

THE EFFECT OF GIVING HOT GINGER DRINK AND HOT LIME DRINK TOWARD EMESIS GRAVIDAE AT WORKING AREA OF PUSKESMAS GROGOL

Rahajeng Siti Nur Rahmawati¹

¹Poltekkes Kemenkes Malang

rahajengsnr81@gmail.com

ABSTRACT

Nausea and vomiting happen on 60%-80% primigravida and 40%-60% multigravida. One hundred of a thousand symptoms of nausea in pregnancy will be heavy if the treatment is not good. Emesis Gravidarum is a normal grievance which is experienced by pregnant mother in first trimester and can become hyperemesis gravidarum so that it increases the risk of disorders of pregnancy. Nausea and vomiting in pregnancy can be avoid with pharmacology and nonpharmacologic therapy. One of nonpharmacologic therapies to control nausea and vomiting is ginger and lime. This research aimed to prove the effects of hot ginger drink and hot lime drink to first semester pregnant mother in Puskesmas Grogol, Kediri District. This research used experiment queasy study of pre-posttest design in group of hot ginger drink and hot lime drink. The population was all pregnant mothers in first semester who experienced emesis gravidarum in Puskesmas Grogol, Kediri District. The samples were 32 people by using purpose sampling technique. Collecting the data was conducted directly through the observation. Data analysis used statistic test of Wilcoxon Match Test and Mann Whitney U Test. The result of the study before and after giving hot lime drink showed that the score was $p = 0,002$ ($p < 0,05$), so H1 was achieved and H0 was ignored, it meant there was effect of giving hot lime drink toward emesis gravidae in Puskesmas Grogol, Kediri District. Data analysis used statistic test of Mann Whitney U Test resulted U number $> U$ table = $118.5 > 66$ so H₀ was achived. H1 was ignored, it meant there wes not different significance between giving hot ginger drink and hot lime drink toward the decrease of emesis gravidarum. The conclusion of this research shows that hot ginger drink and hot lime drink are effective in decreasing emesis gravidarum so that people get the benefit from hot ginger drink and hot lime drink as alternative medicine before consuming antiemetic medicine. They 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.

Key Words: Pregnancy, Nausea and Vomiting, Hot ginger drink, hot lime drink.

INTRODUCTION

Pregnancy is natural event. In pregnancy period, the body will experience changes. Inconvenience will appear with physiologic changes such as nausea, vomiting, often urinating and back pain. The result of survey to pregnant mother, the most complained is nausea and emesis. Nausea and emesis in pregnant mother are called emesis gravidarum. Emesis gravidarum while pregnant is the general symptom in first trimester of pregnancy. This symptom usually happens about 6 weeks after the last menstruation period and happens about 10 weeks (Prawiroharjo, 2009).

Emesis Gravidarum is general complained that is revealed by pregnant woman. Pregnancy generates hormonal change to woman because there is enhancement of hormone estrogen, progesterone and the discharge of human chorionic gonadotropin placenta. These hormones are expected to generate emesis gravidarum (Manuaba, 2010).

Based on Health Department 2010, the number of emesis gravidarum in Indonesia in 2015 is 543 people from 2.203 pregnant women. In East Java in 2011, 67,9% pregnant women had emesis gravidarum which is well-known as morning

sickness (Nausea in the morning). The number of emesis gravidarum happens in 60-80% primigravida and 40-60% multigravida.

Emesis gravidarum is the case that do not cause mortality to pregnant mother because they are just lack of nutrients and fluids. Sustainable Emesis Gravidarum can cause hyperemesis gravidarum. It is caused bad things to the health of mother and the baby. Therefore, pregnant mother with hyperemesis gravidarum has to be hospitalized in order to get immediate treatment (Maharani, 2010).

Excessive nausea and emesis can cause dehydrate, electrolyte imbalance, metabolic disorder and nutritional deficiency which is well-known as hyperemesis gravidarum. If hyperemesis gravidarum do not get serious treatment, it will generate many complications such as liver failure and disturbance to the fetus (Anggi, 2010).

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 drink and a hot lime drink 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 compounds that can generate stomach contracts, so that pregnant mother feels nausea and emesis. The content of hot ginger drink is safe from bad ingredients 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 an alternative treatment before consuming antiemetic medicine.

The research that is conducted by University of Chiang Mai in Thailand 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 declines of emesis gravidarum symptoms in those pregnant mothers (Booth, 2008). Besides ginger, lime also has benefits for 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 (Damayanti, 2011).

Based on pre-survey data which was done in Grogol Puskesmas in April, it is obtained that in March 2017, there were 57 pregnant mothers who check their pregnancy. From 57 surveyed pregnant women, there are women who had nausea and emesis. Most pregnant women thought 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.

It can be concluded that emesis gravidarum in first trimester is interference in first place of pregnancy. So that researcher is interested with the research regarding the benefits of hot ginger drink and hot lime drink to decrease emesis gravidarum in pregnant mother in first semester and it prevents the hyperemesis. In

general, people still use anti-nausea drug to decrease emesis gravidarum.

RESEARCH METHOD

Research design is research strategy to identify the problem of the research and identify research structure that will be conducted (Nurasalam, 2009). This type of this research is quantitative research with comparison design no 2 pair samples with pre-posttest design, in which there were 2 groups that receive 1 different intervention, which are the giving of hot ginger drink and hot lime drink. Before it is given intervention, it will be done pretest and after intervention, it will be done posttest. The research design is to distinguish the group toward work procedure. Comparative research is to compare two or three events by observing the causes (Arikunto, 2013).

THE RESULT OF THE RESESEARCH

Based on data collecting about influence of hot ginger drink and hot lime drink toward Emesis gravidarum in Grogol Puskesmas Kedisi District which was done 15 June -15 July 2017, it was obtained 32 respondent met inclusion criteria. Technique of taking sample purposively in which respondents who will be observed is according to inclusion and exclusion criteria. Collecting the data befor and after

intervention, the intensity of nausea and emesis were measured by questioner INVR from collecting data as follow:

a. The change of nausea and emesis before and after given hot ginger drink 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 drink. 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. Different graphic of nausea and emesis before and after consuming hot ginger drink can be seen in figure 4.1.

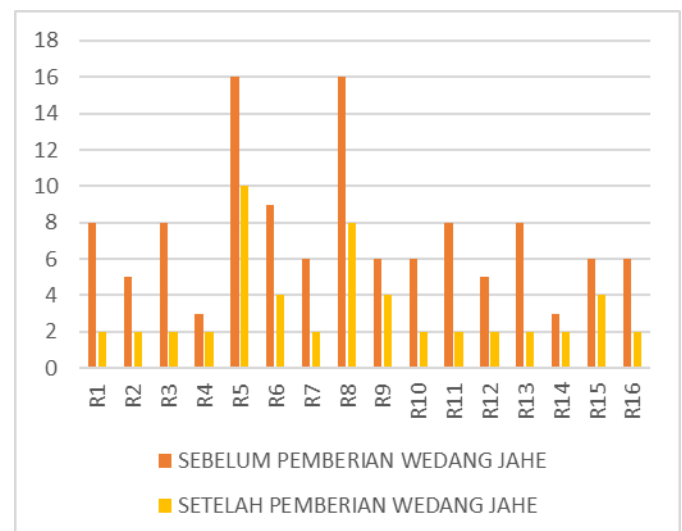


Figure 4.1 the change of nausea and emesis intensity before and after consuming hot ginger drink in Grogol Puskesmas in June and July 2017

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

Based on research which has done to pregnant mother with emesis gravidarum in Grogol Puskesmas Kediri District, 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. The graphic of influence nausea and emesis intensity before and after consuming hot lime drink can be seen in figure 4.2

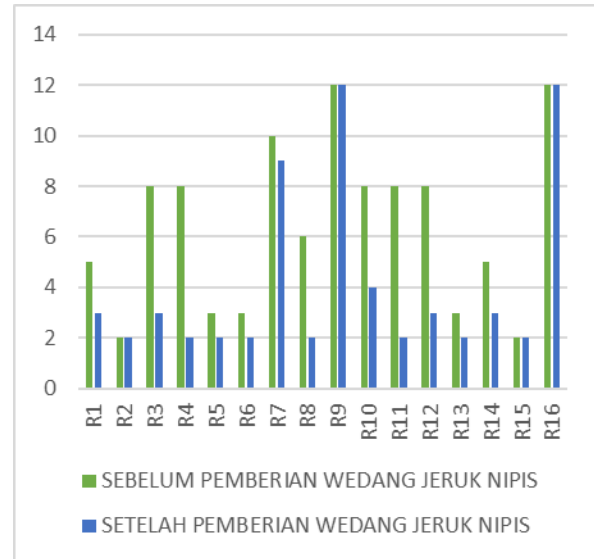


Figure 4.2. the change of nausea and emesis intensity before and after consuming hot lime drink in Grogol Puskesmas in June-July 2017

c. the difference of nausea and emesis intensity by consuming hot ginger drink and hot lime drink in Grogol Puskesmas in June-July 2017

To examine and find out the different nausea and emesis intensity by consuming hot ginger drink and hot lime drink to decrease emesis gravidarum in Grogol Puskesmas Kediri District, 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 drink and hot lime

drink. 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 drink 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 before and after consuming hot lime drink to decrease emesis gravidarum in Grogol Puskesmas Kediri District.

Statistic Wilcixon Match Pair Test resulted that there were differences before and after consuming hot ginger drink and hot lime drink. Then to find out more effective treatment, it was conducted Mann Whitney U-test as the result:

$$\begin{aligned}
 R1 &= 244,5 & R2 &= 273,5 \\
 n1 &= 16 & n2 &= 16 \\
 U1 &= n1.n2 + \frac{n2(n2+1)}{2} - R1 = 16.16 + \\
 &\frac{16(16+1)}{2} - 273,5 = 118,5 \\
 U2 &= n1.n2 + \frac{n1(n1+1)}{2} - R1 = 16.16 + \\
 &\frac{16(16+1)}{2} - 244,5 = 147,5
 \end{aligned}$$

From the calculation by using computerization, 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 value > U table = 118,5 > 66. It can be concluded that Ho was achieved and H1 was rejected, so that there was difference between consuming hot ginger drink and hot lime drink toward the degradation of emesis gravidarum, so, both alternatives can be used to decrease emesis gravidarum.

DISCUSSION

a. The change of nausea and emesis intensity before and after consuming hot ginger drink in Grogol Puskesmas.

The result of the research which was conducted in 15 June-15 July 2017 in Grogol Puskesmas, 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 drink and lime ginger drink, so that the time really affected toward nausea and emesis intensity.

This research showed after consuming hot ginger drink, there was degradation of nausea and emesis of 16 respondents. In figure 4.1 about the difference intensity of nausea and emesis before and after consuming hot ginger drink, at the beginning there was 2 respondents

that had severe nausea and emesis became no respondent (R5,R8). Then the degradation of moderate nausea and emesis from 5 respondents (R1,R3,R6,R11,R13) became two respondents, but the mild nausea and emesis intensity had enhancement from 9 respondent (R2,R4,R7,R9,R10,R11,R14,R15,R16) 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 Ummu and Mahmudah in 2004. There was a significant difference in maternal gravidarum emesis frequency before and after given hot ginger drink, by giving hot ginger drink; 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 drink.

Smith (2004), an obstetrics and gynecology professor of the University of Adelaide, Australia stated that according to his research there was a beneficial effect from taking ginger drink 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 Power et al (2001) in Washington DC on the Tiran's book (2009) 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 drink 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 hot ginger drink, 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 (Wiraharja RS, et al. 2011). 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 drink may improves comfort. With a 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 drink.

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 drink are increasing that is 13 respondents.

Anisa Kurnia in 2014 based on one of the laboratory in the Ohio State Biotechnology, Ohio, USA, 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 (Dewa, 2011).

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 drink.

c. The Difference Intensity of Nausea and Vomitting Between Given Hot Ginger Drink and Lime Drink on Emesis Gravidarum

Statistics result of nausea and vomiting intensity by giving hot ginger drink is in the value of T count = 3,5 with T table = 118. 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 drink to reduce emesis gravidarum in the Work Area of Grogol's Public Health in Kediri Regency.

While on the intake of lime drink, 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 drink to reduce emesis gravidarum in the Work Area of Grogol's Public Health in Kediri Regency.

According to the analysis results, both experience reduction, whether hot ginger drink or lime drink. The results from statistical tests show that the value of U count is 118,5 and U table is 66. Thus U count > U table = 118,5 > 66 then H_0 is accepted, which means that there is no significant difference of effect between given hot ginger drink and lime drink to 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 (Tiran, 2009). 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 (Wiknjosastro, 2009).

According to Budhawaar (2006), 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.

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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 (Dewa, 2011).

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 managing 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 eventhough they are given hot ginger drink and lime drink, mothers are still feel nauseous and vomiting. Whereas the provision of hot ginger drink may reduce stress, both physical stressor and emotional stressor, which is reduce the intensity of nausea and vomiting and reduce anxiety.

It can be concluded that both hot ginger drink and lime drink 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, moreover it is also simple and can be made at home.

CONCLUSION

Based on the research titled “The Influence of Giving Hot Ginger Drink and Lime Drink to Emesis Gravidarum in Work Area of Grogol’s Public Health in Kediri Residence” to 32 respondents (16 respondents in ginger drink group and 16 respondents in lime drink), can be concluded that:

1. There is an effect before and after giving of ginger drink to emesis gravidarum, that most of the respondents experience mild nausea and vomiting before they are given ginger drink while after they are given ginger drink, almost all respondents experience mild nausea and vomiting.
2. There is an effect before and after giving ginger drink and lime drink to emesis gravidarum in the Work Area of Grogol's Public Health. Half of the respondents experience mild nausea and vomiting before being given lime drink, while after being given lime drink, almost all respondents experience mild nausea and vomiting.
3. There is no difference in the effect of giving ginger drink or lime drink to reduce emesis gravidarum in the Work Area of Grogol's Public Health in Kediri residence.

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