# Effect of Ginger versus Antiemetics on Relieving Mild to Moderate Morning Sickness among Pregnant Women

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#### **ABSTRACT**

Background: Nausea and vomiting during pregnancy (NVP) is the first and most frequently reported minor discomforts during early pregnancy. Ginger is alternative therapy used for pregnant women with NVP. Aim of the study: The aim of the study was to evaluate the effect of ginger versus antiemetics on relieving mild to moderate morning sickness among pregnant women. Design: quasi experimental design was adopted in this study. Setting: the study was carried out at the obstetrics outpatient's clinic in Suez Canal University hospital in Ismailia city. Sample: Purposive sampling was used to recruit 100 pregnant women have NVP during the first trimester of pregnancy. 50 women were assigned into study group (those who undergo use ginger syrup 1 gm per day for four consecutive days), and other 50 women were assigned as control group. Tools and procedure: Structure interviewing schedule, and McGill Nausea Questionnaire, which used to assess patterns of NVP. Results: The frequency and severity of nausea and vomiting have shown statistically significant improvement throughout the following up in the study and control group. Improvement in the overall symptoms was more revealed in the study group than the control group P<0.0001. Conclusion: Ginger drink as well as antiemetic agent is effective in relieving mild to moderate nausea and vomiting during the first trimester of pregnancy. **Recommendation:** Using ginger as antiemetic agent on relieving mild to moderate nausea and vomiting during the first trimester of pregnancy is recommended.

Key word: Nausea, vomiting, pregnancy, Ginger, alternative medicine,

# **Introduction**

The most common minor discomforts in early pregnancy are nausea and vomiting. A few lucky women do not have nausea or vomiting during pregnancy (NVP). Although morning sickness is neither serious nor life threatening, nevertheless their presence detract from the mother feeling of comfort and well-being as well as their negligence may lead to serious problems. In many instance, it can be avoided by preventive measures or healthful practices once they do occur (*Ebrahimi et al., 2010 &Vanderbitt , 2009*).

Nausea with or without emesis is one of the most common complaints in early pregnancy. It is estimated that up to 80% of women experience some degree of nausea in their first trimester (usually between 8 and 12 wks gestation). Approximately 20% of women will continue to experience symptoms past the 20th week (*Ebrahimi et al., 2010 & Badell et al., 2006*). Causes of morning sickness are unknown but there are many theories include: toxemic theory, hormonal theory, deficiency theory, allergic theory and psychological or emotional theories (*Toppozada and Rika 2006*). The severity can range from mild nausea to frequent or event severe vomiting (hyperemesis gravidrum) leading to hospitalization for intravenous administration of fluids to prevent further dehydration (*ARRC, 2004*).

Nausea and vomiting remain a considerable quandary with regard to its effect on pregnant women. To abate the symptom, there have been many treatment modalities including pharmacological and non-pharmacological approaches. Because the pregnancy state requires choosing safer treatment modalities, so choosing the natural products is usually preferable. Ginger is a natural product, available, cheap, and acceptable drink *(Louise, 2008).* 

*Ginger* (Zingiber officinale) is a plant belonging to the Zingiberacea family. The part of the plant that is used medicinally is the root or rhizome (*Abero, 2011*). *Ginger* has been used for thousands of years as Chinese traditional medicine for anti-emetic effect. The effectiveness of ginger may increase with the dose. In general, while most anti-nausea drugs influence the brain and the inner ear, ginger appears to act directly on the stomach (*Lien et al., 2003*).

The dealing with minor discomfort is the role of the nurse /midwife during the antenatal classes. Nursing interventions focus on reducing nausea and vomiting, maintaining nutrition and fluid balance, and providing emotional support. *Ginger* drink can prescribe by nurses without doctor's order. Prescription of Ginger as a relieving measure through health education offered by nurses may help pregnant mothers to relief morning sickness safely (*Greene*, 2010).

## Significance of the study:

*Ginger* is an inexpensive over the counter alternative to consider for treatment of NVP. Despite the years of the use of these remedies in many cultures, there remains little information regarding its efficacy during pregnancy. They are empirical and have not been carefully studies. However, more observational and randomized controlled studies are needed before offering a definite statement regarding their effectiveness for pregnant women (*Barclay, 2010 & Anne, 2008*). In Egypt, using ginger to relieve nausea and vomiting among pregnant women is not popular and there are fewer researches studying this issue, so this study idea was raised. So this study aims to analyze the impact of using ginger on the relief of NVP.

# Aim of Study:

The aim of the present study is to evaluate the effect of ginger in comparing to antiemetic agent on relieving mild to moderate morning sickness during the first trimester of pregnancy.

### **Research hypothesis:**

Pregnant women who consume ginger for relieving morning sickness exhibit less severe morning sickness than those who consume antiemetics.

### **Subjects and Methods:**

### 1. <u>Technical Design:</u>

-Research design: Quasi- experimental design was adopted in this study.

- **Setting:** The study was conducted in the antenatal clinic of obstetric and gynecologic department in Suez Canal University hospital in Ismailia city.

Sampling design:

Target Population: The population of this study was primigravida at first trimaster and were complaining of mild to moderate nausea and vomiting.

**Sample size:** A total one hundred of first trimester pregnant women were recruited in the study.

#### Power of study estimation

Power of the study was calculated using Epi-save software for comparative study to detect difference between Ginger and antiemetic agent effect in relieving mild to moderate morning sickness among the first trimester pregnant women in Ismailia City.

Power of study is **84.28%** on using a sample size of 100 women divided into two groups (50 women in each group) in the comparative study to detect reduction in incidence of moderate nausea and vomiting from 100% among pregnant women using antiemetic agents to 84% among pregnant women using Ginger (16% reduction of incidence). The estimated power of study is made at assumption of 95% confidence level.

The sample was divided equally into two groups:

- Study group (50 women) who received ginger syrup,

- Control group (50 women) who received antiemetic drugs ( primperane or cortegen B6.)

**Sampling technique:** Purposive sampling was used to select the study subjects depending on the selection criteria until the sample size was completed.

#### **Exclusion criteria:**

Woman with the following conditions were excluded from the study sample:

• acute cholecystitis, and peptic ulcer.

#### Tools of data Collection:-

I) A structured interviewing schedule was designed, tested for validity and reliability and utilized by researcher to collect the necessary data. It was included five sections; demographic data, obstetrical, characteristics of nausea and vomiting in the current pregnancy.

### II) McGill Nausea Questionnaire:

This questionnaire consists of three indices of nausea: two quantitative and one qualitative. This tool was used to assess the severity of nausea and vomiting before and after the interventions (*Lacroix et al., 2000*):

• Over Nausea Index (quantitative): this consists of self rating of the degree of severity of nausea and vomiting by pregnant women. It consists of a six- point scale ranging from no nausea or vomiting to unbearable nausea and vomiting.

• *Visual Analogue Scale (VAS)* (quantitative): VAS is a self-reported device consisting of a 10 cm straight line, which represents a continuum of nausea severity and has verbal anchors at opposite ends representing no nausea to as bad as it could be.

• *Nausea Rating Index* (qualitative): consists of domains related to the characters and effects on nausea and vomiting. These are namely the description of the symptom, its effect on life quality, effect on body, and effect on nerves. Each of these domains was described verbally by a series of qualities ranging from mild to severe.

• McGill Nausea Questionnaire was translated to Arabic langue and filled by pregnant women.

#### **II- Administrative Design and Ethical Considerations:**

Official permission was obtained by submission of an official letter from the Faculty of Nursing to the responsible authorities of the Suez Canal University Hospital and the chairman of obstetric and gynecological department and chairman of outpatient's clinics to obtain the approval to conduct this study. All ethical considerations were considered for privacy and confidentiality, so approval was obtained from the mothers before conducting the study, ensuring that these data will be used for the research purpose only, and they have the opportunity to withdraw at any time.

#### **II-Operational design:**

**Preparatory phase:** The researcher reviewed the available local & international related literature of current study. From using text books, articles, and scientific magazines, the data collection tools were prepared. The tools were reviewed by the supervisors, and panel of juries in the field of obstetric and gynecologic nursing. Then, needed modifications were done.

**Pilot stud**y: It was applied on 10% of the sample size which weren't included in the study sample. The purposes of the pilot study were to ascertain the relevance and content validity of the tools, detect any problem peculiar to data collection tools that might face the researcher and interfere with data collection, identify the suitable place at which the interview will be held, and estimate the exact time needed for data collection. After conducting the pilot study, the necessary changes were performed and the tools were reconstructed and made ready for use.

**The field work:** Collection of data covered a period of 5 months from November 2011 until March 2012. The researcher attained the study setting from 9 am to 12 pm. At the reception of antenatal clinic pregnant women were interviewed. Based on the exclusion criteria, women were selected to be recruited in the study after obtaining their consents. Structured interview schedule was filed, and then women were asked if they prefer to manage by antiemetsic or by ginger drink. Based on women's preference they recruited to ginger or antiemetic group until each group reach 50 women. Medical prescription for antiemetic drugs group was recorded. The antiemetics prescribed by physicians were either primperane or cortegen B6. Women recruited in ginger group take instructions from the researcher about preparation of ginger drink and daily dose.

#### **Regimen of ginger preparation and administration**:

Take the equivalent of the a teaspoon dry ginger grated (equal 1 gram) and then placed in a flask and add one litter of cold water and cover with lupine and soak this mixture for 12 hours. In case of urgency to drink ginger take the equivalent of a teaspoon dry ginger and then placed in a flask kept the heat and add one litter of hot water without boiling and covered thermos immediately for half an hour then drink in cup (100 ml) before meals. These should be repeated every day for consecutive four days (*laki.com, 2009, Herbs.com 2000, Imanway.com, 2010*). Bottles of fresh ginger (100 ml) and copies of pamphlets about ginger preparation were distributed for women managed by ginger.

#### **Evaluation of the effectiveness of interventions**

McGill Nausea Questionnaire was explained simply for women with enough clarification about how to fill it. Women were asked to fill the McGill Nausea Questionnaire once before intervention (for the baseline score) and after intervention of four days. Copies of this tool were distributed for all women in this study. Women were asked to comeback on the next four days to evaluate their responses to treatment through filling-up the McGill Nausea questionnaire. The researcher responded for any clarification and helped women who can't read and write. Those who didn't comeback, the researcher would have contacted them by telephone. The first interview took about 20 minutes for each subject, whereas filling the McGill Nausea questionnaire took about five minutes.

**VI-Statistical Analysis:** Data was collected, presented in tabular form. Percentages were calculated for qualitative data, mean and standard deviations were calculated for quantitative data using the Statistical Package for Social Sciences (**SPSS**) for statistical analysis. The Fisher's exact test, Qui square test, Mann Whitney test, and Monte Carlo test were used in this study to analysis the data

# **Results**

**I-Sample characteristics**: The results revealed that there is no significance differences in age groups between study and control groups  $(24.2\pm2.8 \text{ vs } 23.6\pm2.3 \text{ years respectively}, P=0.206)$ . The high percentage of the studied groups had technical level of education (76.0% in study group VS 66.0% in control group). In addition, more than two thirds of the control group were house wife (64.0%) and more than four fifths (88.0%) of the study group were working. The differences between two groups were insignificant except for their occupation.

### **II- Pre and Post intervention:**

**Table (1)** shows a comparison between the studied groups regarding criteria of nausea and vomiting pre and post interventions. As shown, the timing of nausea and vomiting as reported by the majority of two groups pre intervention were at morning and after meals, while mean number of vomiting per day in the ginger and antiemetic group was (4.1 vs. 4.4 respectively). The comparison between two groups wasn't significant (p>0.05). However, post intervention there was statistically insignificant difference between the studied groups regarding presence of nausea and vomiting, and timing of nausea and vomiting. But, the difference was significant regarding number of vomiting per day.

**Table (2)** shows the comparison between the studied groups regarding the scores of visual analogue scale pre and post interventions. As shown, there was statistically insignificant difference between ginger and antiemetic groups regarding the pre intervention mean score  $(5.0\pm1.3 \text{ vs. } 5.5\pm0.9 \text{ respectively}, P=0.196)$ , while post intervention the difference was statistically significant (2.4±0.9 vs 3.3±1.1, P<0.0001).

**Table (3)** shows comparison between overall nausea index pre and post intervention in both studied groups. Pre intervention, it was observed that one half of the ginger group described restless nausea or vomiting compared to more than four fifths (84%) in the antiemetic group and the difference was statistically significant (P=0.0001). Post intervention, 14% of the ginger group did not have nausea or vomiting compared by 12% in the antiemetic group. The difference post intervention between groups were statistically insignificant (P=0.19).

**Table (4)** shows comparison between Nausea Rating Index pre intervention in both studied groups. As shown, all differences between groups were statistically significant (P<0.0001) except for the effectiveness on body.

**Table (5)** shows comparison between Nausea Rating Index post intervention in both studied groups. As shown, all differences between the both studied groups were statistically insignificant except for the description of feeling.

Variables		Ginger group (n=50)		Antiemetic group (n=50)		Test P value
		No.	%	No.	%	
	Presence of nausea and vomiting	50	100.0	50	100.0	-NA-
	Timing of nausea/vomiting					
	Morning & after meals	46	92.0	45	90.0	<sup>мс</sup> Р=0.899
tion	After meals	2	4.0	3	6.0	F=0.899
rven	Evening	2	4.0	2	4.0	
inter	Number of vomiting per day		1			Z=1.524
Pre intervention	Min-Max (Mean±SD)	2-5 (4.1±0.9)		4-5 (4.4±0.5)		P=0.128
						X <sup>2</sup> =0.09
	Presence of nausea and vomiting	43	86.0	44	88.0	P=0.766
	Timing of nausea/vomiting					
uo	Morning & After meals	43	86.0	44	88.0	
	After meals	0	0.0	0	0.0	-NA-
venti	Evening	0	0.0	0	0.0	
inter	Number of vomiting per day	1-3 (2.3±0.7)		1-4 (2.7±0.8)		Z=3.184
Post intervention	Min-Max (Mean±SD)					P=0.001*

Table (1): Comparison between the studied groups regarding criteria of nausea	
and vomiting pre and post intervention (n=100).	

<sup>FE</sup>P: Fisher's Exact test Z: Mann Whitney test -NA-: Not applicable  ${}^{MC}P$ : Monte Carlo test \*significant at  $P \leq 0.05$ 

Table (2): Comparison between the studied groups regarding the scores of visual analogue scale pre and post interventions (n=100).

Scores of nausea and vomiting visual analogue scale pre& post intervention	Ginger group (n=50)		Antiemetic group (n=50)		Test P value
	No.	%	No.	%	
Pre intervention					
1-2	1	2.0	0	0.0	
3-4	10	20.0	3	6.0	
5-6	37	74.0	43	86.0	
7-8	2	4.0	3	6.0	
9-10	0	0.0	1	2.0	
Min-Max	1-8		4-9	4	Z=1.294
Mean±SD	5.0±1.3		5.5±0.9		P=0.196
Post intervention					
1-2	24	48.0	10	20.0	
3-4	26	52.0	35	70.0	
5-6	0	0.0	5	10.0	
Min-Max	1-4		2-6		Z=3.566
Mean±SD	2.4±0.9		3.2±1.1		P<0.0001*

Z: Mann Whitney test

\*significant at P≤0.05

Over all for nausea and vomiting index		Ginger group (n=50)		Antiemetic group (n=50)		Test P value
			%	No.	%	1 value
	No nausea or vomiting	0	0.0	0	0.0	
	Mild nausea or vomiting	7	14.0	0	0.0	
ion	Restless nausea or vomiting	25	50.0	42	84.0	<sup>мс</sup> Р<0.0001*
Post intervention Pre intervention	Exhausting nausea or vomiting	17	34.0	6	12.0	P<0.0001**
	Severe nausea or vomiting	1	2.0	1	2.0	
	Intolerable nausea or vomiting	0	0.0	1	2.0	
	No nausea or vomiting	7	14.0	6	12.0	
	Mild nausea or vomiting	10	20.0	4	8.0	
	Restless nausea or vomiting	33	66.0	40	80.0	<sup>мс</sup> Р=0.19
	Exhausting nausea or vomiting	0	0.0	0	0.0	P=0.19
	Severe nausea or vomiting	0	0.0	0	0.0	
	Intolerable nausea or vomiting	0	0.0	0	0.0	

Table (3): Comparison between studied groups regarding changes in Overallnausea index pre and post intervention (n=100).

<sup>MC</sup>P: Monte Carlo test

\*significant at P≤0.05

Items     No.     %     No.     %     P value       Exhausted     38     76.0     20     40.0     M <sup>C</sup> P<0.0001*       Sickness     11     22.0     6     12.0     M <sup>C</sup> P<0.0001*       Suffocating     0     0.0     3     6.0     12.0     M <sup>C</sup> P<0.0001*       Painful     1     2.0     21     42.0     M <sup>C</sup> P=0.075     M <sup>C</sup> P=0.075       Effect on the body     9     18.0     2     4.0     M <sup>C</sup> P=0.075       Spread in the body     29     58.0     39     78.0     M <sup>C</sup> P=0.075       Penetrating the body     2     4.0     1     2.0     M <sup>C</sup> P=0.075       Feeling of coldness     40     80.0     48     90.0     X <sup>2</sup> =6.06       All body is cold     40     80.0     48     90.0     X <sup>2</sup> =6.06       P=0.014*     1     2.0     1     2.0     M <sup>C</sup> P=0.014*       No effect     8     16.0     0     0.0     M <sup>C</sup> P=0.008*       Being disoriented     40	Items		Ginger group (n=50)		Antiemetic group (n=50)		Test - P value
Description of feeling ExhaustedNoNoNoNoExhausted3876.02040.0Sickness1122.0612.0Suffocating00.036.0Painful12.02142.0Effect on the body12.02142.0No effect918.024.0No effect958.03978.0Refer to another part1020.0816.0Penetrating the body24.012.0Feeling of coldness4080.04890.0All body is cold4080.04890.0All body is freezing12.012.0							
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$\left[ \begin{array}{cccccccccccccccccccccccccccccccccccc$		-	38	76.0	20	40.0	
$ \begin{array}{ c c c c c c c } Suffocating & 0 & 0.0 & 3 & 6.0 \\ Painful & 1 & 2.0 & 21 & 42.0 \\ \hline \begin{tabular}{ c c c c c } \hline Felling of coldness \\ All body is freezing & 1 & 2.0 & 1 & 2.0 \\ \hline \end{tabular} \end{array} \begin{array}{ c c c c } Suffocating & 0 & 0.0 & 3 & 6.0 \\ 2.0 & 2.0 & 2.1 & 42.0 & 42.0 & & & & & & & & & & & & & & & & & & &$							<sup>MC</sup> P<0.0001*
$ \begin{array}{ c c c c c } \hline Painful & 1 & 2.0 & 21 & 42.0 \\ \hline Painful & 1 & 2.0 & 21 & 42.0 \\ \hline Effect on the body & 9 & 18.0 & 2 & 4.0 & {}^{MC}P=0.075 \\ \hline Spread in the body & 29 & 58.0 & 39 & 78.0 \\ \hline Refer to another part & 10 & 20.0 & 8 & 16.0 \\ \hline Penetrating the body & 2 & 4.0 & 1 & 2.0 \\ \hline Feeling of coldness & & & & & & \\ \hline All body is cold & 40 & 80.0 & 48 & 90.0 & {}^{X^2=6.06}_{P=0.014*} \\ \hline All body is freezing & 1 & 2.0 & 1 & 2.0 \\ \hline \end{array} $							1 (0:0001
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$ \begin{array}{ c c c c c c c c } Spread in the body & 29 & 58.0 & 39 & 78.0 \\ Refer to another part & 10 & 20.0 & 8 & 16.0 \\ Penetrating the body & 2 & 4.0 & 1 & 2.0 \\ \hline \end{tabular} {f Feeling of coldness} & & & & & \\ All body is cold & 40 & 80.0 & 48 & 90.0 & X^2 = 6.06 \\ All body is freezing & 1 & 2.0 & 1 & 2.0 \\ \hline \end{tabular} $		•	9	18.0	2	4.0	<sup>мс</sup> Р=0.075
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All body is cold 40 80.0 48 90.0   All body is freezing 1 2.0 1 2.0	Fe	Feeling of coldness					2
All body is freezing     1     2.0     1     2.0	All	All body is cold	40	80.0	48	90.0	
Psychological effect     8     16.0     0     0.0       No effect     8     16.0     5     10.0       Desperate     2     4.0     5     10.0       Heing disoriented     40     80.0     45     90.0     MCP=0.008*	All	All body is freezing	1	2.0	1	2.0	P=0.014*
No effect     8     16.0     0     0.0       Desperate     2     4.0     5     10.0       Heing disoriented     40     80.0     45     90.0     MCP=0.008*	Ps	Psychological effect					
best perate     2     4.0     5     10.0       perate     Being disoriented     40     80.0     45     90.0 <sup>MC</sup> P=0.008*	No	lo effect	8	16.0	0	0.0	
E     Being disoriented     40     80.0     45     90.0 <sup>MC</sup> P=0.008*	De	Desperate	2	4.0	5	10.0	
	Be	Being disoriented	40	80.0	45	90.0	<sup>MC</sup> P=0.008*
Neurological effect	Ne	Neurological effect					
No effect     8     16.0     0     0.0 <sup>MC</sup> P<0.0001*	No	Jo effect	8	16.0	0	0.0	<sup>MC</sup> P<0.0001*
Feel tense     39 <b>78.0</b> 35 <b>70.0</b>	Fee	Feel tense	39	78.0	35	70.0	
Feel dizzy     3     6.0     15     30.0	Fee	Seel dizzy	3	6.0	15	30.0	

Table (4): Comparison between the studied groups regarding nausea rating index pre intervention (n=100).

<sup>MC</sup>P: Monte Carlo test

X<sup>2</sup>:Chi-Square test

FEP: Fisher's Exact test

\*significant at

*P*≤0.05

		Ginger group		Antiemetic group		Test
Items		( <b>n=50</b> )		(n=50)		P value
		No.	%	No.	%	1 value
	Description of feeling					
	Exhausted	30	60.0	35	70.0	<sup>мс</sup> Р=0.001*
	Suffocating	0	0.0	1	2.0	1-0.001
	Painful	1	2.0	0	0.0	
	Effect on body					
Post intervention	No effect	48	96.0	48	96.0	
	Spread in the body	1	2.0	2	4.0	<sup>MC</sup> P=0.513
	Refer to another part	1	2.0	0	0.0	
	Feeling of coldness					<sup>FE</sup> P=1.0
	All body is cold	1	2.0	2	4.0	r –1.0
	Psychological effect					
	No effect	48	96.0	47	94.0	FEP=1.0
	Being disoriented	2	4.0	3	6.0	
	Neurological effect					
	No effect	48	96.0	48	96.0	<sup>мс</sup> Р=1.0
	Feel numbness	0	0.0	1	2.0	
	Feel dizzy	2	4.0	1	2.0	

Table (5): Comparison between the studied groups regarding nausea rating index post intervention (n=100).

MCP: Monte Carlo test

FEP: Fisher's Exact test \*significant at P≤0.05

## **DISCUSSION**

Nausea afflicts the majority of women during the first trimester of pregnancy; which is the precise period in which drug therapy is the most worrisome due to the extreme vulnerability of the fetus. It remains a significant public health problem that has physiological, emotional, social, and economic consequences to women, their families and society (*Smith et al., 2004*). Early treatment of the symptoms is recommended to prevent progression of hyperemsis gravidarum. Many pregnant women may hesitate to take medications for NVP; so conventional medicine's a quest for safe and natural treatment options (*Fischer-Rasmussen , 2009*).

The treatment of NVP may range from dietary changes to more hospitalization or even total parenteral nutrition. Therefore, they practice nonpharmacological methods to help them manage their pregnancy-related physical symptoms. Complementary and alternative medicine (CAM), such as ginger, has become popular alternatives for pregnant women with NVP. Their use has risen around the world due to informational technology (*Peng*)

2010 & Brien, 2010). Ginger is available in many forms. Ginger would appear safe, but many women are worried and want to follow professional recommendations (*Davis*, 2004).

This study aims to compare the effect of using ginger versus antiemetic on reliving nausea and vomiting during pregnancy. Regarding number of vomiting per day, the present study revealed that the ginger and antiemetic groups had reduced number of vomiting per day post intervention. The reduction in number of vomiting was better in ginger group than antiemetic group and the difference between groups was statistically significant (p<0.001). This point was studied by many researchers; *Sripramote et al., 2003* reported that ginger and vitamin B6 significantly reduced the nausea scores from  $5.0\pm1.99$  to  $3.6\pm2.48$  and  $5.3\pm2.08$  to  $3.3\pm2.07$  respectively, (p < 0.001). Ginger and vitamin B6 also significantly reduced the number of vomiting episodes from  $1.9\pm2.06$  to  $1.2 \pm1.75$  and  $1.7\pm1.81$  to  $1.2 \pm1.50$  respectively, with (p < 0.01). The mean number change after treatment with ginger was  $0.7\pm2.18$ , more than with vitamin B6, which was  $0.5\pm1.44$  but without a significant statistical difference, (p = 0.498).

*Keating et al., 2002 and Ozgoli et al., 2009* also reported that a number of women show improvement in nausea symptoms measured by VAS scores. In addition, *Sripramote et al., 2003* showed that both ginger (1.5 gm daily) and vitamin B6 (30 mg daily), for three days, significantly reduced the degree of nausea and number of vomiting episodes. Other study by *Chittumma et al., 2007* who using a modified Rhodes 'score shows that the reduction in nausea vomiting scales (episodes of nausea, duration of nausea, and number of vomits) for ginger and antiemetic group. *Finally, Smith et al., 2004* showed that ginger (1.05 gm daily) was equivalent to vitamin B6 (75 mg daily), for three weeks, in reducing nausea (Mean difference 0.2, 90%CI of -0.3, 0.8) and vomiting (mean difference 0.5, 90%CI of 0.0, 0.9) in early pregnancy.

When the comparison made between studied groups regarding score of visual analogue scale, no statistical significant difference was shown pre intervention, but significant difference was observed post intervention. This result disagrees with *pongrojpaw et al.*, (2007) who found that there was no significant difference in the visual analogue nausea scores between the two groups; Ginger was as effective as dimenhydrinate in the treatment of NVP. Other studies in this point proved the reduction in the visual analogue scale post-therapy. Ginger significantly decreased nausea symptoms when compared to placebo (p = 0.0002). (*Basirat et al., 2009 and Vutyavanich et al., 2001*).

When the comparison made between the groups in study regarding changes in overall nausea rating index pre and post intervention, it has been shown that pre intervention; there was statistically significant difference between control and study groups. Post intervention, about one fifth of ginger group hasn't nausea and vomiting compared by more than one tenth in the antiemetic group. This result disagrees with *Sripramote et al.*, *2003 and Ensiyeh et al.*, *2009* who reported that there was statistically insignificant difference between ginger and Vitamin B6 groups regarding the test for overall nausea effect (P = 0.12, P = 0.003 respectively).

When a comparison has made between the study groups regarding Nausea rating index (description of symptoms associated with nausea and vomiting) pre and post interventions, post intervention; it has been shown that improvement in symptoms in both studied groups and there were statistically insignificant differences between groups regarding the general symptoms except description of feeling. This result agrees with *Mohammedbeigi et al.*, (2011) who reported improvement in symptoms using a Rhodes Index Questionnaire during days 1 to 5, there was no significant difference between the ginger and Metoclopramide groups.

## **CONCLUSION:**

*Based on study findings, it can be concluded that:* Pregnant women who consume ginger for relieving morning sickness exhibit less severe morning sickness than those who consume antiemetics. So, the research hypothesis is accepted.

### **RECOMMENDATIONS:**

Based on the results of the present study, the following recommendations were suggested:

- Use ginger as antiemetic drug in relieving mild to moderate nausea and vomiting during the first trimester of pregnancy.
- Replication of the present study using larger sample size and among different samples of selected high –risk pregnant women.

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تأثير استخدام الزنجبيل مقارنة بمضادات القيء لتخفيف غثيان الصباح من الدرجة الطفيفة إلى المتوسطة لدى السيدات الحوامل

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الغثيان والقيء أثناء الحمل يعتبر من المتاعب كثيرة الحدوث أثناء الثلاث أشهر الأولى من الحمل ويستخدم الزنجبيل كعلاج بديل آمن للمرأة الحامل لتخفيف القيء والغثيان أفي شهور الحمل الأولى الهدف من هذه الدراسة هو معرفة تأثير شراب الزنجبيل مقارنة بمضادات القيء لتخفيف غثيان الصباح من الدرجة الطفيفة إلى المعتدلة لدى الحوامل أثناء الثلاثة أشهر الأولى من الحمل تصميم البحث: شبه -تجريبي وهذا لقياس تأثير الزنجبيل لتخفيف الغثيان والقىء لدى السيدات الحوامل أثناء الثلاثة أشهر الأولى بالمقارنة بمجموعة أخرى تتناول العلاج الطبي(مضاد للغثيان والقيء) . **مكان البحث**: أجريت هذه الدراسة في العيادة الخارجية لمتابعة الحمل مستشفى جامعة قناة السويس -الإسماعيلية. عينة البحث: تضمنت عينة البحث 100 من السيدات الحوامل خلال الأشهر الثلاثة الأولى من الحمل ممن يعانون من الغثيان والقيء(من الدرجة الطفيفة إلى المتوسطة). تم تقسيم السيدات إلى مجمو عتين: المجموعة الأولى 50 سيدة تناولت شراب الزنجبيل (مجموعة الدراسة تلك التي تتناول شراب الزنجبيل 1 جرام يوميا لمدة أربعة أيام متتالية)، و50 سيدة تناولت العلاج الطبي المضاد للغثيان والقيء(المجموعة الحاكمة) . *أدوات جمع البيانات* : تم استخدام استمارة استبيان المقابلة الشخصية، استمارة استبيان ماكجيل لتقييم أنماط الغثيان والقيء قبل وبعد الدراسة. النتائج: تبين أن شدة الغثيان والقيء تحسنت بشكل ذو دلالة إحصائية قبل وبعد الدراسة في كلا من مجموعتي الدراسة. وقد تبين التحسن في مجمل الأعراض في مجموعة الدراسة عن المجموعة الحاكمة. والخلاصة: شرب الزنجبيل فعال في تخفيف الغثيان والقيء من الدرجة الطفيفة إلى المعتدلة خلال الأشهر الثلاثة الأولى من الحمل *التوصية*: ويوصى باستخدام الزنجبيل كمضاد للقيء لتخفيف الغثيان والقيء من الدرجة الطفيفة إلى المعتدلة خلال الأشهر الثلاثة الأولى من الحمل

كلمات رئيسية: الغثيان، القىء، الحمل، الزنجبيل، الطب البديل.