

## Original Research Article

# A clinical study of serum lipid profile in benign breast disease in a tertiary care hospital

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### ABSTRACT

**Background:** The aim of the study was to evaluate an association of serum lipid profile in women with benign breast disease and to analyze a possible relationship between serum lipid profile and benign breast diseases with emphasis to laboratory findings.

**Methods:** Hospital based study carried out at ACS Medical College, Chennai, during the period of June 2018 to November 2018. 75 women in General Surgery ward/outpatient were included in the study. Subjects included in the study were women of age between 16 to 35 years, provided they fulfilled inclusion and exclusion criteria. History was noted, serum lipid profile was done. Results were noted and analysed.

**Results:** Out of 75 subjects, 21.3% of women with benign breast disease were having elevated serum lipid profile.

**Conclusions:** It is concluded that benign breast disease is associated with altered serum lipid profile namely hyperlipidemia. Therefore, routine screening and treatment of this condition is must among women with benign breast disease by dietary management, use of anti-hyperlipidemic drugs to achieve long lasting cure and to prevent possible future recurrences.

**Keywords:** Benign breast disease, Serum lipid levels, Triglycerides, Hyperlipidemia

### INTRODUCTION

Benign breast diseases constitute a heterogeneous group of lesions including developmental abnormalities, inflammatory lesions, epithelial and stromal proliferations. The vast majority of the lesions that occur in the breast are benign. Much concern is given to the malignant lesions of the breast because breast cancer is the most common malignancy in women in western countries, however benign lesions of the breast are far more frequent than malignant ones.<sup>1-9</sup> Benign breast disease (BBD) may present with a wide range of symptoms or may be detected as incidental microscopic findings. The incidence of benign breast lesions begins to rise during the second decade of life and peaks in the fourth and fifth decades, as opposed to malignant

diseases, for which the incidence continue to increase after menopause, although at a less rapid pace.<sup>10-14</sup> Countries with higher intake of fat, especially fat from animal products, such as meat and dairy products, have higher incidence of benign breast diseases. Many studies have found that fat intake was associated with increased risk of proliferative benign breast diseases and particularly of atypical hyperplasia.<sup>15,16</sup> Specific hypothesis were that higher total fat and saturated fat intake would be associated with increased risks of proliferative BBD but that higher intake of vegetable or mono saturated fat, vitamin, carotenoids and vitamin and E would be associated with reduced risk. Since, the dietary habits of people in our country, especially in this locality have quite changed a lot towards the western style in the last few decades the aim of my study is to

establish the relationship between hyperlipidemia or dyslipidemia and benign breast diseases.

## METHODS

The study was conducted in the department of General Surgery, ACS medical college, Chennai, India, during the period of June 2018 to November 2018. Cases were selected randomly among the admitted patients in wards and from those visiting the outpatient departments. The cases were diagnosed to be suffering from benign breast diseases both by clinical examination as well as through investigations. The 75 females of age between 16 to 35 years with benign breast diseases having either of three types namely fibroadenoma, fibroadenosis, mastalgia were selected randomly. Diagnosis of benign breast disease is done by series of clinical as well as by fine needle aspiration cytology & biopsy (incisional, excisional). After collection of 5 ml of fasting venous sample from a large peripheral vein under aseptic precautions the sample was subjected to centrifugation and serum was obtained. Serum lipid parameters such as Total serum cholesterol (T-C), high density lipoprotein (HDL), very low density lipoprotein (VLDL), low density lipoprotein (LDL), serum triglyceride (TG) were estimated in the department of biochemistry of ACS medical college and hospital, by using Microlab 300 analyser.

All statistical analysis was performed using statistical package for social science (SPSS, Version 17) for Microsoft windows. Descriptive statistics were presented as numbers and percentages. The data were expressed as mean and SD. A two sided  $p < 0.05$  was considered to be statistically significant.

## RESULTS

Out of these 75 subjects, 21.3% of women with benign breast disease lying in the age group of 16 to 35 years showed elevated serum triglyceride levels suggestive of hyperlipidemia with mean serum triglyceride levels of  $10.08 \pm 18.08$  mg/dl. These observations were tabulated in Table 1. Other parameters such as total serum cholesterol (Table 2), high density lipoprotein (Table 3), very low density lipoprotein (Table 4), low density lipoprotein (Table 5), were within normal limits in women with benign breast disease and the observations are tabulated.

**Table 1: Observed data for triglycerides.**

Serum parameters	Age group (years)	Percentage of women with benign breast disease with elevated serum triglycerides	Serum triglyceride levels in mg/dl (mean $\pm$ SD)
<b>Triglycerides (40-140 mg/dl)</b>	16-35	21.3%	10.08 $\pm$ 18.08

**Table 2: Observed data for serum cholesterol.**

Serum parameters	Age group (years)	Serum cholesterol levels in mg/dl (mean $\pm$ SD)
<b>Serum cholesterol (140-200 mg/dl)</b>	16-35	170.35 $\pm$ 16.98

**Table 3: Observed data for HDL.**

Serum parameters	Age group (years)	HDL levels in mg/dl (mean $\pm$ SD)
<b>HDL (30-70 mg/dl)</b>	16-35	52.51 $\pm$ 10.23

**Table 4: Observed data for VLDL.**

Serum parameters	Age group (years)	VLDL levels in mg/dl (mean $\pm$ SD)
<b>VLDL (25-40 mg/dl)</b>	16-35	32.11 $\pm$ 4.23

**Table 5: Observed data for LDL.**

Serum parameters	Age group (years)	LDL levels in mg/dl (mean $\pm$ SD)
<b>LDL (60-170 mg/dl)</b>	16-35	115.27 $\pm$ 27.88

## DISCUSSION

The objective of this study was to determine the serum lipid profile in benign breast disease and also to find out, if there was any possible relation between the pathogenesis of benign breast disease and serum lipid profile. The diagnosis of benign breast disease was made on the basis of history, physical examination, radiological investigation and different mode of tissue biopsy. The patients suffering from benign breast disease in preoperative state had been taken into consideration. Patients presenting with history of carcinoma breast, hypertension, and tuberculosis were excluded from the study. All the patients were subjected to the determination of the serum lipid profile like total cholesterol, HDL cholesterol, LDL cholesterol, VLDL cholesterol, and Triglyceride. The study was carried out in three different types of benign breast disease. Full attention was given to quality control. Gonenc et al had reported that total serum cholesterol and HDL cholesterol increases in patients of benign breast disease. He also reported that there was no increase in serum LDL cholesterol in patients with benign breast disease.<sup>17</sup> In the present study it was observed that the mean serum triglyceride levels was found to be significantly higher in women with benign breast disease. Khanna et al, also

reported the increase in serum triglyceride level in all patients of benign breast disease as compared to control.<sup>18</sup>

## CONCLUSION

The present clinical study on serum lipid profile in women with benign breast disease patients shows a higher serum level of triglycerides in benign breast disease patients. Serum lipid profile should be routinely evaluated in patients with benign breast disease for the improvement of symptoms by dietary management, use of anti-hyperlipidemic drugs to achieve long lasting cure and to prevent possible future recurrences.

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