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RESEARCH ARTICLES

Effect of Vitamin E Use on Hot Flash Reduction in Menopausal Women

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Abstract : Hot flash is a sudden hot sensation that usually appears in the chest, neck, and face, accompanied by sweating, heart palpitations, and can be triggered by a warm environment, hot drinks, or emotional stress. These symptoms are often the main reason women seek medical care during perimenopause because it can interfere with quality of life. Vitamin E, with its antioxidant properties, has been shown to be able to reduce the intensity and frequency of hot flashes through improved adrenal function. This study aims to assess the effect of Vitamin E administration on the reduction of hot flashes in menopausal women. The method used was an experiment with administering Vitamin E daily for four weeks to the study subjects. Data was obtained from a questionnaire of hot flash patients in 2022 at Bhayangkara Hospital Medan based on a doctor's examination and the HFRS scale. The results of the statistical test showed a P-Value of 0.000, lower than alpha 0.05, so the null hypothesis was rejected. In conclusion, Vitamin E is significantly effective in reducing hot flashes in menopausal women.

Keywords : Hot flashes, vitamin e, hfrs scale, menopause

INTRODUCTION

Menopause is the natural end of the menstrual cycle that can occur when women enter the age of 40–58 years. A woman is said to be menopausal when she no longer has her period for 12 months in a row. Menopause is not only characterized by the cessation of menstruation but is accompanied by many changes, ranging from physical appearance, psychological conditions, to decreased sexual desire.[1]

Menopause is the permanent cessation of menstruation for 12 months due to an estrogen deficiency that is not pathological.[2] The average age of menopause is 51 years. Most women who have gone through menopause experience vasomotor symptoms, in addition to vasomotor symptoms menopause can also affect many other areas of the body such as urogenital, psychogenic, and cardiovascular.[3]

Menopausal syndrome is mainly associated with decreased levels of

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circulating estrogen. *Hot flash*, vulvovaginal atrophy, and sexual dysfunction are caused by complex changes that occur during menopause. At the ovarian level, there is a thinning of ovarian follicles, especially granulosa cells. Therefore, the ovaries are no longer able to respond to pituitary hormones. Levels of *follicle stimulating hormone* (*FSH)* and *leutinizing hormone* (*LH)* increase due to the lack of feedback inhibition, and the production of estrogen, progesterone, and ovarian inhibins is increased. However, androgen production continues in the remaining ovarian and adrenal glands, which are converted into estrogen through peripheral aromatization. About 1.3 million women experience a menopausal transition each year. About 75% of women experience vasomotor symptoms. These symptoms include *hot* flashes, night sweats, palpitations, and migraines.[3] *Hot flashes* often last about 1-5 minutes, *Hot flashes* can cause considerable suffering.[4]

Hot flashes are a sudden, spontaneous, and episodic sensation of heat that can be felt in the chest, neck, and face immediately followed by sweating, heart palpitations, headaches, weakness, fatigue, fainting, and anxiety, and can also be triggered by a warm environment, hot drinks, or emotional stress. especially if the symptoms interfere with their quality of life.[5]

Hot flashes can vary in duration, severity and frequency. The frequency and severity can increase during the transition to menopause and peak approximately one year after the last menstrual period. This can last for six months to several years, although the frequency and intensity decrease over time after the last menstrual period. On average, this lasts less than five minutes. The average frequency varies from 10 times per day to several times per week.[6] Scientists have found the effect of vitamin E supplement use on a reduction in *hot flash symptoms*.[7] According to Stuenkel suggests that vitamin E supplementation therapy relatively relieves menopausal complications, namely vasomotor symptoms.[8]

One study showed in their study that antioxidants including vitamin E play a role in the reduction of postmenopausal complications such as *hot flashes*.[9] Another study showed significant results that were the effects of taking oral vitamin e capsules on *hot flashes*.[10] From one of the studies, scientists found the fact that vitamin E can also reduce the occurrence of symptoms of *hot flashes* in menopausal women as an alternative therapy and supportive therapy in the treatment of *hot flash* symptoms that occur in menopausal women with *hot flash symptoms*.[11] From the statistical data reported by Ziaei et al. said that there was a significant association ($p<0.0001$) between the occurrence of a decrease *in hot flashes* and the administration of vitamin E for 4 weeks in postmenopausal women.[12]

Based on the description above, the author will research the effect of the use of vitamin E on menopausal women with *hot flash symptoms.*

METHODS

This study uses an experimental method. By providing treatment to the study subject, namely the administration of vit E per day for 4 weeks, the data of this study was taken from a questionnaire of *hot flash* patients from 2022 at Bhayangkara Hospital Medan based

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on a doctor's examination and based on *an HFRS* questionnaire.

RESULTS

Table 1 *Wilcoxon Test Results*

Treatment	Groups	(Mean ± Std.Dev)	*P-Value*	Conclusion
Vitamin E	Before the administration of vit E	3.7 ± 0.47	0.000	Efective
	After the administration of vit E	1.1 ± 0.91		
	Differences	2.6		

The results of the Wilcoxon test using SPSS 26 on the effect of vitamin E administration on the reduction of *hot flashes* in menopausal women were analyzed based on Table 1. The treatment was carried out by administering vitamin E, and the testing group consisted of before the administration of vit E and t. The mean before treatment (before the administration of vit E) was 3.7 ± 0.47, while the mean after treatment (after administration of vit E) decreased to 1.1 ± 0.91. The difference between the two averages is 2.6.

The results of the statistical test showed a P-Value of 0.000, which is below the alpha significance level of 0.05. Therefore, the zero (H0) hypothesis is rejected, and the conclusion that can be drawn is that the administration of vitamin E is significantly effective in lowering *hot flashes* in menopausal women. Thus, there is strong statistical evidence supporting the positive effect of vitamin E in reducing *hot flash symptoms* in the population of menopausal women who were the subject of the study.

DISCUSSION

The results of the study showed that there was an effect of vitamin E administration on reducing *hot flashes* in menopausal women. In this study, as many as 20 menopausal women were given vitamin E, after a four-week observation period, the results showed that the group given vitamin E experienced a more significant decrease in frequency and intensity *of hot flashes* compared to before being given vitamin E.

This study shows that vitamin E can be an effective solution in reducing *hot flash* symptoms in menopausal women. *Hot flashes* are a common symptom in the menopausal period and are often a problem for women who experience them. With the decrease in the frequency and intensity of *hot flashes* associated with vitamin E administration, it can be said that vitamin E has the potential to be an alternative in addressing these problems.

Vitamin E has powerful antioxidant properties, and this has been backed up by scientific research. One of the studies conducted by Soha Abdel-Aziz and her colleagues in 2020 concluded that vitamin E has an important role in reducing oxidative stress in the body. In the study, researchers analyzed 50 menopausal female participants and measured levels of oxidative stress before and after the administration of vitamin E supplements. The results of the study showed that giving vitamin E for 12 weeks can significantly reduce oxidative stress levels in menopausal women. Oxidative stress occurs when the amount of free radicals in the body exceeds the capacity of the natural antioxidant system. This

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condition can lead to cell and tissue damage, and it can also affect hormonal balance.[37]

Hormonal imbalances, especially estrogens, play a major role in the appearance of *hot flashes* in menopausal women. *Hot flashes* are a sudden, intense sensation of heat felt in the face, neck, and chest, which is often accompanied by excessive sweating. The decrease in estrogen levels that occur during menopause can trigger hormonal imbalances and increase the frequency and intensity of *hot flashes*. By reducing oxidative stress that occurs in the body, vitamin E can help affect hormone production and balance. This study has also shown that women who take vitamin E supplements experience a reduction in the frequency and intensity of *hot flashes*.

Another study conducted by Lee and his colleagues in 2015 involved 125 menopausal women who were given vitamin E supplements for 16 weeks. The results showed that the women experienced a significant decrease in the frequency of *hot flashes* compared to the control group that did not receive the supplement.[38]

Based on the results of this study with the support of previous research, it can be stated that vitamin E has strong antioxidant properties and can help reduce oxidative stress in the body. This can affect the production and balance of hormones, especially estrogen, which plays a role in the appearance of *hot flashes* in menopausal women. Studies have shown that vitamin E supplementation can help reduce the frequency and intensity of *hot flashes* in menopausal women. Therefore, the administration of vitamin E can be one of the effective methods in overcoming *hot flash* problems in menopausal women.

CONCLUSION

Based on the results of the research conducted, the following conclusions can be given:

1. All menopausal women in this study experienced *hot flashes* in the mild category.
2. All menopausal women after being given vitamin E experience a decrease *in hot flashes* to the point that they can be declared in the category of no *hot flash.*
3. The administration of vitamin E has a significant influence on the decrease in *hot flashes* in menopausal women.

Based on the conclusion of the results of this study, there are several suggestions proposed, including the following:

1. Menopausal women should adopt a healthy lifestyle that can help reduce menopausal symptoms. These include a balanced diet, regular exercise, and stress management.
2. These aspects can make a positive contribution to general well-being and reduce the impact of menopausal symptoms.
3. When considering the use of vitamin E to reduce *hot flashes*, menopausal women should discuss with a health professional first.
4. The appropriate dosage and potential interactions with other medications need to be evaluated to ensure safety.
5. To reinforce the findings of previous studies, it is recommended to use a study

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design that includes control groups and randomized treatment can help to more definitively identify the impact of vitamin E administration. In this way, research can more effectively separate the effects from other factors that might affect the results.

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