

*Original Article***Effects of evening primrose oil and vitamin E on the severity of periodical breast pain**

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Abstract

Background: Women's role in family and their participation in social, economical and cultural activities make them a part of development process. Paying attention to women's health is a social investment. Nowadays 70% of women suffer from breast pain and two third of these pains are periodical. Among the pain killing methods, herbal medicine is more compatible with human body and has fewer side effects because the drugs are natural. This study aimed to find the effects of evening primrose oil and vitamin E on the severity of periodical breast pain in women.

Methods: It was a single-blind semi-experimental study. The studied sample included 66 women 18-40 years of age suffering from breast pain and tenderness referred to ten health centers of Isfahan in 2007. Sampling method was simple random. The patients were divided into two groups to receive evening primrose oil or vitamin E. Severity of pain was assessed by Cardiff chart before and after one month of intervention. Data were analyzed using descriptive and inferential statistics via SPSS software.

Results: The severity of periodical breast pain in both groups decreased significantly before and after the medication (in both groups, $p < 0.05$)).

Conclusion: According to the findings, evening primrose oil decrease the severity of pain and it is more effective and better than the known and common vitamin E medicine.

Key words: Primrose oil, vitamin E, periodical breast tenderness, periodical breast pain

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Women are half of the population of the world. More than 30% of Iranian population is women of 14-45 years of age. The increase of women's role in the society and workplaces has changed their roles, lifestyle and family patterns. Now, women are more interested and responsible for their health care and they demand better health care services.¹ Periodical breast pain and tenderness is a problem that most women experience before their menstruation. Any problem in breasts, even if it is little and unimportant can cause emotional disorder in women.² About

70% of women complain from breast tenderness and pain which would destroy their daily activities in 10-30% of them.³⁻⁵ Medical treatment of breast pain includes complicated methods that some of them are doubtful to have any effect at all; and most chemical treatments have a lot of side effects.⁶ It is believed that natural herbs are useful for treatment of many diseases.⁷ Evening primrose oil as a non-hormonal medicine has been advised in many researches for treatment of breast pain and tenderness.⁷⁻⁹ Herbal medicine naturalness makes them more compatible with human

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body with fewer side effects. Evening primrose oil has few side effects including headache, diarrhea and indigestion in previous study.¹⁰

One of the causes of periodical breast pain before menstruation is hormonal changes due to climate, geographical, cultural and social situations. Also, the effect of this herbal medicine is still under research and need more studies. There are several vitamins used to treat the breast tenderness and pain and among those, vitamin E is the most common.^{7, 11} This study compared the effect of evening primrose oil and vitamin E as an antioxidant on the breast pain and tenderness.

Methods

This was a single- blinded study on 66 women suffering from periodical breast pain and tenderness referred to ten health centers of Isfahan in 2007. The study population included all women referred to one of the health centers administered by both Isfahan health-nets during the data collection period. Studied samples were selected by simple random method and based on inclusion criteria including age of 18-40, having more than 3 month history of pain, having severe pain for more than 3 days in each menstruation cycle.

Informed consent was taken from all participants of the study. Data were collected using Cardiff chart which is a standard instrument. Since it was the first time of using Cardiff chart in Iran, its correlation coefficient (r) was measured by visual scale before and after treatment and it was 0.89 and 0.92 respectively and this proved the reliability; and content validity was proved by some professors in Isfahan University of Medical Sciences. Both groups filled the Cardiff chart before the intervention. The intervention started at the the beginning of menstruation cycle for every woman; this helped to specify the periodical and non-periodical pains. According to the standard formula the severity of pain was calculated; (Number of days with severe pain $\times 2$) + (number of days with average pain) divided by (all days minus severe pain days) + (all days - days with average pain) + (all days - days with no pain) (9).

Result numbers more than 14 were counted as severe pain, 7-14 as average pain; and less than 7 was no pain.

At the end of the second month the participants were randomly divided into two groups as following; one group received 3 g evening oral primrose oil and the other group 600 mg oral vitamin E three times during a day. Cardiff chart was filled again after a month and data were analyzed using descriptive and inferential statistics and SPSS software. It should be mentioned that before the intervention the trial was approved by the research ethics committee of Isfahan University of Medical Sciences.

Results

From 66 participants, 5 were missed for the following reasons: one didn't use the medicine appropriately, one didn't chart the data correctly, one in the vitamin E group used a complementary medicine for menstruation, one in the evening primrose oil group decided to get pregnant and one changed her address and contact number and there was no way to contact her any more. The study was carried out by 61 women, 31 in evening primrose oil group and 30 in vitamin E group. The mean age of women in evening primrose oil group was 30 and in the other group was 29.33 years. The mean age of the first menstruation was 12.22 years for the evening primrose oil group and 13.12 years for the other group. The prevalence of twice pregnancy was 35.5% in the evening primrose oil group and 7.26% in the other group. The statistical tests showed no significant difference between the two groups regarding mean age, mean age of the first menstruation, and twice pregnancy ($p > 0.05$).

Reviewing the findings in table 1 shows a significant difference between the severity of pain before and after the intervention in both groups. In evening primrose oil group, 41.9% had severe pain and 58.1% had moderate pain before the intervention and it decreased to 3.2% and 35.2%, respectively after it ($p < 0.001$). In the vitamin E group, 36.7% had severe pain and 63.3% had moderate pain be-

fore the intervention and it decreased to 23.3% and 50%, respectively after it ($p = 0.04$). More-

over, the two medicines were compared before

Table 1. Comparing the severity of pain in study groups before and after the study

Groups		Evening primrose oil		Vitamin E		
		Number	Percentage	Number	percentage	
Before intervention	Severe	13	41.9	11	36.7	P = 0.788 $\chi^2 = 0.425$
	Average	18	58.1	19	63.3	
	No pain	-	-	-	-	
After intervention	Severe	1	3.2	7	23.3	P < 0.003 $\chi^2 = 11.585$
	Average	11	35.2	15	50	
	No pain	19	61.3	8	26.7	
P value		< 0.001<		0.04<		

and after the intervention. χ^2 test showed that before the intervention both groups had the same severity of pain and there was no significant difference between them ($p = 0.788$); after using drugs, there was a significant difference between the severity of pain in the two groups show more decrease in evening primrose oil group ($p < 0.05$).

Discussion

Findings showed that the herbal medicine evening primrose oil decreased the periodical breast pain significantly. This is in accordance with the Plomres study (2002) who showed that both fish oil and evening primrose oil effectively decrease the breast pain.¹² The results of a study by Kornek et al (2004) also showed that after one month intervention, just 3 out of 19 patients (15.3%) had still pain and after 3 months treatment, all of them were healed.¹²

Vitamin E also decreased the pain to some extent. Dolatiyan in her study in 2001 showed that vitamin E significantly decreased the symptoms of pre-menstruation syndrome including physical symptoms in the breast and the breast pain and tenderness disappeared in 41.9% of the subjects.¹³

Comparing the two drugs after the intervention showed that the severity of pain in evening primrose oil group decreased more than vitamin E group and the evening primrose oil was more effective. Cheung (2002) also found the same results and believed that evening primrose oil compared to placebo group decreased the pain severity effectively and there was a significant difference between the two groups ($p < 0.001$).¹⁴ Some other studies agree with this finding.¹⁵

However, Qureshi et al showed that although evening primrose oil was effective in decreasing breast pain, compared to non steroidal anti-inflammatory drugs, it was less effective and there was no significant difference between the two groups. The difference in dosages used in studies may be a reason for different results. In this study the dosage of medicine for all subjects were 3 g/day while in Qureshi study evening primrose oil was prescribed just 1 g/day.¹⁶ Rosolowich (2006) said that the effective dosage of evening primrose oil for the breast pain is at least 3 g/day.¹⁷

Considering studies in different countries and the findings of this study, the herbal medicine evening primrose oil can be recommended for decreasing of the periodical breast pain.

Furthermore studies are needed to show whether this drug can replace synthetic and chemical medicine. Also, since Iran has a great climate to grow this medicine, it can be grown

and used as medicine especially for women's medicine.

Also, the authors declare that have no conflict of interest in this study and they have surveyed under the research ethics.

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