatherapy and assessed the average than after being given aromatherapy lemon tea, the nausea is reassessed for 4 consecutive days and recalculated average nausea. The instrument used for data collection in this study is using the Numeric Rating Scale (NRS). The Numeric Rating Scale uses the number 0 on the leftmost line not to throw up and the number 10 on the far right line for vomiting. The analysis data consisted of univariate and bivariate using computerized with the dependent t-test.

RESULTS

Data collection was carried out on 16 primigravida mothers who were in the working area of Pauh City Health Center. Univariate analysis to see the frequency distribution of emesis gravidarum with the following results:

Table 1. Distribution of Average Emesis Gravidarum Before Treatment

Variable	N	Mean	SD	Min	Max
Before Treatment	16	4,50	1,31	2,75	6,50

In table 1 shows that the average emesis gravidarum score in primigravida trimester I in the Pauh Padang Health Center in 2017 before being given treatment is 4.50 (2.75-6.50).

Table 2. Average Distribution of Emesis Gravidarum After Treatment

Variable	N	Mean	SD	Min	Max
After Treatment	16	1,76	0,73	0,75	3

Table 2 shows that the average emesis gravidarum score after being given treatment is 1.76 (0.75-3).

Table 3. Effect of Aromatherapy Lemon Tea on Emesis Before and After Treatment

Variable	N	Mean	Nilai t	p-value
Before and After Treatment	16	2,73	13,03	.000

In table 3 for bivariate analysis, the results of Paired Sample T-Test were obtained before and after being given lemon aromatherapy tea p-value = 0.000 < 0.05. This shows H_0 was rejected, so it can be concluded that there is an effect of lemon tea aromatherapy on the reduction of emesis gravidarum in trimester I pregnant women in the Pauh Padang Health Center work area in 2017.

DISCUSSION

From the results of the study on primigravida mothers who experienced emesis gravidarum in the working area of Pauh Health Center in Padang City, there was a difference between giving lemon tea aromatherapy before and after treatment. It can be seen that the mean emesis gravidarum before the treatment was 4.50, then the total mean after being given lemon tea aromatherapy was 1.76. Based on the Paired Sample T-Test test shows the results of $p = 0,000$ (p -value < 0.05). These results indicate that there is an influence of lemon tea aromatherapy on decreasing the average score of emesis gravidarum in primigravida trimester I mothers.

Based on research conducted by Sherly et al in 2016 conducted a study on the effect of lemon aromatherapy on the intensity of nausea and vomiting in patients with chronic renal failure undergoing hemodialysis. This study used a pre-prepared questionnaire and used the Numeric Rating Scale (NRS) with information 0 = did not experience nausea vomiting, 1-3 = nausea mild vomiting, 4-6 = nausea moderate vomiting, 7-10 = nausea, and severe vomiting. The results in this study were that there were differences in the intensity score of nausea and vomiting in patients before and after being given lemon aromatherapy with p -value = 0.000.20

This was also reinforced by Ardhy et al's 2014 study that lemon aromatherapy and progressive muscle relaxation influenced the decrease in the intensity score of nausea and vomiting during chemotherapy in breast cancer patients. The research method used in this study is different from the research conducted by researchers, the method used is the pre-posttest with the control group. In this design randomization was carried out, meaning that grouping of control group and treatment group was carried out based on random or random, then pretest was carried out in the two groups and followed by experiments in the experimental group, after a few posttest sessions in the two groups. Data collection tools used in this study are the Numeric Rating Scale (NRS). Based on the results of the study, the results of p -value 0.01 that means there is an effect of lemon aromatherapy on decreasing the intensity scale of nausea and vomiting after chemotherapy in breast patients.²¹

When experiencing nausea and vomiting and inhaling lemon tea aromatherapy will occur several mechanisms both in the nervous system structure and occur in muscle muscles that affect the occurrence of nausea and vomiting. The mechanism of lemon tea aromatherapy in reducing emesis gravidarum is several ways. First, lemon tea aromatherapy compounds contain substances that are monoterpenes, namely limonene, α -pinen, β -pinen. The monoterpenes themselves are muscolotropic, meaning that monoterpenes will inhibit the enzyme acetylcholine esterase, by activating

spasmogenic acetylcholine. Therefore the levels of monoterpenes work directly on the muscles including the respiratory smooth muscles of the diaphragm and abdominal muscles resulting in a decrease in nausea and vomiting. Lemon tea oil is also an essential oil that plays a role in brain stimulants, which can increase the activity of the parasympathetic nerves so as to reduce nausea.^{22,23}

Lemon tea essential oil also has a strong anti-stress effect so that when inhaling lemon tea aromatherapy will feel a relaxed atmosphere and a stable emotion and lemon tea aromatherapy is a stimulant that affects the locus coeruleus which then releases noradrenaline, serotonin, and endorphin so that nausea vomiting can decrease due to there is a sense of relaxation and stable emotions. This lemon tea aromatherapy also works by suppressing the cranial nerves so that there is a decrease in nausea and vomiting.²⁰

Lemon tea aromatherapy has been proven to reduce emesis gravidarum in primigravida trimester I mothers. Two types of lemons namely lemon tea and lemon squash generally have the same content, but after an experiment to smell it by blending both lemon tea and lemon squash skin then tried on Pregnant women, generally pregnant women prefer the smell of lemon tea aroma due to a softer smell, the researchers decided to choose lemon tea. This is in accordance with the theory that there is that the aroma of lemon tea is softer than lemon squash so that the aroma of lemon tea is preferred by pregnant women.²⁴

The compounds that most play a role in lemon tea aromatherapy in reducing emesis gravidarum are compounds that belong to the class of monoterpenes and also the workings of aromatherapy that directly work on the nervous system. The method also differs in research. This study was conducted for 4 consecutive days by giving lemon tea aromatherapy to every 5 cc primigravida. They using it by dripping 2-3 drops of aromatherapy lemon tea on the tissue inhaled when the mother felt nauseous at 0.5 inches from the nose for 5-10 minutes by inhaling a 3x deep breath. The results continue to prove that aromatherapy using lemon tea aromatherapy remains influential in reducing emesis gravidarum.²⁵

The number of doses of lemon tea aromatherapy is distinguished from previous studies where the dose in the previous study was 10 cc while in this study only 5 cc, it was done to avoid excessive use of aromatherapy by pregnant women so as to avoid the possibility of side effects that occur if overused. The choice of lemon tea aromatherapy besides because of the compounds it contains also because the smell of lemon is also a smell that is familiar to the people of Indonesia so that it will be more easily accepted by pregnant women and because of a simpler way of using only inhaled so as to minimize the occurrence of side effects.

At the time of the study, researchers conducted interviews and observations to respondents regarding the effect of lemon tea aromatherapy on emesis gravidarum, respondents admitted by inhaling lemon tea aromatherapy caused freshness and a sense of relaxation, thereby reducing the emesis gravidarum experienced by respondents. Lemon is not only used as an air freshener but lemon is also widely used as a cooking spice, also for body beauty and fitness as well as being used as medicine. The most important thing is that lemon tea aromatherapy is aromatherapy that is safe to use by pregnant women so that pregnant women do not need to worry about the fetus. The use of lemon tea aromatherapy is very simple, easy and without side effects and gives a sense of relaxation when used so that it can be used as the best choice in overcoming emesis gravidarum non pharmacologically.

Based on the analysis of researchers, lemon tea aromatherapy has an effect in reducing emesis gravidarum, because the workings of aromatherapy which work directly on the nervous system and are musculotropic are also caused by the easy and simple use

of aromatherapy so primigravida can use aromatherapy anytime and anywhere to reduce emesis the gravidarum he felt.

CONCLUSION

Based on the results of the study and discussion about the effect of lemon tea aromatherapy on reducing emesis gravidarum in primigravida trimester I in the Pauh Padang Health Center work area in 2017 using 16 respondents can be summarized as follows: (1) The average score for emesis gravidarum before the treatment of primigravida trimester I in the Pauh Health Center in 2017 was 4.50; (2) The average score of emesis gravidarum after the treatment of primigravida trimester I in the Pauh Health Center in 2017 was 1.76; (3) There is an effect of lemon tea aromatherapy on reducing emesis gravidarum in primigravida trimester I in the Pauh Health Center in 2017 with $p = 0,000$ (p -value < 0.05)

REFERENCES

1. Kusmiyati, Yuni dkk. 2009. Perawatan Ibu Hamil. Yogyakarta : Fitramaya
2. Padila. Keperawatan Maternitas. Yogyakarta: Nuha Medika; 2014.
3. Manuaba, Ida Ayu Chandranita dkk. Buku Ajar Patologi Obstetri. Jakarta: EGC; 2009.
4. Denise, Tiran. Mual Muntah dalam Kehamilan. Jakarta: EGC; 2009.
5. Manuaba, Ida Bagus Gde. Ilmu Kebidanan Penyakit Kandungan dan Keluarga Berencana untuk Pendidikan Bidan. Jakarta: EGC; 1998.
6. Manuaba, Ida Bagus Gede dkk. Pengantar Kuliah Obstetri . Jakarta: EGC; 2007.
7. Winkjosastro, Hanifah. Ilmu Kebidanan. Jakarta: Yayasan Bina Pustaka; 1992
8. Cuningham, F.G dkk. Obstetri Williams. Jakarta: EGC; 2005
9. Lacasse, Anaïs dkk. Epidemiology of nausea and vomiting of pregnancy: prevalence, severity, determinants, and the importance of race/ethnicity. BMC Pregnancy Childbirth [sumber online] Juli 2009 [Accessed 12 Agustus 2017]. Available at URL: <https://www.ncbi.nlm.nih.gov>
10. Chopra, Deepak. Panduan Holistik Kehamilan Dan Kelahiran. Bandung: PT. Mizan Pustaka; 2006.
11. Mayo Clinic. Kehamilan yang Sehat. Jakarta: PT. Mitra Media Publisher; 2011.
12. Jordan, Sue. Farmakologi Kebidanan. Jakarta: EGC; 2003.
13. Kia, Parisa Yasvari, dkk. The Effect Of Lemon Inhalation Aromatherapy On Nausea and Vomiting of Pregnancy. Iranian Red Crescent Medical Journal [online] Maret 2014 [accessed 10 Agustus 2017]. TAvailable at URL: <https://www.ncbi.nlm.nih.gov>
14. West, Zita. Natural Pregnancy Panduan Lengkap Menjalani Kehamilan Secara Alami. Jakarta: Puskata Bunda; 2010.
15. Press, Althea. Essential Oil For Beginners. California: Althea Press; 2013.
16. Jaelani. Aromaterapi. Edisi I. Jakarta: Pustaka Populerobor; 2009.
17. Akhmad, Perdana. Self Healing dengan Energi Ruqyah. Sukabumi: Adamssein Medika; 2015.
18. Koensomardiyah. A-Z Aromaterapi. Yogyakarta: Lily Publisher; 2009.
19. Astriana dkk. 2015. Pengaruh Lemon Inhalasi Aromatherapy Terhadap Mual Pada Kehamilan di BPS Varia Mega Lestari S.ST, M.Kes Batupuru Kecamatan Natar Kabupaten Lampung Selatan Tahun 2015. Jurnal Kebidanan [online] Oktober 2015 [accessed 09 Agustus 2017]. Available at URL:

-
- <https://media.neliti.com/media/publications/227233-inhalasi-lemon-mengurangi-mual-muntah-pa-c458d0f0.pdf>
20. Akoit, Yolanda Sherly. Pengaruh Aromaterapi Lemon Terhadap Intensitas Mual dan Muntah Pada Pasien Gagal Ginjal Kronik Yang Menjalani Hemodilisa Di RSUD Ungaran Dan RSUD Ambarawa.[online] Januari 2017 [Accessed 09 Agustus 2017]. Available at URL :perpusnwu.web.id/karyailmiah/documents/5394.pdf
 21. Widagdo, Prasetyoadi dkk. 2014. Pengaruh Aromaterapi Lemon Dan Relaksasi Otot Progresif Terhadap Penurunan Intensitas Mual Muntah setelah Kemoterapi Pada Pasien Kanker Payudara di Rumah Sakit Telogrejo Semarang. Jurnal Ilmu Keperawatan dan Kebidanan[online] Desember 2014 [Accessed 09 Agustus 2017]. Available at URL:ejournal.stikestelogorejo.ac.id/index.php/jikk/article/view/318
 22. Balchan, Maria Lis. Aromatherapy Science. London: Pharmaereutical Press; 2006.
 23. Muchtaridi dan Moelyono. Aroma Terapi Tinjauan Aspek Kimia Medisinal. Yogyakarta: Graha Ilmu; 2015.
 24. Bibit Tanaman Buah Jeruk Lemon Tea. [Accessed 15 september 2017]. Available at: URL: <https://tanamanmart.com/produk/jeruk-lemontea/>
 25. Yin, Wong Ling. Effectiveness of aromatherapy in relieving postoperative nausea and vomiting for adult patients in post anesthesia care unit (PACU). [online] 2014 [Accessed 25 Oktober 2017] TAvailable at URL: [https:// nursing.hku.hk](https://nursing.hku.hk)