

**BREAST CONSERVATIVE SURGERY VERSUS MODIFIED RADICAL MASTECTOMY
IN EARLY BREAST CANCERS – AN OBSERVATIONAL STUDY**Naseer Ahmad Awan², Yasir Lone², Mir Mujtaba Ahmad*¹, Irfan Nazir² and Hilal Wani²¹Department of Surgery, HIMSR, New Dehli.²Department of Surgery, GMC, Srinagar.***Corresponding Author: Mir Mujtaba Ahmad**

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ABSTRACT

Background: The improvement in the treatment of breast cancer is due to early diagnosis, better understanding of the natural history of this disease and therapeutic improvements over the years. There is a gradual shift away from radical surgery advocated by Halsted to the breast conservative surgery during the last few decades all over the world mainly influenced by the results of several large trials of lesser surgical procedures. The aim of the study is to compare the complications, duration of hospital stay, satisfaction of the patients, recurrence and survival of patients undergoing breast conservative surgery and modified radical mastectomy in early breast cancer. **Aim of the study:** To compare Breast Conservation Surgery and Modified Radical Mastectomy in terms of Hospital stay, Post operative complications, Quality of Life. Patient satisfaction. **Methods:** This was an observational study of patients who presented with early breast cancer to the Department of General Surgery, Govt. Medical College Hospital, Srinagar, between November 2014 and October 2016. Inclusion criteria were patients with early breast cancer, clinical stage I and II. All the patients were watched for different variables and were followed up. **Results:** Majority of patients had ductal carcinoma on histological evaluation. There was shorter hospital stay in BCS as compared to MRM group which was statistically significant. Most of our patients were having stage IIa disease. The rate of local recurrence and complications in either group didn't have any significant difference. However, there was definitely results favouring better patient satisfaction and quality of life in BCS group as compared to MRM group. **Conclusion:** BCS in eligible patients is as effective as MRM with respect to local tumor control. Duration of hospital stay is less for the breast conservative surgery. There is significantly better mental satisfaction for the patients who underwent conservative surgery.

KEYWORDS: Breast Conservative Surgery, Modified Radical Mastectomy, Local Recurrence, Metastasis, Patient Satisfaction.

INTRODUCTION

Breast conserving surgery (BCS) was introduced in the early 1980s as an alternative, less invasive surgical approach for the treatment of breast cancer. In 1990, the National Institutes of Health (NIH) released a consensus statement recommending the use of breast-conserving surgery (BCS) with adjuvant radiotherapy instead of mastectomy for the treatment of early-stage (stage I or II) breast cancer, whenever possible.^[1] For women diagnosed with early-stage breast cancer, survival with breast-conserving therapy (BCT) is comparable to that achieved with mastectomy following initial treatment,^[2] and BCT may afford better body image and sexual function.^[3] BCT is becoming a widely used therapy for breast cancer, as seven prospectively randomized studies involving thousands of patients with follow-up periods of more than 2 decades have demonstrated that local tumor control and disease-free survival (DFS) are comparable to that with radical mastectomy.^[4-7] This stimulated us to

undertake a study at our centre for it to be an eye opener for surgeons and patients of our state and beyond, about better surgical option for female patients diagnosed with early breast cancer.

AIMS AND OBJECTIVES

The purpose of this prospective observational study was to compare Breast Conservation Surgery and Modified Radical Mastectomy in terms of following parameters:

1. Hospital stay (in days).
2. Post operative complications

Early, Late and local recurrences.

3. Quality of Life.
4. Patient satisfaction.

MATERIAL AND METHODS

The study was conducted at SMHS hospital of Govt. Medical College, Srinagar, Jammu and Kashmir in the department of surgery. Study was done from November 2014 to October 2016 (2 years) on 40 patients prospectively. 20 patients underwent Modified Radical Mastectomy and 20 patients underwent Breast Conservation Surgery. And both groups were observed for their outcomes in perioperative period and on follow up. All patients were subjected to clinical examination and underwent routine baseline investigations. Tissue diagnosis (FNAC/Tru-cut biopsy) and radiological evaluation using USG / Mammography was done in cases as indicated and recommended. USG abdomen was done in all cases to exclude metastasis. Once diagnosis was established and staging completed as per TNM (AJCC 7th ed.). Patients were explained both the procedures in detail in language they understood and plan for type of surgery was finalised.

Inclusion criterion

Age of patient: 15 to 70 years of age.

Stage of disease: Stage I or II early breast cancer.

After patient were subjected to procedure in either groups as per standard technique, specimen was sent for histopathology and staged pathologically. All patients after being discharged were followed up weekly for two weeks then two weekly (every 15 days) for two months, then monthly for 2 to 3 months and then 2 monthly for next 6 months.

Patients in both groups were compared for

1. Hospital stay in days.
2. Post-operative Complications including early complications (seroma, wound infection and bleeding) and late complications (lymphedema, post mastectomy pain, paresthesias, muscle weakness).
3. Quality of life: Quality of life was assessed with the functional assessment of chronic illness therapy-breast (FACT-B) version 4 Questionnaire. This instrument has both a generic part (FACT-G) and a breast cancer specific module (BSS). This

questionnaire has good validity and reliability properties.

4. Patient satisfaction: Patient satisfaction with the primary surgical treatment was investigated by posing six additional questions that had already been formulated and used in previous similar studies.

Statistical software SPSS (Version 20.0) was used to carry out the statistical analysis of data. Data was analysed by Student's independent t-test and Mann Whitney U-test were employed for parametric data. Chi-square test or Fisher's exact test, whichever appropriate was applied for non-parametric data. P-value < 0.05 was considered statistically significant.

RESULTS

A total of 40 patients participated in the study and 20 patients underwent BCS and other 20 were subjected to MRM. Following observations were made.

The mean age in MRM group was 47.8 with standard deviation of 12.07. The mean age in Breast Conservative Surgery group was 46.3 with standard deviation of 10.30. The difference was statistically insignificant (p=0.675).

Out of 20 patients in MRM group 18 had Ductal Cell Carcinoma, one Lobular Cell Carcinoma and one Medullary Cell Carcinoma. In BCS group 19 of 20 patients had Ductal Cell Carcinoma and one had Lobular Cell Carcinoma. The difference was statistically insignificant (p.value=0.598).

In our study 10 patients (50%) in MRM group had stage IIb disease, 8 patients had IIa disease and 2 patients had Ia disease. In BCS group, 3 patients had stage IIb disease, 12 patients had IIa disease and 5 patients had Ia disease. The difference was statistically insignificant (p.value= 0.054).

The mean hospital stay in our study in MRM group was 6.7 days with S.D. of 1.92 and in BCS group was 5.1 days with S.D. of 1.39. The results were statistically significant (p.value=0.004).

Comparison based on hospital stay among two groups					
Hospital Stay	Group MRM [n=20]		Group BCS [n=20]		P-value
	No.	%age	No.	%age	
< 5 Days	2	10	8	40	0.004*
5-7 Days	12	60	11	55	
8-10 Days	6	30	1	5	
Mean±SD	6.7±1.92		5.1±1.39		

In our study in MRM group, Bleeding was observed in one patient (5%) and Seroma in 5 patients (25%). Wound infection was not seen in any of the patients in MRM group. In BCS group Bleeding was seen in 2 patients

(10%), Seroma in 3 patients (15%) and wound infection in single patients. When compared statistically the differences were not significant (pvalue>0.05).

Comparison between two groups based on early postoperative complications					
Early Postoperative Complications	Group MRM [n=20]		Group BCS [n=20]		P-value
	No.	%age	No.	%age	
Bleeding	1	5	2	10	1.000
Seroma	5	25	3	15	0.693
Wound Infection	0	0	1	5	1.000

In our study in MRM group lymphedema was seen in 6 patients (30%), postmastectomy pain was observed in 4 patients (20%), paresthesia was observed in 5 patients (25%) and muscle weakness in 5 patients (25%). In BCS group lymphedema was seen in 4

patients (20%), postmastectomy pain was observed in 3 patients (15%), paresthesias were observed in 2 patients (10%) and muscle weakness in 1 patient (5%). When compared statistically the differences were not significant ($p > 0.05$).

Comparison between two groups based on late postoperative complications					
Late Postoperative Complications	Group MRM [n=20]		Group BCS [n=20]		P-value
	No.	%age	No.	%age	
Lymphedema	6	30	4	20	0.715
Postmastectomy Pain	4	20	3	15	0.677
Paresthesia	5	25	2	10	0.405
Muscle Weakness	5	25	1	5	0.184

Local recurrence was seen equally in both groups, one patient (5%) from BCS group had local recurrence and

one patient (5%) from MRM group had local recurrence. The results were statistically insignificant ($p > 0.05$).

Comparison between two groups based on local recurrence					
Local Recurrence	Group MRM [n=20]		Group BCS [n=20]		P-value
	No.	%age	No.	%age	
Present	1	5	1	5	1.000
Absent	19	95	19	95	
Total	20	100	20	100	

In our study the mean for Physical well being (PWE) domain, in MRM group was 18.95 ± 3.72 and in BCS group was 18.85 ± 4.04 and was statically insignificant ($p > 0.05$). Mean for other domains including SWB (17.95 ± 1.88 for MRM and 17.60 ± 2.28 for BCS group, $p > 0.05$); EWB (14.4 ± 2.68 for MRM and 13.65 ± 3.05 for BCS, $p > 0.05$); FWB

(17.30 ± 2.49 for MRM and 17.70 ± 2.34 for BCS, $p > 0.05$); and Special concerns domain (19.85 ± 1.76 for MRM and 21.25 ± 3.67 for BCS group, $p > 0.05$) were also statistically insignificant ($p > 0.05$). Total score was 87.65 ± 6.81 in MRM group and 89.05 ± 7.25 in BCS group. The difference was statistically insignificant ($p > 0.05$).

Quality of life core questionnaire scores with treatment in the MRM and BCS groups					
Domain	Group MRM [n=20]		Group BCS [n=20]		P-value
	Mean	SD	Mean	SD	
Physical	18.95	3.72	18.85	4.04	0.936
Social	17.95	1.88	17.60	2.28	0.599
Emotional	14.40	2.68	13.65	3.05	0.414
Functional	17.30	2.49	17.70	2.34	0.604
Specific Concerns	19.85	1.76	21.25	3.67	0.132
Total Score	87.65	6.81	89.05	7.25	0.533

In our study median for Aesthetic outcome was 66.7 in MRM group with I.Q. of 37.5 to 66.7 and in BCS group median was 66.7 with I.Q. from 50.1 to 66.7. The result was not statistically significant ($p > 0.05$). Median for change in physical appearance domain was 66.6 in MRM group with I.Q. of 33.3 to 66.6, 66.6 in BCS group with I.Q. of 33.3-66.6. This was statistically insignificant ($p > 0.05$). In the third domain, Disturbed by appearance, the median obtained in both group was 100 with I.Q., 66.6-100 in MRM group and 41.6 to 100 in

BCS group. The difference was statistically insignificant ($p > 0.05$). Median for Impairment to daily life domain was 33.3 in MRM group with I.Q. of 33.3 to 66.6, 33.3 in BCS group with I.Q. of 33.3-91.7. The difference was statistically insignificant ($p > 0.05$). In Regret domain, median in MRM group was 100 with I.O. from 66.6 to 100 and in BCS group was 100 with I.Q. of 66.7 to 100. This was statistically insignificant ($p > 0.05$). In our study median for Fear of recurrence was 66.6 in MRM group with I.Q. of 33.3 to

66.6 and in BCS group median was 33.3 with I.Q. from 33.3 to 66.6. The result was not statistically significant (p.value-0.096).

Comparison between the median scores of patient satisfaction with treatment in the MRM and BCS groups					
Domain	Group MRM [n=20]		Group BCS [n=20]		P-value
	Median	I.Q.	Median	I.Q.	
Aesthetic outcome	66.7	37.5-66.7	66.7	50.1-66.7	0.738
Change in physical appearance	66.6	33.3-66.6	66.6	33.3-66.6	0.799
Disturbed by appearance	100.0	66.6-100	100.0	41.6-100	0.883
Impairment to daily life	33.3	33.3-66.6	33.3	33.3-91.7	0.495
Regret	100.0	66.6-100	100.0	66.7-100	0.461
Fear of recurrence	66.6	33.3-66.6	33.3	33.3-66.6	0.096

DISCUSSION

Several previous retrospective and prospective randomized trials have shown that BCS followed by adjuvant radiotherapy is equivalent to mastectomy in terms of survival for patients with early stage breast cancer, despite of a higher rate of LR.^[2,8-10] Consequently, BCS has been used routinely in clinical practice for more than 20 years in many Western countries. The comparatively low take-up rate of BCT in Kashmir may relate to factors such as social and economic circumstances, although concern over the increased risk of relapse and metastasis seems to have been the primary consideration for both breast cancer patients and their doctors.

The ultimate aim of this study was to help patients and physicians in Kashmir decide whether BCS or MRM is the better option in any given case. We found that BCS followed by radiotherapy provides comparable results to those of MRM in terms of local control. This is consistent with the findings of earlier, randomized trials.^[1,2]

According to AJCC staging most of our patients were having stage IIa disease (40% in MRM group and 60% in BCS group) and IIb (50% in MRM group and 15% in BCS group). Stage I disease was present in 10% of MRM group and 25% in BCS group. However in a study by Monica Marrow *et al.*,^[11] stage I carcinoma (57.2%) was more common than stage II tumours (42.8%). This difference may be related to late detection of breast cancers in our set up due to late reporting of breast lump patients to us in our hospital.

The number of days spent in hospital after surgery for breast cancer has continued to decline for several decades. The mean hospital stay in our study in MRM group was 6.7 days with S.D. of 1.92 and in BCS group was 5.1 days with S.D. of 1.39. The results were statistically significant. The results were comparable with study done by Amy Downing *et al.*,^[12] in their study women undergoing BCS had 33% shorter hospital stay than women undergoing MRM.

The early post-operative complications observed were seroma; 25% in MRM and 15% in BCS group; bleeding

(5% in MRM group and 10% in BCS group) and wound infection, 5% in BCS and 0% in MRM group. The observations were comparable with the results achieved by T. Tasmuth. *et al.*^[13]

We observed post mastectomy pain in 20% of patients in MRM group and 15% of patients in BCS group. This was statistically insignificant. Results were comparable with T. Tasmuth. *et al.*^[13]

In our study we found Post-treatment oedema in the arm was significantly more common in the group treated with MRM (30%) than after conservative surgery (20%). Neurological symptoms were also more in MRM group paresthesias were found in 25% of patients of MRM group and 10% in BCS group and muscle weakness, 25% in MRM group and 5% in BCS group. This was comparable with the results by T. Tasmuth *et al.*^[13]

Local recurrence was seen equally in both groups, one patient (5%) from BCS group had local recurrence and one patient (5%) from MRM group had local recurrence. Results were comparable with study by Joan A Jacobson *et al.*^[14]

There was no significant difference between two groups as far as each domain of quality of life is concerned. Similar findings were seen by Renata Freita- Silva *et al.*^[15] who compared quality of life between BCS and MRM using SF 36 scale. They also found no difference in quality of life between the two surgical groups (BCS and MRM). Some other previous studies are also in agreement with the present results.

The patients of the present study declared themselves satisfied with the aesthetic results of their surgery, and no difference was found between the groups in this respect. Patient satisfaction was determined with the help of questionnaire as was used in a study by Renata Freitas-Silva *et al.*^[15] Using six questions about satisfaction with breast surgery.

CONCLUSION

Our matched observational study indicates that BCT performed for eligible patients is as effective as MRM with respect to local tumour control, and quality of life.

BCT may be a superior treatment option for most primary breast cancer patients with respect to postoperative complications and patient satisfaction. The small sample size and short follow-up period in our study limits the comparison of BCT and MRM, and we hope that this might be addressed by our future studies with more number of patients and extended follow-up period.

CONFLICT OF INTEREST

None.

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