



Nutritional Supplement Management of Breast Pain



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Short Communication

Breast pain, also known as mastalgia or mastodynia, is a common symptom that affects 70% of women during their lifetime [1]. It can impact quality of life and cause anxiety and distress for the patient [2]. Patients are concerned that breast cancer is the cause of the pain, but fortunately, the pain is rarely associated with breast cancer and was reported in only up to 7% of breast cancer patients in one population-based study [2].

Patients should initially be evaluated with a history and physical exam. The pain can be characterized as cyclic or non-cyclic [3]. Cyclic pain typically occurs one to two weeks prior to a woman's period and is relieved with the onset of bleeding. The pain is usually bilateral and may be associated with breast swelling with the onset of each period. Cyclic pain is thus, hormonally related. Non-cyclic pain, on the other hand, is not associated with menstrual cycles. Aside from post-surgical pain, which is managed with pain medication, and infectious causes, like mastitis or an abscess, which are managed with antibiotics with or without drainage or surgical intervention, possible causes include large or heavy breasts, trauma, pregnancy, fibrocystic disease, or unknown etiology [4].

After a history and physical, the next step is to determine if diagnostic imaging is indicated. Diagnostic imaging usually consists of a mammogram and/or ultrasound. An MRI is sometimes indicated depending on the level of concern. Often, no imaging is needed, but can be considered in patients with severe pain, pain affecting quality of life, or presence of implants that may be contributing to the pain. If diagnostic imaging is indicated and does not reveal an underlying parenchymal or radiological abnormality, and the patient has a normal breast exam, then the patient can be reassured. Most patients are satisfied with reassurance and do not need any intervention.

For women with persistent pain, narcotics are rarely indicated, and non-pharmacologic interventions should be attempted first. Mechanical support with a properly fitted sports bra can provide some pain relief. One study showed that 85% of patients who used a sports bra had complete pain relief [5]. Exercise therapy can also result in pain relief [6]. Maintaining a healthy weight and avoiding smoking may resolve the pain, too.

Additionally, simple changes to diet can alleviate breast pain. Limiting caffeine intake, both in food and beverages, and eating a low-fat diet can be helpful. If patients continue to have pain, they may try supplements for relief. Supplements are easily accessible and available as over the counter oral supplements. Supplements that can reduce breast pain are flaxseed, evening primrose oil, and Vitamin E.

Flaxseed (*Linum usitatissimum*) is composed of lignan, an antioxidant that inhibits aromatase, resulting in decreased estrogen synthesis [7]. It also contains unsaturated essential fatty acids, which lead to the synthesis of omega-3 fatty acid and subsequently, eicosanoids, which have anti-inflammatory effects.

Evening primrose oil (*Oenothera biennis*), commercially known as EPO, contains gamma linolenic acid, an essential fatty acid that has been found to be low in patients with breast pain [8,9]. The deficiency in gamma linolenic acid causes breast tissue to be sensitive to sex hormones, resulting in breast pain, and thus, EPO counteracts this.

Vitamin E is another antioxidant that decreases breast pain. Vitamin E acts against lipoxygenase and cyclooxygenase, which prevents oxidation of unsaturated fatty acids and decreased production of prostaglandins.

Control of breast pain can be subjective, but there are a few studies that looked at the effects of these supplements on decreasing pain. A double-blind randomized placebo-controlled trial was conducted with premenstrual women with cyclic breast pain [10]. The women were randomly assigned to 6-month treatments with 1,200 international units (IU), 3,000 mg of EPO a day, 1,200 IU Vitamin E with 3,000 mg of EPO or double placebo. Pain was measured by the modified McGill Pain Questionnaire both at enrollment and after six months of treatment. The three groups reported a non-significant decrease in cyclic pain and the study concluded that these regimens may decrease breast pain severity.

Another double-blind randomized placebo-controlled trial on 100 women with cyclic breast pain were assigned to one of four groups: 2,000 mg of daily EPO, 400 IU Vitamin E, 2,000 mg of daily EPO with 400 IU Vitamin E, or placebo for 6 months [11]. There was no significant difference between the three treatment groups, but there was a significant difference between the treatment groups and placebo group.

A quasi-randomized clinical trial compared the effects of flaxseed, EPO, and Vitamin E on the duration of cyclical breast pain in women age 18 to 45 years old [12]. One group received 30 grams of powdered flaxseed, another group received two 1,000 mg capsules of EPO, and the last group received 1 capsule of 400 IU of Vitamin E daily for two menstrual cycles. The mean duration of breast pain was 5.61 days in the flaxseed group, 7 days in the EPO group, and 8.26 in the Vitamin E group. Only the flaxseed group had a significantly decreased mean duration of breast pain within the two months of intervention.

61 women with cyclic breast pain were randomized to receive 3,000 mg of daily oral EPO or 600 mg of daily oral Vitamin E for one month at the beginning of their menstrual cycle [13]. Either intervention significantly reduced the severity of breast pain.

In summary, breast pain is a common complaint among women, but, fortunately, is often of benign etiology. Women can take simple measures to alleviate the pain, such as wearing a sports bra and eating a healthy diet. If patients continue to have pain, they may take supplements. Flaxseed, EPO and Vitamin E may decrease breast pain in women, particularly those with cyclic breast pain. Effects are not immediate and can take time, usually

at least a month. The supplements are easily accessible options that women with breast pain should consider in discussion with their physician.

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