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# Vitamin E Therapy In Fibrocystic Breast Disease

## INTRODUCTION

About 20% of all American women suffer from fibrocystic disease of the breast (Gonzalez, 1980). Because it is also the commonest benign breast disorder encountered in Trinidad, we decided to try vitamin E therapy. In 1965, Abrams succeeded in relieving premenstrual breast symptoms in 16 of 20 women with mammary dysplasia and reducing the size of lumps in 13, on vitamin E treatment. Sundaram et al (1981) achieved considerable improvement in 85% of their cases using the same drug.

## MATERIALS AND METHODS.

Thirty women, aged 16 - 49 years, with fibrocystic breast disease were treated with vitamin E, 200 mg. three times daily for 6 weeks. Sixteen other patients, matched for age and severity of disease were put on no treatment for the same period. All patients had pain and tenderness with some induration of the breast tissue while 8 in the study group and 3 of the controls had discrete breast lumps. Diagnosis was made after biopsy in 8 and on clinical grounds in 22 of the study group while in all 16 of the controls the diagnosis was clinical. All patients were reviewed 8 weeks later. The initial and final findings were recorded by a single examining surgeon.

## RESULTS.

In the treated group 18 patients (60%) had complete relief of pain and tenderness with marked softening of the breast tissue. Though not completely relieved, 8 others (26%) felt significant improvement. Three patients had no relief from pain and one, who showed no change in the breast lump needed excision biopsy. The other 7 with breast lumps experienced marked relief from pain and decrease in size of the masses. Therefore a total of 26 patients (86%) had significant improvement and 4 showed no change. (Table 1).

Of the untreated group 1 had complete relief, 2 felt better and 13 remain unchanged (Table 1). Two of these who had marked breast pain and tenderness for longer than

6 months continued to have severe symptoms. They both subsequently experienced appreciable pain relief and softening of breast tissue after 8 weeks of vitamin E therapy. Of those with breast lumps, the patient with complete pain relief no longer had her lump, while the other 2 were unchanged.

## DISCUSSION.

It is still not clear how vitamin E produces these effects. Although many women experience relief, some do not. The reduced incidence of mammary dysplasia in women on oral contraceptives (Ory, Cole, MacMahon et al 1976) suggests a possible hormonal basis for the disorder, but so far, no specific hormonal derangement has been implicated.

Vitamin E alters the blood levels of certain hormones including the adrenal androgens and the gonadotrophins, and it is thought that this may be responsible for the improvement in these patients (Gonzalez, 1980). The serum concentration of dehydroepiandrosterone (DHEA), a weak adrenal androgen, is significantly higher in patients with mammary dysplasia than in controls. After vitamin E their serum DHEA is reduced to near normal values (London et al, 1982 (b)). This is difficult to interpret however, since non-responders also show a decrease.

Physiologically, oestrogen, primarily oestradiol which is largely converted by oxidation to oestrone and oestriol, is the most potent mammogenic stimulus. As an early response, in addition to increased growth of the mammary ducts, it causes a loosening of the periductal connective tissue associated with fibroblastic proliferation of the general stroma (Nicholis et al 1971). It has been suggested that the antioxidant property of vitamin E prevents conversion of oestradiol to oestrone and the resultant hormonal alteration is beneficial in fibrocystic disease (Abrams, 1965).

In this disorder, the ratio of serum cholesterol/ high density lipoprotein cholesterol is higher than in age - matched controls, an abnormality that is corrected by



vitamin E therapy (Sundaram et al 1981).

Since fibrocystic disease increases the risk of malignancy, successful treatment of the condition may decrease the development of cancer. Breast cancer patients and their relatives have higher serum low - density lipoproteins (LDL) and lower high - density lipoproteins (HDL) than controls (Barclay et al 1955). On vitamin E therapy for fibrocystic disease an increase of HDL and decrease in LDL has been observed (Sundaram et al 1981). This may be beneficial not only in treating mammary dysplasia but also in preventing malignant change in these patients.

The ideal regime of vitamin E for this disease is not yet settled (London et al 1982 (b)). However, it is suggested that patients be put on  $\alpha$  - tocopherol acetate 600 IU daily for 2 menstrual cycles and if there is objective improvement,

they be maintained on this treatment for 6 months (London et al 1982 (a)).

### SUMMARY.

Eighty-six percent of patients with fibrocystic breast disease improved on vitamin E therapy compared to only 19% of untreated controls. Since this common breast disorder produces much discomfort and pain we recommend this safe, effective and inexpensive treatment. ♦

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TABLE 1: Response to Vitamin E Therapy.

	Number of patients	Complete Relief	Improved (Decreased pain)	No Change
Treated	30	18 (60%)	8 (26%)	4 (14%)
Controls	16	1 (6%)	2 (12.5%)	13 (81%)