

# EFFECT OF SUPPLEMENTATION OF SOYABEEN ON POST OPERATIVE BREAST CANCER PATIENTS

Mrs. Rosy kamaraj, Assistant professor, Department of Food Science and Nutrition, Holy Cross Home Science College , Thoothukudi.

## ABSTRACT

Worldwide, more than a million women are diagnosed with breast cancer every year accounting for a tenth of all new cancers and 23% of all female cancer cases. Breast cancer incidence rates vary considerably, with the highest rates in the developed world. The phytochemicals which are present in soybean and flax seed play a major role in many chronic diseases like cardiovascular disease and diabetes mellitus. Phytoestrogens are plant constituents that possess either estrogenic or antiestrogenic activity. Traditionally soybean and flaxseed have been added in Asian food. Both of them possess rich source of phytoestrogen. Hence the present study aimed to evaluate the efficacy of roasted flaxseed for post-operative breast cancer patients. 50 breast cancer patients and 10 age & sex matched, apparently healthy normal female formed the subjects for this study. These patients were further divided into five groups consisting of 10 patients each were subjected for different supplements and analyzed further. Details of supplements group: normal control: drug control (tamoxifen), group I tamoxifen and soybean supplement, group II: tamoxifen and soybean supplement. The supplement was carried out for 90 days. The analysis was done in hematological and biochemical parameters before and after supplementation for all the sub samples. The results show some extents of the changes among the supplementation group.

## I. INTRODUCTION

In this new millennium, the public and its health care systems are faced with more chronic illnesses related to aging; lifestyle; environment; and dietary factors, such as cancer, diabetes, osteoporosis, cardiovascular, and other chronic illnesses. Among these chronic diseases, cancer is one of the life threatening and dreadful diseases. Cancer is one of the leading causes of death in the world, particularly in developing countries.

Apart from energy imbalance, dietary risk factors have not been consistently associated with risk of the disease. Diet has been implicated in the etiology of breast cancer. It was hypothesized that a high fat intake increases the risk of breast cancer. Diet did in fact play a large role in human cancer. Probably the most consistent finding was that of a direct relationship between cancer risk and intake of fruits and vegetables, whole grain cereals, and some types of fat such as those with omega -3 fatty acids. (Weber BL, et al, 2008).

The phytochemicals which are present in soybean and flax seed play a major role in many chronic diseases like cardiovascular disease and diabetes mellitus. Phytoestrogens are plant constituents that possess either estrogenic or antiestrogenic activity. Traditionally soybean and flaxseed have been added in Asian food. Both of them possess rich source of phytoestrogen. There are many complementary therapies available that may help to establish harmony. Scientific research on several of these therapies is underway, but will take a long time. However, any effort that orders and organizes the environment, increases creative

endeavor and establishes beauty in one's life will help to increase the harmony within. Cancer diagnosis gives permission to take life in hand and improve its quality. There are many nutritional supplements recommended for the cancer patients. But none of them were scientifically proved to have curative effect over breast cancer.

NCI states that the known, serious side effects of tamoxifen are blood clots, strokes, uterine cancer, and cataracts. Other side effects of tamoxifen are similar to the symptoms of menopause. The most common side effects are hot flashes and vaginal discharge. Some women experience irregular menstrual periods, headaches, fatigue, nausea and/or vomiting, vaginal dryness or itching, irritation of the skin around the vagina, and skin rash. Men who take tamoxifen may experience headaches, nausea and/or vomiting, skin rash, impotence, or a decrease in sexual interest. (National cancer institute, 2011).

The need of an hour is to find out or formulate the compound that can cure / control / prevent cancer, without adverse side effects or reduces the risk of the side effects due to cancer therapy through nutritional supplementation. Thus, the present study “**EFFICACY OF SUPPLEMENTATION OF SOYABEEN ON POST OPERATIVE BREAST CANCER PATIENTS**” is aimed to look for the chemo preventive effect of flax seed. To fulfill the aim, the following objectives were adopted.

#### **Objectives:**

1. To find out the risk factors of the breast cancer.
2. To evaluate the nutritional status of the patients.
3. To analyze the efficacy of supplements of the patients.

#### **MATERIALS AND METHODS**

The methodology pertaining to the study the “Efficacy of flaxseed and soybean on Post- Operative Breast Cancer Patients” is discussed under the following headings.

Phase I: To assess the general profile and possible risk factors of the breast cancer by the interview schedule.

Phase II: Efficacy of the chosen supplements on postoperative breast cancer patient

#### **1. SELECTION OF SUBJECTS**

According to Ranjit (2004) Purposive sampling method was adopted in selecting the samples. The subjects were selected from the MEDICITY HOSPITAL, Madurai.

#### **II. EFFICACY OF THE CHOSEN SUPPLEMENTS ON BREAST CANCER PATIENTS**

##### **The Subjects**

The assessed case reports of various cancer patients for the period from 2011 to 2013 in the above mentioned cancer centres were taken for the study. In these centres about 2756 male and 2148 female patients with various cancers was found. Out of 2148 female cancer patients, 638 patients were found to be affected by breast cancer, 606 were suffering from cervical cancer and remaining 904 patients were affected by other cancers like stomach, head and neck, vagina, colon, leukaemia, liver and lung. The investigator selected the

breast cancer patients as identified by oncologists using various diagnostic methods, like breast density, mammography, MRI, ultrasound scan and Biopsy.

Out of 638 breast cancer patients, 93 patients did not turn up to the cancer Centre for undergoing further treatment. The reasons attributed for such discontinuance may include financial problem, psychological reasons, switching over to other treatments or hospitals, or even death. Among the 545 patients who had undergone both surgery as well as radiation treatments with chemotherapy, 459 were undergoing hormonal therapy because of an estrogenic drug namely tamoxifen because of their ER+ve. The remaining 86 patients had ER-ve and hence undergone no further treatment.

Hence, the above hormonal therapy patients were recruiting for the study. The patients' addresses were collected and requested them to assemble in the hospital to gather background information individually by using the interview schedule method with their consent. Out of 459 breast cancer details of supplements group:

Group I	: Drug control (Tamoxifen)
Group II	: Tamoxifen and soya been supplemented
Anticancer drug used	: Tamoxifen (TAM)
Source	: M/s Nolvadex, Hyderabad
Dose	: 10 mg / day
No of doses	: 180
Route of administration	: Oral
Study period	: 180 days
Name of the supplement	: Soya been
Nature of supplement	: Roasted
Supplement Dose	: 10mg / day
No. of doses	: 180
Route of administration	: Oral
Vehicle	: Butter milk
Quantity	: 100ml / dose
Study period	: 180 days

## RESULTS AND DISCUSSION:

The results of the study on “Efficacy of supplementation of soya bean on post-operative breast cancer patients.” are discussed under the following

Headings:-

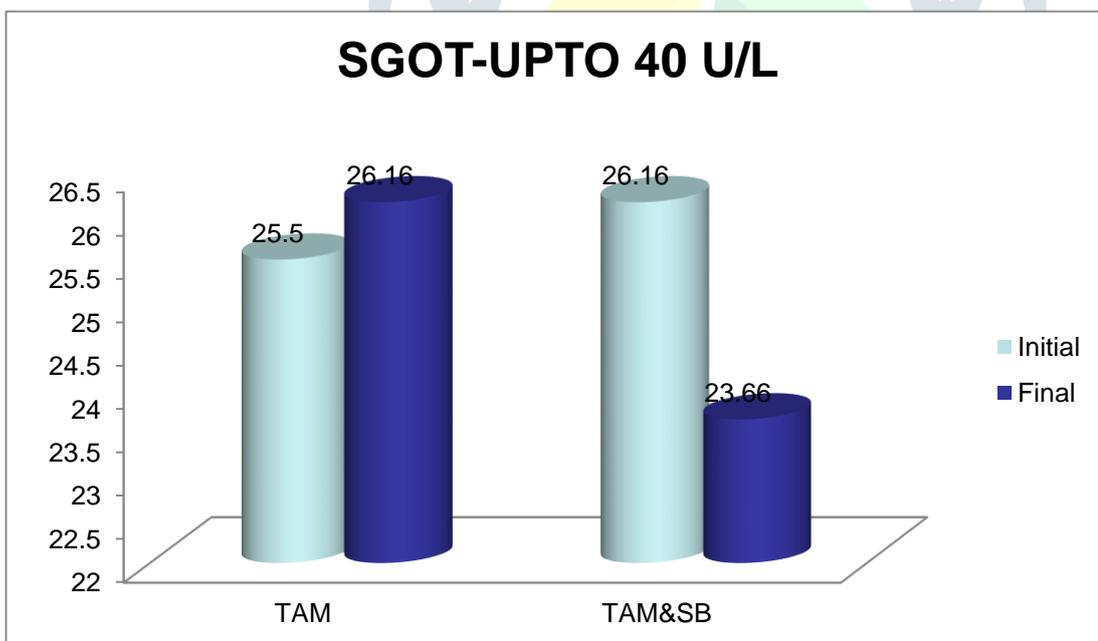
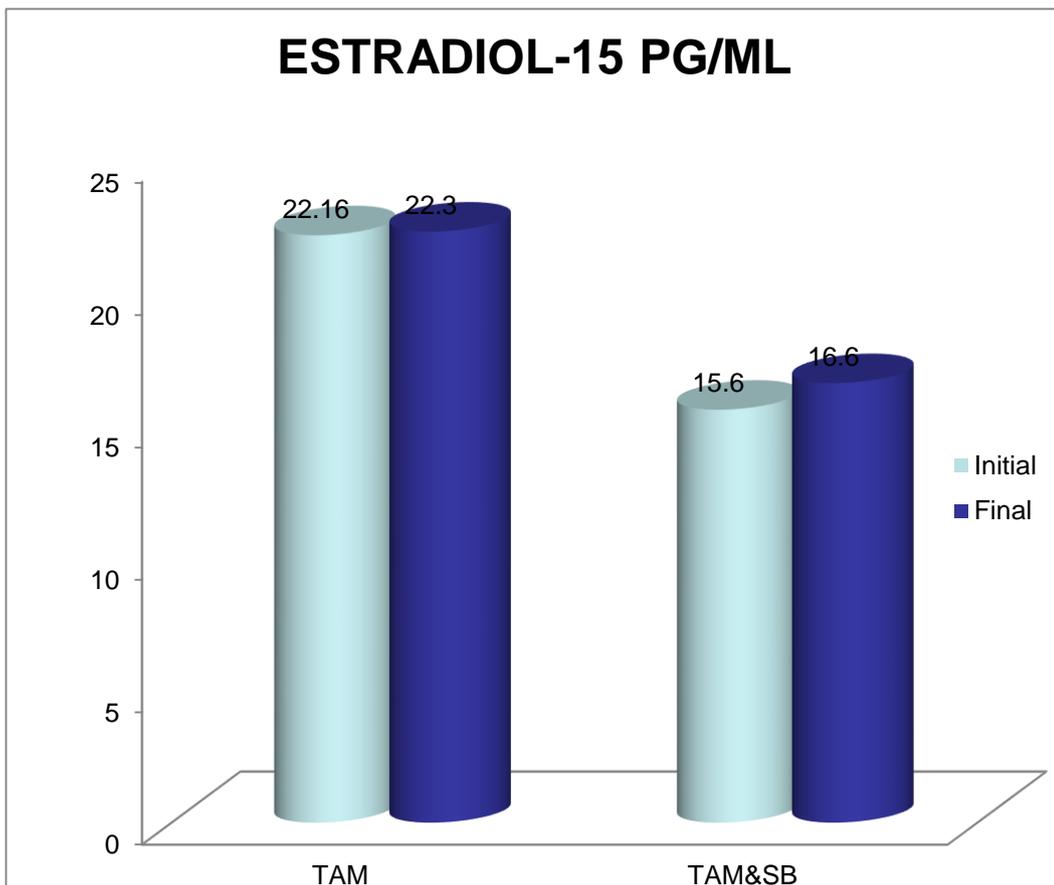
1. Biochemical Profile on Selected Post- Operative Breast Cancer Patients
2. Total cholesterol of the selected post operative breast cancer patients

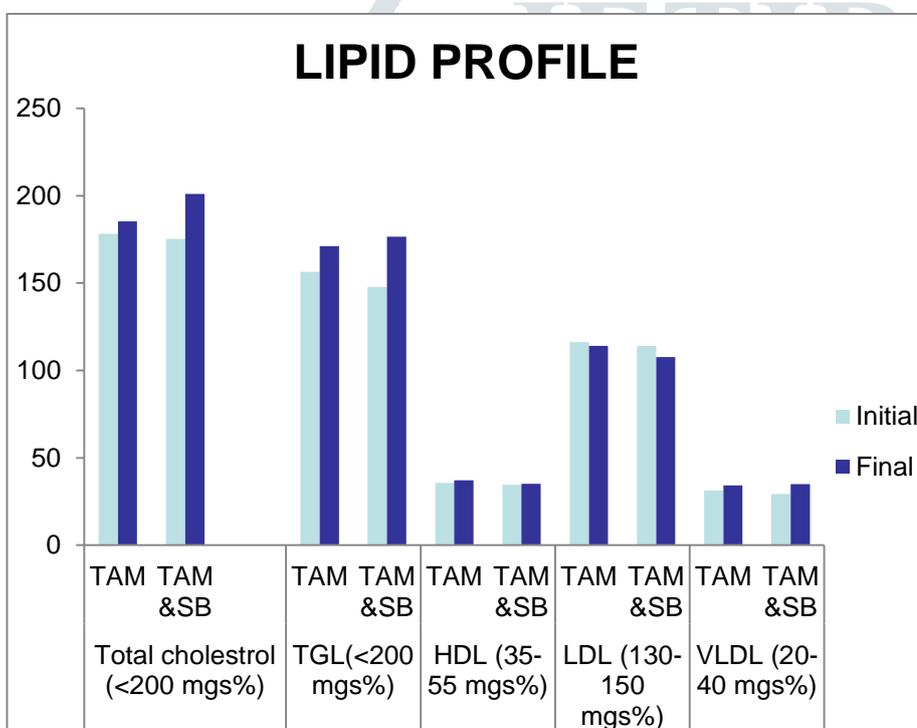
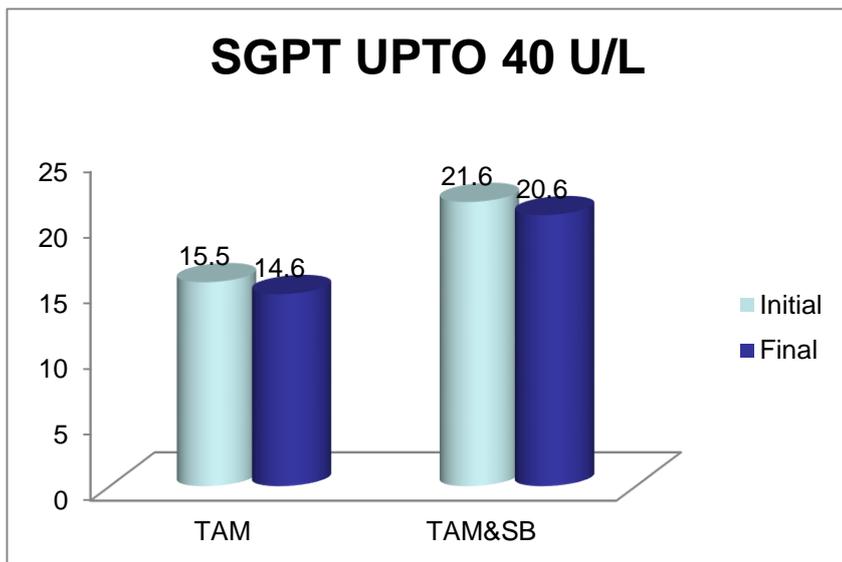
### HEMATOLOGY

S.NO	MEAN VALUE						
	Group	Hb g/dl		RBC N $\times$ X10 <sup>3</sup>		WBCX10 <sup>3</sup>	
		Initial	Final	Initial	Final	Initial	Final
1.	TAM	10.8	10.03	2.9	2.6	7242	6300
	TAM&SB	10.2	11.2	2.8	2.8	6792	7766

### BIOCHEMICAL PROFILE

S.NO	MEAN VALUE						
	Group	TOTAL PROTEIN		ALBUMIN gms/dl		GLOBULIN gms/dl	
		Initial	Final	Initial	Final	Initial	Final
1.	TAM	7.62	6.9	4.6	4.1	3.23	3.28
2.	TAM&SB	7.48	8.08	4.1	3.6	3.08	3.58





## CONCLUSION

From the result we observed some extent of betterment in the supplemented group II than the medication group I in both hematological and biochemical profile.

Hence, I conclude here to continuation of intake of soyabeen may one the natural low-cost dietary supplementation to away from the side effects of TAM.

## REFERENCES

1. İ. Gülçin (2012). Antioxidant activity of food constituents-An overview, *Archiv. Toxicol.* 86, 345-396.
2. L. Polat Köse, İ. Gülçin, A.C. Gören, J. Namiesnik, A.L. Martinez-Ayala and S. Gorinstein (2015). LCMS/MS analysis, antioxidant and anticholinergic properties of galanga (*Alpinia officinarum* Hance) rhizomes, *Ind. Crops Prod.* 74, 712-721.
3. P. Kalın, İ. Gülçin and A.C. Gören (2015). Antioxidant activity and polyphenol content of *Vaccinium macrocarpon*, *Rec. Nat. Prod.* 9, 496-502.
4. M.K, M. Korkmaz, E. Bursal, İ. Gülçin, E. Köksal and H. Tohma (2015). Determination of antioxidant properties of *Gypsophila bitlisensis*, *Int. J. Pharmacol.*, 11, 366-371.
5. H. Yılmaz, S. Çarıkçı, T. Kılıç, T. Dirmenci, T. Arabacı and A.C. Gören (2017). Screening of chemical composition, antioxidant and anticholinesterase activity of section *Brevifilamentum* of *Origanum* (L.) species, *Rec. Nat. Prod.* 11(5), 439-455.
6. Nagalakshmi, N. and Prasad M.N.V (2001) Response of glutathione cycle enzymes and glutathione metabolism to copper stress in *Scenedesmus bjugatus*. *Plant science.*, 160: 291-299 Pp.
7. Foyer, C.H. and Halliwell, B. (1976). The presence of glutathione and glutathione reductase in chloroplasts: a proposed role in ascorbic acid metabolism. *Planta* 133, 21-25 Pp.
8. Bayfield RF and Cole ER (1980) Colorimetric estimation of vitamin A with trichloroacetic acid. *Methods in Enzymology* 67, 189-203 Pp.
9. Rosenberg, H.R. (1992) *Chemistry and Physiology of Vitamins*. Inter Science Publishers Inc., New York. 452 – 3 Pp.
10. Sadasivam, S. and Manickam, A. (1996) *Biochemical Methods for Agricultural Sciences*, New Age International (P) Ltd., New Delhi.