

Hot Ginger And Hot Lime Drinks To Decrease Emesis Gravidarum

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Abstract: Emesis gravidarum is a normal grievance which is experienced by pregnant mother in the first trimester and can become hyperemesis gravidarum so that it increases the risk of disorders of pregnancy. Nausea and vomiting happen on 60%-80% primigravida and 40%-60% multigravida. Nausea and vomiting in pregnancy can be avoided with pharmacology and nonpharmacologic therapy. One of the nonpharmacologic therapies to control nausea and vomiting is ginger and lime. This research aimed to prove the effects of hot ginger and hot lime drinks to first-semester pregnant mother. This research used quasi experiment study of pre-posttest design in a group of hot ginger and hot lime drinks. The population was all pregnant mothers in the first semester who experienced emesis gravidarum in Grogol, Health Center, Kediri, Indonesia. The samples were 32 people by using purposive sampling technique. Collecting the data was conducted directly through the observation. Data analysis shows that hot ginger and hot lime drinks are effective in decreasing emesis gravidarum so that people get the benefit from hot ginger and hot lime drinks as alternative medicine before consuming antiemetic medicine. Provision of hot ginger drinks may reduce stress, both physical stressor and emotional stressor, which is to reduce the intensity of nausea and vomiting and reduce anxiety. The pregnant mother can also make the variants of ginger and lime to decrease the frequency of emesis gravidarum because they are easy to get, simple and effective without side effects and they do not harm the mother and the fetus.

Keywords: emesis gravidarum, drinks, ginger, lime, pregnancy.

1. Introduction

The treatment toward nausea and emesis often use pharmaceutical drugs whereas natural medicine also can decrease excessive intervention for pregnant mother, one of the ways is to give a hot ginger drinks and/or a hot lime drinks to decrease morning sickness. Ginger nutrition as anti-nausea and emesis that can be used for pregnant mother to decrease morning sickness. Ginger can prevent nausea because it is able to block serotonin and decrease metoclopramide, that are chemical compound that can generate stomach contracts, so that pregnant mother feels nausea and emesis. the content of hot ginger drinks is safe from bad ingredient and it can be made at home so that pregnant mother does not need to worry. Other than that, ginger is also easy to get in the market and it is cheap. It contains essential oil that can decrease emesis gravidarum so that ginger can be as alternative treatment before consuming antiemetic medicine. The research that is conducted by [1], also proves the effectiveness of ginger in pregnant mother in solving emesis gravidarum. In this research, it involved 32 pregnant mothers that had emesis gravidarum. They were given supplement that contained 1-gram ginger extract every day. Turns out, the result showed good things in which there were significant decline of emesis gravidarum symptom in those pregnant mothers [2]. Beside ginger, lime also has benefits to pregnant mother. Lime contains essential limonin and linalool and flavonoid such as poncirin, hesperidin, rhoifolin, maringin and synephrine and also N-methylamine. Lime contains elements of chemical compounds that have benefits such as; limonene, linalyl acetate, geranyl acetate, citral phellandrene, and citric acid. For health, essential oil is for stabilize nervous system so it can generate quiet effect for anyone [3]. Pre-survey data which was done in Grogol Health Center, Kediri District, Indonesia, in April 2017, it is obtained that in March 2017, there were 57 pregnant mothers who check their pregnancy. All of surveyed pregnant women, there are women who had nausea and emesis. Most pregnant women though that they will get anti-nausea drug so that their problem was solved. Physiologic inconvenience that happened to pregnant mother were nausea and emesis. It

can be prevented by treatment of non-pharmacology. In general, people still use anti-nausea drug to decrease emesis gravidarum. It can be concluded that emesis gravidarum in the first trimester is interference in first place of pregnancy. So that researcher is interested with the research regarding the benefits of hot ginger and hot lime drinks to decrease emesis gravidarum in pregnant mother in first semester and it prevents the hyperemesis.

2. Methods

This type of this research is quantitative research with comparison design, in which there were 2 groups that receive one different intervention, which are the provision of hot ginger drinks and hot lime drinks. Before it is given intervention, they will be given a pretest and after intervention, they will be given a posttest. The research design is to distinguish the group toward work procedure. Giving of hot ginger with the composition: ginger emprit (*Zingiber officinale*, smallest and hottest ginger species in Indonesia) sliced 2 grams, sugar 1 tablespoon, and 250 ml warm water with a temperature of 60-700C, given 2x1 a day for 4 days. A giving of hot lime with the composition: A lime (*Citrus limon*) with a diameter of 1.5 - 2.5 cm, 1 tablespoon sugar and 250 ml warm water with a temperature of 60-700C, given 2x1 a day for 4 day.

3. Result

Based on data collecting about influence of hot ginger and hot lime drinks toward emesis gravidarum in Grogol Health Center, Kediri district, which was done June, 15 to July, 15 2017, it was obtained 32 respondent met inclusion criteria. The technique of taking sample purposively in which respondents who will be observed is according to inclusion and exclusion criteria. Collecting the data before and after intervention, the intensity of nausea and emesis were measured by questioner from collecting data as follow:

3.1 The change of nausea and emesis before and after given hot ginger drinks to decrease emesis gravidarum

Based on the research which was conducted 4 days to each pregnant mother, it was known that there was degradation of emesis gravidarum after consuming hot ginger drinks. The severe intensity of emesis gravidarum of two respondents became there is no respondents who had severe nausea and emesis. Then the degradation of mild nausea and emesis had enhancement from 9 respondents to 14 respondents.

Table 1: The changes of nausea and emesis intensity before and after consuming hot ginger drinks

Treatment	N	Mean	SD	Min	Max
Before Drinking Ginger	16	7.62	3.594	3	16
After Drinking Ginger		3.25	2.408	2	10

Statistics result of nausea and vomiting intensity by giving hot ginger drinks is in the value of T count = 3.5 with T table = 118.0 The results by computerized calculations gained p -value = 0.001. It appears that T count < T table and p -value < α (0.05), it shows that there is an effect on before and after given hot ginger drinks to reduce emesis gravidarum.

b. The change of nausea and emesis intensity before and after consuming hot lime drink to reduce emesis gravidarum

The research which has done to pregnant mother with emesis gravidarum in Grogol Health Center, there was degradation of nausea and emesis intensity after consuming hot lime drink. Before or after intervention, there were no respondent who had severe nausea and emesis, then there was degradation of moderate nausea and emesis intensity from 8 respondents became 13 respondents.

Table 2: The changes of nausea and emesis intensity before and after consuming hot lime drinks

Treatment	N	Mean	SD	Min	Max
Before Drinking Lime	16	6.44	3.326	2	12
After Drinking Lime		4.06	3.549	2	12

While on the intake of lime drinks, gained a T count value of 3.5 and T table of 81 and the results through computerized calculations gained p -value of 0.002. It shows that T count < T table and p -value < α (0.05), means that there is an effect on before and after given lime drinks to reduce emesis gravidarum.

3.2 The difference of nausea and emesis intensity by consuming hot ginger drinks and hot lime drinks in June-July 2017

To examine and find out the different nausea and emesis intensity by consuming hot ginger drinks and hot lime drinks to decrease emesis gravidarum in Grogol Health Center, it was conducted Wilcoxon Matched Pairs test, the test was ordinal type and it was used to examine two pairs samples from the same population in which the same measured subjects and it was conducted observation before and after consuming hot ginger drinks and hot lime drinks. Then it has

been conducted the examination of Mann Whitney U-Test to examine comparative hypothesis of independent two samples with ordinal data. Calculation result of giving hot ginger drinks was obtain T value was 0 with T table to $n = 16$ is 30 in which error rate was 0,05. The result of calculation that used computerization was obtained that p -value was 0.002. T value < T table and p -value < α (0.05), it showed that there was effect f before and after consuming hot lime drinks to decrease emesis gravidarum. From the test, it was obtained value Z - 0.828 whereas Sig value or p -value was obtained from Asymp value. Sig (2-tailed) p 0.407 in which p value > 0.05 and manual calculation showed $U_{\text{value}} > U_{\text{table}} = 118.5 > 66$. It can be concluded that H_0 was achieved and H_1 was rejected, so that there was difference between consuming hot ginger drinks and hot lime drinks toward the degradation of emesis gravidarum. So, both alternatives can be used to decrease emesis gravidarum.

4. Discussion

4.1 The change of nausea and emesis intensity before and after consuming hot ginger drinks

The result of the research which was conducted on 15 June-15 July 2017 in Grogol Health Center, there were pregnant women who had nausea and emesis in the morning, evening, after taking a bath and at night, so it could become guideline for timing to consume hot ginger drinks and lime ginger drinks, so that the time really affected toward nausea and emesis intensity. This research showed after consuming hot ginger drinks, there was degradation of nausea and emesis of 16 respondents. We looked for the difference intensity of nausea and emesis before and after consuming hot ginger drinks, at the beginning there was 2 respondents that had severe nausea and emesis became no respondent (R_5, R_8). Then the degradation of moderate nausea and emesis from 5 respondents ($R_1, R_3, R_6, R_{11}, R_{13}$) became two respondents, but the mild nausea and emesis intensity had enhancement from 9 respondent ($R_2, R_4, R_7, R_9, R_{10}, R_{11}, R_{14}, R_{15}, R_{16}$) became 14 respondent. The change result of nausea and emesis, from 2 respondents of severe nausea and emesis had the change to moderate nausea and emesis, whereas 2 respondents who had moderate nausea and emesis were the change from severe nausea and emesis, then 5 respondents who had moderate changed to mild and 9 respondents had mild nausea had change score event though it was in mild category, and respondents who had mild nausea had enhancement 14 respondents. This study is in accordance with the research conducted by Malek [4] which has a significant difference in maternal gravidarum emesis frequency before and after given hot ginger drinks, by giving hot ginger drinks; a 2,5 grams ginger were sliced and brewed with 250 ml of hot water plus 1 tablespoon (10 gr) of sugar. Taken twice a day for four consecutive days. Then, pretest and posttest were conducted during the intake of the drinks. Smith [5] stated that according to his research there was a beneficial effect from taking ginger drinks for pregnant mothers because ginger reduced nausea and vomiting, that ginger's efficacy was relaxing and weakening the muscles in the digestive tract so that nausea and vomiting were much reduced. A survey conducted by Pallaty [6], found out that obstetricians were more likely to suggest the pregnant women to try to consume ginger before prescribing antiemetics. This happened because hot ginger drinks provides a sense of warmth and comfort that makes respondents more relaxed.

As an anti for nausea and vomiting, ginger can be consumed in various way such as drinks, aroma therapy, ginger slices, capsules, tablets, and ginger extract. Furthermore, in its consumption sugar can be added as sweetener, although in general there has been no research to prove the side effects on the ginger consumption during pregnancy, if given in a dose of 1 gram per day. The most frequently reported side effects are irritation or malaise, heartburn, belching, bloating and nausea, especially in the usage of ginger powder. Fresh ginger that aren't well chewed can also cause intestinal obstruction. Ginger should be used cautiously on a person with gastric ulcers, inflammatory bowel disease and gallstones [7]. During this study there was 1 respondent experiencing diarrhea after drinking ginger drink, and 1 respondent experiencing constipation, while the other 14 respondents were complaint free after the intervention. Intensity reduction of nausea and vomiting by giving hot ginger drinks may improves comfortness to pregnant mother. By those sense of comfort, the intensity of nausea and vomiting can be reduced. Therefore, health workers especially midwives, can provide some cares to mothers and expectant mothers to reduce the intensity of nausea and vomiting. In this study, all the respondents experienced an intensity reduction of nausea and vomiting after given hot ginger drinks.

b. The effect of before and after given of lime drink on emesis gravidarum in the work area of grogol's public health

According to the Image 4.2, the difference of nausea and vomiting occurrence before and after given of lime drink to the pregnant women's emesis gravidarum can be seen that there is an intensity reduction of nausea and vomiting. Before and after given an intervention, none of the respondents experienced severe nausea and vomiting, furthermore the intensity reduction of moderate nausea and vomiting from 8 respondents to 3 respondents, however the intensity of mild nausea and vomiting increased from 8 respondents to 13 respondents. From that result, none of the respondents experience severe nausea and vomiting, while 8 respondents (R₃, R₄, R₇, R₉, R₁₀, R₁₁, R₁₂, R₁₆) which have moderate nausea and vomiting are experiencing changes from moderate nausea and vomiting to mild nausea and vomiting are 5 respondents (R₃, R₄, R₁₀, R₁₁, R₁₂) and 3 respondents (R₇, R₉, R₁₆) are still experiencing moderate nausea and vomiting. And then 8 respondents (R₁, R₂, R₅, R₆, R₈, R₁₃, R₁₄, R₁₅) which have mild nausea and vomiting are also experiencing changes in their score although still in the category of mild nausea and vomiting, and the respondents experience mild nausea and vomiting after given lime drinks are increasing that is 13 respondents. Kia et al. [8], has done research on lime which can cure an incidental disease suffered by the body, such as cough, flu, cold, nausea, etc. One of the beneficial substances contained in oranges is essential oil. Essential oil is a vegetable oil that is able to coagulate at room temperature. This oil is useful to produce a very distinctive aroma and is commonly used as a natural ingredient of embrocation used for treatment. Related to the health field, essential oils used to stabilize the nervous system so to give calming effect for anyone who inhale it [9]. Until today, there hasn't been found any dangerous effect of lime on pregnant women and fetuses, however lime's effect is reducing nausea through its distinctive aroma to stimulate a sense of comfort thus creating relaxation. However, from

this research there is 1 respondent complains about constipation, and 1 respondent experiences heartburn after given lime drinks.

c. The difference intensity of nausea and vomiting between given hot ginger drinks and lime drinks on emesis gravidarum

According to the analysis results, both experience reduction, whether hot ginger drinks or lime drinks. The results from statistical tests show that the value of U count is 118.5 and U table is 66. Thus $U_{\text{count}} > U_{\text{table}} = 118.5 > 66$ then H_0 is accepted, which means that there is no significant difference of effect between given hot ginger drinks and lime drinks to reduction of emesis gravidarum. Nausea and vomiting during pregnancy usually caused by pregnancy hormonal changes, such as HCG (Hormone Chorionic Gonadotropin) generated in the bloodstream to maintain the supply of estrogen and progesterone [10]. HCG will reach the highest level at 12-16 weeks gestation and will directly effect the digestive system such as decreased digestibility and peristaltic bowel accompanied by increased stomach acid and decreased appetite [11]. Budhwaar [12] explained that ginger contains at least 19 components that are useful for the body. One of them is gingerol, the most important compound and has been proven to have antiemetic activity (anti-vomiting) that works by blocking serotonin, messenger chemical compound. This compound causes contraction on stomach, if it's blocked, the muscles of the digestive tract will relax and weaken so that the nausea will decrease a lot. Ginger is recommended as a cure for morning sickness by brewing the ginger (a half of teaspoon) with hot water for five minutes. Then consume it four times a day. Nausea in the beginning of pregnancy may be treated through complementary therapy such as aroma therapy of citrus, lemongrass, or jahe. Aroma therapy gives various effect to the inhalers, such as calmness, freshness, even helps pregnant women to overcome nausea. Nausea and vomiting on pregnant women during the first trimester is still occurring and to cope it mostly uses pharmacological therapy. As well as in the work area of Grogol's Public Health, a lot of pregnant women use pharmacological therapy to reduce nausea and vomiting. It will be better if pregnant women are able to overcome the nausea early in pregnancy by first using non-pharmacological complementary therapy. Because it is tend to be non-instructive, non-invasive, cheap, simple, effective and without adverse side effect. The management of nausea and vomiting on pregnancy depends on the severity of the symptoms. Treatment may be conducted through pharmacological and non-pharmacological methods. Pharmacological therapy is performed by giving antiemetics, antihistamines, anticholinergics, and corticosteroids. Non-pharmacological therapy is done by anaging diet, emotional support, acupuncture and ginger. Previous experiences of respondents on nausea and vomiting are also affecting the nausea and vomiting, previous experiences on nausea and vomiting does not mean that the individual is able to take nausea and vomiting easily. Respondents on first time pregnancy usually experience more severe nausea and vomiting because they do not know what will happen and how nausea and vomiting will be felt. This may occur because of physical and psychological factors that exist in the respondents, so the intensity of nausea and vomiting is decreasing. This occurs due to several factors that affect the forming of nausea and vomiting consist of age, physical and

psychological factors as well as the supports from the people around them, so even though they are given hot ginger drinks and lime drinks, mothers are still feel nauseous and vomiting. Whereas the provision of hot ginger drinks may reduce stress, both physical stressor and emotional stressor, which is reduce the intensity of nausea and vomiting and reduce anxiety.

5. Conclusions

Both hot ginger drinks and lime drinks may be used in reducing nausea and vomiting in the first trimester of pregnancy because this method is very influential to reduce nausea and vomiting. Provision of hot ginger drinks may reduce stress, both physical stressor and emotional stressor, which is reduce the intensity of nausea and vomiting and reduce anxiety. Pregnant mother can also make the variants of ginger and lime to decrease the frequency of emesis gravidarum because they are easy to get, simple and effective without side effects and they do not harm mother and the fetus.

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