

# Chronic Recurrent Mastitis: Bangladesh Perspective-10 Years Study in a Tertiary Care Hospital



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**ABSTRACT: Introduction:** Granulomatous mastitis is a very significant chronic breast infection poses a lot of challenge for diagnosis and management. Treatment options are ranging from various medical management to different surgical procedure. However, none of the treatment strategy is considered as standard so far. In this study, we showed some investigations and management options for chronic breast infections. **Materials and methods:** It is a randomized clinical trial done in BIRDEM (Bangladesh Institute of Research and Rehabilitation of Diabetic Endocrine and Metabolic Disorders) Hospital and Ibrahim Medical College from July 2013 to June 2020. We enrolled patients on basis of histopathological report of chronic breast infected patients. Gene X-pert for tuberculosis, MT (Montoux Test) and bacterial culture was done in all enrolled patients. **Results:** A total of 165 female patients were enrolled in this study. Patient's age was between 13-68 years with mean age 31.5 years. Maximum 44.85% (76) cases were found in 20-30 years age group. Most common clinical presentation non healing discharging ulcer 51.52% (85) followed by mass with abscess 26.02% (43) and mass with sinus 22.42% (37). Diagnosis was confirmed by histopathologically. Idiopathic Granulomatous Mastitis was found in 58.79% (97) patients and Tubercular Mastitis in 41.21% (68) patients. Tubercular Mastitis was treated by standard Anti tubercular drugs in 23.72% (37) patients and by additional oral methyl prednisolone in 18.79% (31). 21.82% (36) Idiopathic Granulomatous Mastitis was treated with oral methyl prednisolone and sensitive antibiotic, whereas 36.97% (61) patients needed additional oral methotrexate. Different type of surgical procedures needed in both infections to achieve the goal. **Conclusion:** We want to share our experience regarding diagnosis and management of different chronic breast infections and final outcome of management

**KEYWORDS:** Chronic breast infection, Tubercular mastitis, Idiopathic Granulomatous Mastitis

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## Introduction

Incidence of chronic breast infection is rising now a day. It is now a challenge for both the treating surgeons and to morbidity of patients<sup>1</sup>. Granulomatous mastitis (Tubercular and non-Tubercular) is not uncommon now; it is a very significant chronic condition of breast and poses a lot of challenges for diagnosis and treatment<sup>2</sup>. Mammary tuberculosis is now rising because of very high incidence pulmonary and different forms of extra pulmonary tuberculosis in the sub-continent<sup>3, 4</sup>. This disease is not diagnosed easily because of its physical similarity to carcinoma, bacterial abscess and other granulomatous disease (eg. Idiopathic Granulomatous Mastitis [IGM]). Tubercular mastitis is paucibacillary, and routine diagnostic tests do not have the same diagnostic utility as they do in pulmonary tuberculosis. And it is not uncommon to be misdiagnosed either as abscess, carcinoma or IGM<sup>5, 6</sup>. On the other hand, IGM, which is not uncommon, is a very important chronic

condition of breast, first introduced in 1972 by Kessler and Wollach<sup>7</sup>. IGM is considered to be a non-neoplastic chronic inflammatory lesion of breast that mimics carcinoma both clinically and radiologically<sup>8,9</sup>. It affects mostly parous woman of child bearing age (reported age range of 11-80 years)<sup>10</sup>. The etiology of IGM remains unclear. Clinical Presentations may range from erythema of skin, induration, sinuses, mass with nipple retraction-- which makes it difficult to differentiate clinically from tuberculosis, IGM and cancer<sup>11,12</sup>. There is still a problem to diagnosis and treatment of various chronic breast diseases. Treatment options range from medical management (antibiotic/anti-tubercular therapy, steroid therapy, immunosuppressive) to various surgical options (abscess drainage, limited or wide excision). However, none of the treatment strategy is considered as standardized treatment so far<sup>13</sup>.

The objective of this study was to share our experience regarding diagnosis and management of different chronic breast infections and final outcome of management.

## Materials and Methods

It is a randomized clinical trial done in BIRDEM (Bangladesh Institute of Research and Rehabilitation of Diabetic Endocrine and Metabolic Disorders) Hospital and Ibrahim Medical College from July 2013 to June 2020. About 1136 patients were admitted in surgery department for treatment of breast problem in this hospital. Out of those 165 cases were enrolled who were suffering from lump in the breast or discharging sinus/sinuses, lump with abscess, non-healing discharging ulcer more than 3 months after lumpectomy in outside hospital/clinic, after histopathology (Tru-cut/core biopsy from lump or, tissue from sinus tract or abscess wall or ulcer margin). Gene X-pert for tuberculosis, MT (Montoux Test) and bacterial culture was done in all enrolled patients.

Patients having tuberculosis were treated with standard anti-tubercular therapy with or without steroid (oral methylprednisolone). And other patients having IGM (Idiopathic Granulomatous Mastitis) were treated with steroid (oral methyl prednisolone) with or without oral MTX (Methotrexate). Some patients needed surgical removal of the lump, excision of sinus tract or drainage of abscess.

Each patient was followed up for 2 years. Informed written consent was taken from all patients. This study was approved by ethical committee of BIRDEM Hospital and Ibrahim Medical College, Dhaka. Analysis was performed using a computer based statistical program, SPSS (Statistical Package for Social Sciences) version 16. Quantitative data were expressed as means  $\pm$  SD 95% confidence interval was calculated and p value of  $<0.05$  were considered as significant.

## Result

A total of 165 cases of chronic breast infection cases were enrolled in this study. All the cases were female with age ranging between 13-68 years and an average age of 31.5 years. Out of them, 85.45% were married and 14.55% were unmarried, maximum 44.85% patients were found in 20-30 age groups (TABLE-1). Most common clinical presentation was non healing discharging ulcer in 51.52 % ( 85) cases followed by mass with abscess in 26.02 % ( 43) cases, mass with sinuses in 22.42 % ( 37) cases. (TABLE-2).

Diagnosis was confirmed by histopathologically either from Tru-cut/ Core biopsy sample or tissue from sinuses tract/ abscess wall. Of all cases, IGM was found in 58.79 % ( 97) cases and tubercular mastitis was found in 41.21 % ( 68). Gene Xpert for TB was positive in 38.78 % ( 64) cases and MT positive in 35.15 % ( 58) cases. Pulmonary tuberculosis were 18.79 % ( 31) cases those who had tubercular mastitis.

Treatment was initiated base on histopathological and bacterial cultured result. About 23.72%(37) patients needed only stander anti tubercular of four drugs regime of 9 months and in some cases up to 1 years but 18.79%(31) cases oral methyl prednisolone needed with anti-tubercular therapy. Whereas 21.82 % ( 36) of IGM received oral methyl prednisolone and 36.97 % ( 61) cases of IGM needed MTX with oral methylprednisolone. Antibiotic was given according to bacterial cultural sensitivity. Oral methylprednisolone was started as 40mg daily and the doses tapered after resolution of the sign(s)/symptom(s). Steroid was not continued for more than 3 months. MTX was used initially 25mg/weekly and then given in reduced doses after response; maximum 6 months.

Out of medical treatment, 41.21 % ( 68) cases needed surgical maneuver—in terms of lumpectomy, drainage of abscess, excision of sinuses tract. Only one case did not respond to ant tubercular therapy and repeated surgical attempted was failed to cure the patient and simple mastectomy was required.

**Table 1.** Age distribution of patients

Age (in years)	Numbers	%
<20	19	11.52
20-30	74	44.85
30-40	55	33.33
40-50	12	7.27
50-60	4	2.42
>60	1	0.61

**Table 2.** Clinical Presentation, Investigations and Treatment Strategies

	N	%
A) Clinical Presentation		
1. Mass with sinus/sinuses	37	22.42
2. Mass with abscess	43	26.02
3. Non-Healing discharging ulcer after lumpectomy (>3months)	85	51.52

B) Diagnosis		
1. Histopathology		
-IGM	97	58.79
-TB mastitis	68	41.21
2. Gene X-pert	64	38.79
3. MT Test	58	35.15
C) Treatment Strategy		
1.		
a) TB → oral anti-TB	37	23.72
b) TB → anti-TB + steroid	31	18.79
2.		
a) IGM → antibiotic + steroid	36	21.82
b) IGM → antibiotic + steroid + MTX	61	36.97
3.		
Surgery (Lumpectomy/abscess drainage/excision of sinus)	68	41.21
a) IGM		
b) TB		
	47	28.49
	21	12.73

## Discussion

Chronic breast infection is a great challenge both in terms of diagnosis and management. In developing countries like Bangladesh, India, Pakistan tuberculosis is common in the picture of granulomatous inflammatory changes<sup>14</sup>. Breast TB can either be primary or secondary. In primary breast TB, breast lesion is the only manifestation of TB. Where there is a demonstrable focus of TB elsewhere it is secondary<sup>15, 16</sup>. Primary breast TB is rare, most cases are considered secondary even if no primary focus can be found<sup>15</sup>.

Breast TB usually affected the younger woman of child bearing age between 20-40 years<sup>17, 18</sup> with mean age 33.71 years in the study done by Khanna et al. In our study, maximum patients were found in 20-30 age groups with mean age 31.5 years.

Most common histopathological variety in our study was idiopathic chronic granulomatous mastitis (IGM) about 58.79% (97). Clinical presentation is variable ranging from firm to hard mass, acute on chronic abscess formation, non-healing sinuses and in certain cases, mass may mimic carcinoma breast<sup>19</sup>. In our study, the commonest presentation was lump which is followed by abscess, sinuses and non-healing ulcer. Deepa H et al<sup>20</sup> showed in their study about 64.3% breast abscess and lump mimicking carcinoma breast in 21.4% cases. Treatment is often difficult and challenging chronic granulomatous breast infection. Amongst the chronic breast infection IGM is considered as a diagnosis of exclusion and difficult to treat as the treatment options are very limited and not specified. However, treatment options include medical management with antibiotic/ anti tubercular therapy, steroid

with or without immunosuppressive agents as well as surgical options as surgical excision and abscess drainage. Pandey et al and Salehi et al mentioned that corticosteroid causes GM resolution with a small chance of recurrence<sup>21, 22</sup>. In our study, majority patients responded anti-tubercular/ antibiotic with or without steroid (methylprednisolone therapy). In case of IGM, MTX also needed to reach the ultimate goal. Another study in New York, medical management is most effective with prednisolone and MTX<sup>23</sup>. Tubercular mastitis possesses significant challenges in diagnosis and is difficult to differentiate from IGM. In our study, recurrence occurred in 3 cases (1 tubercular mastitis and 2 IGM) after 18 months which needed 3 extra months of steroid therapy. One case of tubercular mastitis not responded to anti-tubercular (with steroid therapy), needed mastectomy. Literature has described treatment with antibiotics, steroid, abscess drainage, wide excision and even mastectomy in few cases<sup>24, 25</sup>.

## Conclusion

In this study we have found that chronic breast infections (tubercular mastitis, IGM) are a challenging condition to diagnose and treat, as there are no established standardized treatment options. We share our small experience to encourage further studies.

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