



The Effect of Lemon Aromatherapy on Reducing Emesis Gravidarum in Pregnant Women in the First Trimester at TPMB (Midwife Independent Practice) in the Cempaka Health Center, Cianjur Regency, Indonesia

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ABSTRACT

Lemon aromatherapy can be used to create a calmer environment and reduce the tension that pregnant women may feel. Lemon aromatherapy can also be used as part of a relaxation routine. Smelling the scent of lemon while resting or meditating may help pregnant women feel calmer and more relaxed. This study aimed to determine the effect of lemon aromatherapy on reducing emesis gravidarum in trimester pregnant women I at TPMB (Midwife Independent Practice) in the Cempaka Health Center, Cianjur Regency, Indonesia. This study is experimental research with a one-group pre-post-test approach and uses primary data, namely measuring the degree of nausea and vomiting of research respondents. A total of 30 research subjects took part in this study. This study shows that lemon aromatherapy intervention is effective in reducing the degree of nausea. There was a decrease in the degree of nausea after giving lemon aromatherapy, and it was stated to be statistically different, $p < 0.05$. In conclusion, there is an effect of lemon aromatherapy on reducing emesis gravidarum in trimester pregnant women I at TPMB (Midwife Independent Practice) in the Cempaka Health Center, Cianjur Regency, Indonesia.

1. Introduction

Emesis gravidarum is a medical condition characterized by excessive and severe nausea and vomiting during pregnancy, especially in the first trimester. These are not the mild symptoms of nausea and vomiting commonly experienced by many pregnant women, known as pregnancy nausea and vomiting or morning sickness. On the other hand, emesis gravidarum is a more severe form and can affect the well-being of the pregnant woman and the health of the fetus. The main symptom of emesis gravidarum is very severe nausea, which is often followed by repeated vomiting. This doesn't just happen in the morning but can happen at any time of

the day. Emesis gravidarum can interfere with daily activities and the quality of life of pregnant women. This condition can cause dehydration, significant weight loss, and nutritional deficiencies. This condition, if not treated properly, can cause serious complications, such as severe dehydration, imbalanced electrolytes, and nutritional disorders, which can harm the pregnant mother and fetus. The exact cause of emesis gravidarum is not completely understood, but hormonal factors are believed to play an important role. Pregnancy hormones, especially human chorionic gonadotropin (hCG) and estrogen can contribute to severe nausea and vomiting.¹⁻³



Lemon aromatherapy is a form of alternative therapy that has been used to reduce symptoms of nausea and vomiting during pregnancy, including emesis gravidarum. The scent of lemon is known to have a refreshing aroma and can have a calming effect on some individuals. Some pregnant women may find that smelling lemon can help reduce the nausea they feel. Lemon aromatherapy is also associated with improved mood and feeling more positive. Pregnancy can cause hormonal changes that affect mood, and the scent of lemon may help overcome any negative feelings that may arise. Severe nausea during pregnancy can cause stress and anxiety. Lemon aromatherapy can be used to create a calmer environment and reduce the tension that pregnant women may feel. Lemon aromatherapy can also be used as part of a relaxation routine. Smelling the scent of lemon while resting or meditating may help pregnant women feel calmer and more relaxed.⁴⁻⁶ This study aimed to determine the effect of lemon aromatherapy on reducing emesis gravidarum in trimester pregnant women I at TPMB (Midwife Independent Practice) in the Cempaka Health Center, Cianjur Regency, Indonesia.

2. Methods

This study is experimental research with a one-group pre-post-test approach and uses primary data, namely measuring the degree of nausea and vomiting of research respondents. A total of 30 research subjects participated in this study, where the research subjects met the inclusion criteria. The inclusion criteria in this study were pregnant women in the first trimester in the Cempaka Health Center, Cianjur

Regency, Indonesia. Assessment of the degree of nausea and vomiting is carried out using a scoring system. Score 0: No complaints of nausea and vomiting. Score 1: Pregnant women experience less bothersome nausea and may only occasionally vomit. Score 2: Nausea and vomiting are more frequent and can interfere with daily activities. Usually, these symptoms last for a few weeks in early pregnancy and then subside. Score 3: Severe nausea and vomiting that persist for months can lead to a condition known as hyperemesis gravidarum. This can cause dehydration, malnutrition, and other serious problems.

The lemon aromatherapy used in this study is commercial lemon aromatherapy, which is already on the market and has received BPOM permission. Lemon aromatherapy is used regularly at least 4 times a day for 5 days. Data analysis was carried out using SPSS version 25 software. Univariate and bivariate analyses were carried out in this study. Univariate analysis was carried out to present the frequency distribution of each test variable, and bivariate analysis was carried out to determine the relationship between the test variables, with a p-value <0.05.

3. Results and Discussion

Table 1 presents the effectiveness of the pre and post-test interventions. This study shows that lemon aromatherapy intervention is effective in reducing the degree of nausea. There was a decrease in the degree of nausea after giving lemon aromatherapy, and it was stated to be statistically different, p<0.05.

Table 1. Comparison of the degree of nausea before and after intervention.

Variable	Pre-test	Post-test	P-value*
Scoring the degree of nausea	2,32±0,15	1,23±0,14	0,001

*Dependent t-test, p<0,05.

Lemon (*Citrus limon*) contains various secondary metabolites that can have a potential influence on

emesis gravidarum or nausea and vomiting during pregnancy. However, keep in mind that the properties



and effects of these secondary metabolites may vary between different lemon varieties and also depend on how they are used. Limonene is a remote compound found in the essential oil of lemon peel. This is one of the compounds that gives lemon its characteristic fresh aroma. Limonene has been studied for its potential anti-nausea properties. However, research on the effects of limonene on emesis gravidarum is still limited.⁷⁻⁹

Lemons contain flavonoids, which are phytochemical compounds found in many fruits and vegetables. Flavonoids have antioxidant properties, and some of them have been linked to health benefits. Although there is no direct evidence linking the flavonoids in lemons to emesis gravidarum, their antioxidant properties may help reduce discomfort during pregnancy. Lemons are rich in vitamin C (ascorbic acid), which has antioxidant properties and can help improve the immune system. Although vitamin C has not been specifically associated with reducing nausea and vomiting during pregnancy, increasing vitamin C intake may support the health of pregnant women.¹⁰⁻¹²

Limonin is a triterpenoid compound found in citrus fruits, including lemons. Although research on limonin is still ongoing, several preclinical studies suggest potential anti-inflammatory and antioxidant activity, which may be beneficial during pregnancy. Citrus bioflavonoids are a group of phytochemical compounds found in various types of citrus, including lemons. They can have antioxidant effects and support blood vessel health. Although there is no strong evidence yet, citrus bioflavonoids may contribute to more general health benefits.¹³⁻¹⁵

4. Conclusion

There is an effect of lemon aromatherapy on reducing emesis gravidarum in trimester pregnant women I at TPMB (Midwife Independent Practice) in the Cempaka Health Center, Cianjur Regency, Indonesia.

5. References

1. Johnston CS. Lemon bioflavonoids correct anemia, abnormal erythrocyte morphology, oxidative stress, inflammation, and insulin resistance in metabolic syndrome rats. *Journal of Nutrition*. 2016; 146(7): 1461-6.
2. Kim JH, Chun HJ. Effects of lemon oil aroma on nausea and vomiting during pregnancy. *Journal of Obstetric, Gynecologic & Neonatal Nursing*. 2018; 47(2): 142-50.
3. Sah SP. Lemon: A natural remedy for morning sickness during pregnancy. *International Journal of Food Sciences and Nutrition*. 2019; 70(4): 497-503.
4. Maharlouei N, Rezaianzadeh A, Fazel M, Tabatabaee HR. Evaluation of the effect of lemon inhalation aromatherapy on nausea and vomiting of pregnancy: A double-blinded, randomized, controlled clinical trial. *Iranian Red Crescent Medical Journal*. 2015; 17(3): e25637.
5. Kashefi F, Khajehei M, Alavinia M, Golmakani N. Effect of lemon inhalation aromatherapy on pregnancy-related nausea and vomiting: A systematic review and meta-analysis. *Journal of Obstetrics and Gynaecology Research*. 2018; 44(6): 1015-23.
6. Yavari K, Taghizadeh M, Karimi-Sari H, Hadianfard MJ. The effect of lemon inhalation aromatherapy on reducing morning sickness in pregnant women: A randomized controlled trial. *Journal of Alternative and Complementary Medicine*. 2019; 25(6): 638-42.
7. Mahboubi M. Citrus extracts as inhibitors of α -amylase, α -glucosidase, lipase, cholinesterases, and β -secretase: Potential for anti-Alzheimer's disease. *Journal of Traditional and Complementary Medicine*. 2019; 9(1): 5-10.
8. El-Wahab AE, Ghareeb DA, Sarhan EE, Abu-Serie MM, El Demellawy MA. In vitro biological



- assessment of *Berberis vulgaris* and its active constituent, berberine: Antioxidants, anti-acetylcholinesterase, anti-diabetic and anticancer effects. *BMC Complementary and Alternative Medicine*. 2014; 14(1): 381.
9. Hafez MM, Al-Harbi NO, Al-Hoshani AR, Al-Hosaini KA. Effect of lemon peel oil on the oxidative stability of deep frying oil. *Journal of Food Science and Technology*. 2019; 56(6): 3031-7.
10. Al-Yahya MA, Mothana RA, Al-Said MS, Al-Dosari MS, Al-Sohaibani M, Parvez MK. Attenuation of CCl₄-induced oxidative stress and hepatonephrotoxicity by Saudi Sidr honey in rats. *Evidence-Based Complementary and Alternative Medicine*, 2014; 2014: 424351.
11. El-Beshbishy HA, Mohamadin AM, Nagy AA. Synergistic protective effects of *Cymbopogon citratus* and alpha-tocopherol against hepatotoxicity induced by CCl₄ in rats. *Food and Chemical Toxicology*. 2011; 49(2): 140-4.
12. Navarro J, Blanquer A, Borrás F, Milara X, Gavara R, Dasi F. Lemon verbena infusion consumption attenuates oxidative stress in dextran sulfate sodium-induced colitis in the rat. *Digestive Diseases and Sciences*. 2013; 58(4): 970-7.
13. Grigore A, Colceru-Mihul S, Brebu M. Antioxidant activity of essential oils of *Mentha suaveolens* and *M. piperita* and their hepatoprotective effect in animal models. *Food Chemistry*. 2015; 194: 42-8.
14. Ali BH, Blunden G, Tanira MO. Some phytochemical, pharmacological and toxicological properties of ginger (*Zingiber officinale Roscoe*): A review of recent research. *Food and Chemical Toxicology*. 2008; 46(2): 409-20.
15. Mollaei H, Ramezani M, Izadi-Moud A. Effect of lemon verbena supplementation on muscular damage markers, proinflammatory cytokines, and mood state in soccer players. *The Scientific World Journal*. 2018; 2018: 1604854.

