FIBROADENOMA: PATIENT’S PERSPECTIVE, AWARENESS REGARDING SELF EXAMINATION AND ROLE OF DIETARY INTERVENTION

Sana Sarfaraz¹*, Wajeeha Fatima², Abeer Sarfaraz³, Ammarah Mehak²,
Saima Ramzan² and Kiran Naseem²

¹Department of Pharmacology, Faculty of Pharmacy, Jinnah University for Women, Karachi, Karachi-74600, Pakistan.
²Department of Pharmacy, Jinnah University for Women,Karachi, Karachi-74600, Pakistan.
³Resident, Department of Medicine, Liaquat National Hospital Karachi, Karachi-74600, Pakistan.

ABSTRACT
Fibro adenoma (FAD) of the breast is a benign tumor. They are thought to occur because of increased sensitivity to estrogen. The symptoms in typical case are the presence of a painless, mobile, firm lump in the breast of a woman of child-bearing years. The aim of this study is to assess the frequency of the disease in women of different ages, symptoms faced by them, awareness regarding self examination and role of dietary intake in stopping progression of disease. It is a cross sectional survey based study in which 150 patients suffering from fibroadenoma from different hospitals were questioned and their answers were recorded as open ended. From our results we concluded that Fibroadenoma is most prevalent in women of age group 20-40 years, the symptoms common are painful lumps, nipple discharge and size reduction during menstrual cycle. There was no awareness Regarding self examination of breast as well as role of dietary intake in stopping progression of disease.

KEYWORDS: Apoptosis, Estrogen, squamous metaplasia, Post Menopause and Fibro adenoma.
INTRODUCTION
One of the first obvious signs of puberty is breast development. Any variation in its normal progression often deserves attention. Fibroadenoma is a benign tumor formed of mixed fibrous and glandular tissue. Fibro adenomas develop from a lobule. The glandular tissue and ducts grow over the lobule and form a solid lump. They typically appear as rubbery, discrete, non-tender mass, and may be lobular, bilateral (10%), or multiple (10% to 15%).[1]

Juvenile also known as giant fibroadenoma is a rare pathology usually prevalent in adolescence characterized by massive and rapid enlargement of the breast.[2] Epidermal inclusion cysts may be created by squamous metaplasia of normal columnar cells within a dilated duct in the case of fibroadenoma.[3] The giant fibroadenoma is an uncommon variant (4%) of fibroadenoma characterized by rapid growth. Giant juvenile fibroadenoma may recur after complete excision.[4]

Dupont describes two histological groups of fibroadenomas, simple and complex. Complex fibroadenoma refers to fibroadenomas with foci of cysts, calcifications in epithelium and metaplasia of papillary apocrine and has a higher future risk of malignancy.[5] Outer upper quadrant of the breast is the most common location of fibroadenoma.[6] Fibroadenomas are usually not associated with malignancies in adolescence and younger adult.

About 5% to 10% of breast cancer cases are thought to be hereditary.[7] Mutation in the BRCA1 and BRCA2 genes are thought to be most common cause of hereditary fibroadenoma. In normal cells, these genes help prevent cancer by making proteins that keep the cells from growing abnormally.[8] Risk of breast cancer could be increased by increased exposure to endogenous estrogens from early onset of menarche, late onset of menopause, null parity, late age of first pregnancy, lack of breastfeeding, taking oral contraceptive pill or hormone replacement therapy.[9]

History of irregular menstruation was more prevalent in FAD. Interestingly FAD was more prevalent in single women, early marriage (<21 yrs) were considered as another possible risk factor of FAD in married women.[10] The incidence and development of FAD could be associated with the reproductive history of women, activity of ovarian hormones as well as environmental factors.History of full term pregnancy and live child birth could reduce the risk of FAD.[11]
Risk of FAD was increased in women who were obese and had gained massive weight (20-30 Kg) after 18 years.\textsuperscript{[12]} The prevalence of severe stress was significantly higher. Severe stress which is able to increase the endogenous levels of estrogen. FAD has an inverse association with increased age.\textsuperscript{[13]} Diagnosis can be done by Ultrasound, Mammography and Needle Biopsy.

Since the main defect is in apoptotic pathway which has led to abnormal proliferation of cells the practical solution would be to activate the death receptors and to reintroduce robust p53 genes to combat the cancerous cells.\textsuperscript{[14]} Studies showed that estrogen and progesterone receptors were highly active in patients having Fibroadenomas and Breast Cancer. Non-steroidal drug ormeloxifen which is an estrogen receptor modulator can shrink Fibroadenomas.\textsuperscript{[15]}

Nowadays focus is being shifted towards herbal treatment. Herbs can provide beneficial therapeutic effects, safer to use and considered cheaper therapy. Herbal Remedies are again gaining their importance in field of medicine due to their safety profile.\textsuperscript{[16]}

Nutraceuticals of plant origin have been thoroughly studied in vitro and those which are a part of our normal diet and those used for its medicinal benefits have shown commendable anti-cancerous properties. Garlic, Ginger, Soya Bean, Black Cohosh.\textsuperscript{[17, 18]} Green Tea, have shown encouraging results in promoting apoptosis of cancerous cells.\textsuperscript{[19]} Many protective effects of vitamin C and lycopene were found to have remarkable impact too.\textsuperscript{[20]}

The objective of present study was to evaluate the prevalence of fibroadenoma of breast in different age groups, common symptoms experienced by them, awareness regarding self examination of breast and role of dietary modification in stopping progression of disease.

\textbf{METHODOLOGY}

\textbf{Study Setting}

The study was carried out in various public and private sector tertiary care hospitals of Karachi.

\textbf{Study Design}

This was a descriptive cross sectional study, with the purpose of knowing about Fibroadenoma from patients point of view that is symptoms, cause, self examination awareness and dietary intervention.
Duration of Study
The duration of this study was of 4 months.

Sample Population
The sample population of the study were females of age group 15-50 years who were suffering from fibroadenoma.

Sample Size
The sample size of the study was 150 patients.

Data Collection Tool
A semi structured self made questionnaire was used for the collection of data from patients.

Data Collection Procedure
Data was collected from the participants by directly contacting with them.

Data Analysis
The data was analyzed by using statistical software SPSS version 19.0. The test which was used for the analysis of data was:
* One sample binomial test.
P-value of 0.05 (5%) or less was considered as statistically significant.

Ethical Consideration
The participation of every patient was voluntarily. All the participants had complete right to withdraw from study without any prior notice.

RESULTS
Table 1: Prevalance of fibro adenoma in different age groups.
Table 2: Pain intensity of lumps.

Table 3: Family history of fibroadenoma in patients.

Table 4: Symptom of nipple discharge.
Table 5: Dietary counselling regarding use of fruits and vegetables.

![Graph showing dietary counselling]

Table 6: Change in size during menstrual bleeding.

![Graph showing change in size]

Table 7: Awareness regarding self examination of breast.

![Graph showing awareness]

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### Binomial Test

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Observed Prop.</th>
<th>Test Prop.</th>
<th>Exact Sig. (2-tailed)</th>
</tr>
</thead>
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<tr>
<td><strong>Pain Intensity of lumps</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 Painful</td>
<td>85</td>
<td>.57</td>
<td>.50</td>
<td>.121</td>
</tr>
<tr>
<td>Group 2 Painless</td>
<td>65</td>
<td>.43</td>
<td>.50</td>
<td>.000</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>1.00</td>
<td>.50</td>
<td>.000</td>
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<tr>
<td><strong>Awareness regarding breast self examination</strong></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Group 1 yes</td>
<td>13</td>
<td>.09</td>
<td>.50</td>
<td>.000</td>
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<tr>
<td>Group 2 no</td>
<td>137</td>
<td>.91</td>
<td>.50</td>
<td>.000</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>1.00</td>
<td>.50</td>
<td>.000</td>
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<tr>
<td><strong>Dietary Counselling</strong></td>
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<td></td>
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<td>.06</td>
<td>.50</td>
<td>.000</td>
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<tr>
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<td>.94</td>
<td>.50</td>
<td>.000</td>
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<td>1.00</td>
<td>.50</td>
<td>.000</td>
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<tr>
<td><strong>Symptom of Nipple Discharge</strong></td>
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<td>Group 1 Present</td>
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<td>.25</td>
<td>.50</td>
<td>.000</td>
</tr>
<tr>
<td>Group 2 Absent</td>
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<tr>
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<td>.50</td>
<td>.000</td>
</tr>
<tr>
<td>Total</td>
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<td>1.00</td>
<td>.50</td>
<td>.000</td>
</tr>
</tbody>
</table>

A value of p< 0.05 is considered significant, p< 0.001 as more significant and p< 0.0001 as highly significant.

### DISCUSSION

Fibroadenomas are usually product of hyperplastic processes and are assumed to be aberration of normal breast development.[21] Graph 1 shows the prevalence of fibroadenoma in different age group. It was observed that it is most prevalent in age group 20-40 years and least common in age group 40-50 years. Literature studies show that fibroadenomas usually form during menarche (15-25 years) and are stimulated by hormones estrogen and progesterone and by lactation during pregnancy.[21] Graph 2 and 4 shows about symptoms of fibroadenoma i.e painful lumps and nipple discharge. Graph 2 shows that majority of patients complained that lumps formed were painful. Literature studies have shown that normally lumps are painless but can be painful in some individuals. Graph 4 shows another symptom thought to be associated with fibroadenoma i.e nipple discharge. However majority of patients did not suffer this symptom. Normally it occurs when benign tumor is progressing towards metaplasia.

Graph 3 shows majority of patients of fibroadenoma had no family history, so cause is not necessary defect in genes. It can occur due to hormonal changes, stress and environmental factors.[22] Graph 5 shows that dietary counselling was not done to patients suffering from fibroadenoma. Many fruits and vegetables possess anticancerous activity and should be incorporated in diet of patient suffering from fibroadenoma to stop progression into...
cancerous tumor. Pomegranate contains phytochemicals that can suppress aromatase, an enzyme which converts androgen into estrogen and which is associated with breast cancer.\textsuperscript{[23]} Banana consumption was associated with lower risk of breast cancer. Cruciferous vegetables are rich in nutrients, including several carotenoids (beta-carotene, lutein, xanthin); vitamins C, E, and K; folate; and minerals.\textsuperscript{[24]} Cruciferous vegetable juice, containing a variety of ITCs (Isothiocyanates), has been shown to induce apoptosis, or programmed cell death, in breast cancer cells.\textsuperscript{[25,26]} Indoles and isothiocyanates have been found to inhibit the development of cancer in several organs in rats and mice.\textsuperscript{[27,28]} Cruciferous family includes: Green vegetables: kale, cabbage and broccoli and non-green vegetables: cauliflower and turnips etc.\textsuperscript{[29]}

Graph 6 shows the effect of menstrual cycle on size of lump. Majority of patients observed that the lump size got reduced during menstrual cycle. This is because both levels of estrogen and progesterone are lowered during bleeding phase. Graph 7 shows awareness of patients regarding self examination of breast. It was shocking since most of the patients were not aware of it.

By applying binomial test we found that majority of our results were highly significant (P<0.0001). Awareness regarding fibroadenoma, dietary counselling was highly significantly less. The symptom of nipple discharge was also highly significantly low. Whereas cause of fibroadenoma being genetic was also highly significantly low.

**CONCLUSION**

From above study we came to conclusion that awareness needs to be spread regarding breast self examination among female population of Karachi as well as dietary counselling should be done for patients suffering from fibroadenoma of breast.

**REFERENCES**


