

# Comparison of Recurrence Rate of Breast Carcinoma between Modified Radical Mastectomy and Breast Conservative Surgery in Patients of Breast Cancer

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## ABSTRACT

**Objective:** To compare the recurrence rate of breast carcinoma between modified radical mastectomy and breast conservative surgery in patients of breast cancer.

**Material and methods:** This randomized controlled was conducted at Department of Surgery, Akhtar Saeed Medical and Dental College Lahore from September 2020 to June 2021. Total 70 females with breast cancer from last 3 years (any stage), age between 30-60 years with ASA grade I, II and III were selected. In group A MRM was performed while in group B, conservative surgery was performed. Recurrence of breast cancer between the both groups was compared.

**Results:** Mean age of patients was  $44.47 \pm 9.41$  years with age range 30-60 years. Mean age of patients of study group A and B was  $43.57 \pm 9.89$  years and  $45.37 \pm 8.95$  years respectively. In study group A (MRM group), recurrence of breast cancer was found in 6 (17.14%) patients while in study group B (Conservative surgery group), recurrence of breast cancer was noted in 15 (42.86%) patients. Difference of recurrence of breast cancer between the both groups was significant with p value 0.019.

**Conclusion:** Findings of this study showed higher frequency of recurrence of breast cancer in cases managed with conservative surgery as compared to MRM. Most of the cases belonged to 3<sup>rd</sup> decade of life. Among non-obese cases, significant difference of recurrence was seen. Most of the cancer cases were multiparas but difference of recurrence was not significant. Higher number of married cases were reported with breast cancer and difference between conservative surgery group and MRM group was significant.

**Keywords:** Breast cancer, recurrence, MRM, conservative surgery

## INTRODUCTION

In 2018, almost 1 in every 4 women having cancer were diagnosed to have breast cancer as 2.4 million breast cancer cases are predicted by demographic changes.<sup>1</sup> West has high rate of breast cancer as compared to Asia but on a worldwide basis, Asia is growing rapidly in cases of breast cancer.<sup>2</sup> This may be the result of establishments taking initiative to register breast cancer cases as breast cancer risk is faced by Pakistan. Where 1 out of 9 women have a permanent chance of being diagnosed with breast cancer.<sup>3</sup> Pakistan has the highest age-standardized occurrence rate of breast cancer as compared to other Asian countries.<sup>4</sup>

First the histopathological variety of the tumour, resection margin (whether affected or not) and lesion size are evaluated than the breast cancer treatment is initiated.<sup>5</sup> According to the guidelines established by the National Committee (Consensus Document for Control of Breast Cancer) for Control of Breast Cancer, different types of surgery can be performed for different types of breast cancer. The conservative ways include the removal of the tumor and lymph nodes or axillary lymph nodes and the non-conservative includes partial or total mastectomy (total removal of the breast).<sup>6</sup>

There is scarcity of data in local literature regarding comparison of recurrence rate of breast carcinoma between MRM and breast conservative surgery in patients of breast cancer. Findings of this randomized controlled trial may help us choosing best surgical management of breast cancer patients with less recurrence rate.

## MATERIAL AND METHODS

This randomized controlled was conducted at Department of Surgery, Akhtar Saeed Medical and Dental College Lahore from September 2020 to June 2021. Total 70 females with breast cancer from last 3 years (any stage), age between 30-60 years with ASA grade I, II and III were selected. Patients with history of mastectomy or conservative surgery (on history), patients with history of uncontrolled diabetes mellitus (HbA1c >8%) and patients with history of uncontrolled hypertension (blood pressure

>170/110mmHg) were excluded. Ethical review committee was given approval for this study.

Randomly two groups A and B were created. Group A managed with MRM while group B managed with conservative surgery. Weight was taken on digital weighing machine and height was measured with measuring tape and then BMI was calculated. Parity and marital status was also be noted on the pre-designed proforma. After 6 months, cases were re-examined for breast cancer. Tissue sample of suspected cases was send to laboratory for histopathological analysis. Findings were noted on pre-designed perform in term of recurrence Yes/No.

Analysis of data was done by using SPSS version 20. Age of the cases was presented as Mean and SD. Obesity (obese/non-obese), marital status (married or un-married), parity (primary or multipara) and recurrence (Yes/No) was presented as frequency and percentages. Comparison of frequency of recurrence between the both groups was done by applying Fischer's exact test or chi-square test.

Stratification was done for age, obesity, parity, marital status to detect effect of these on recurrence. Post stratification chi-square test or Fischer's exact test was applied. P. value  $\leq 0.05$  was considered as significance.

## RESULTS

Mean age of patients was  $44.47 \pm 9.41$  years with age range 30-60 years. Mean age of patients of study group A and B was  $43.57 \pm 9.89$  years and  $45.37 \pm 8.95$  years respectively.

In study group A (MRM group), recurrence of breast cancer was found in 6 (17.14%) patients while in study group B (Conservative surgery group), recurrence of breast cancer was noted in 15 (42.86%) patients. Difference of recurrence of breast cancer between the both groups was significant with p value 0.019. (Table 1)

Total 3 age groups (30-40 years, 41-50 years and 51-60 years) were created. In age group 30-40 years, breast cancer recurrence was seen in 3 (20%) patients of study group A while in 4 (50%) patients of study group B. Insignificant (P = 0.182) difference was noted. In 41-50 years age group, recurrence was

noted in 2 (18.18%) patients and 6 (33.33%) patients of study group A and B and difference of recurrence was not significant (P = 0.671). In age group 51-60 years, only 1 (11.11%) patient of study group A found with recurrence of breast cancer while 5 (55.56%) patients of study group B found with recurrence of breast cancer. Difference of recurrence of breast cancer between the groups was not significant (P = 0.131). (Table 2)

Among 2 (22.22%) obese patients of study group A and 3 (23.08%) obese patients of study group B recurrence of breast cancer was noted and difference was not significant (P = 1.00). In non-obese group, recurrence was noted in 4 (15.38%) patients of study group A while in 12 (54.55%) patients of study group B. Statistically significant (P = 0.006) difference of recurrence of breast cancer was observed. (Table 3)

Total 2 (25%) and 6 (60%) primiparas of study group A and B found with recurrence of breast cancer but difference was insignificant (P = 0.188). In multipara group, recurrence was found in 4 (14.81%) patients and 9 (36%) patients of study group A and B respectively. Insignificant (P = 0.112) difference was noted. (Table 4)

Recurrence was found in 5 (16.67%) married women of study group A and 12 (42.86%) married women of study group B and difference of recurrence of breast cancer was significant (P = 0.043). Among un-married women, recurrence was noted in 1 (20%) patient and 3 (42.86%) patients respectively in study group A and B and difference was insignificant (P 0.576). (Table 5)

Table 1: Comparison of recurrence of breast cancer between the both groups

Group	Recurrence of breast cancer		Total	P value
	Yes (%)	No (%)		
A (MRM)	6 (17.14%)	29 (82.86%)	35	0.019
B (Conservative surgery)	15 (42.86%)	20 (57.14%)	35	

Table 2: Comparison of recurrence of breast cancer between the both groups for age

Group	Recurrences of breast cancer		Total
	Yes	No	
Age group 30-40 year (P = 0.182)			
A	3 (20%)	12 (80%)	15
B	4 (50%)	4 (50%)	8
Age group 41-50 years (P = 0.671)			
A	2 (18.18%)	9 (81.82%)	11
B	6 (33.33%)	12 (66.67%)	18
Age group 51-60 years (P = 0.131)			
A	1 (11.11%)	8 (88.89%)	9
B	5 (55.56%)	4 (44.44%)	9

Table 3: Comparison of recurrence of breast cancer between the both groups for obesity

Group	Recurrences of breast cancer		Total
	Yes	No	
Obese (P = 1.000)			
A	2 (22.22%)	7 (77.78%)	9
B	3 (23.08%)	10 (76.92%)	13
Non-obese (P = 0.006)			
A	4 (15.38%)	22 (84.62%)	26
B	12 (54.55%)	10 (45.45%)	22

Table 4: Comparison of recurrence of breast cancer between the both groups for parity

Group	Recurrences of breast cancer		Total
	Yes	No	
Primipara (P = 0.188)			
A	2 (25%)	6 (75%)	8
B	6 (60%)	4 (40%)	10
Multipara (P = 0.112)			
A	4 (14.81%)	23 (85.19%)	27
B	9 (36%)	16 (64%)	25

Table 5: Comparison of recurrence of breast cancer between the both groups for marital status

Group	Recurrences of breast cancer		Total
	Yes	No	
Married (P = 0.043)			
A	5 (16.67%)	25 (83.33%)	30
B	12 (42.86%)	16 (57.14%)	28
Un-married (P = 0.576)			
A	1 (20%)	4 (80%)	5
B	3 (42.86%)	4 (57.14%)	7

**DISCUSSION**

The purpose of present study was to compare the recurrence rate of breast cancer between MRM and conservative surgery. Total 70 patients (35 in each group) were recruited. Mean age of patients was 44.47 ± 9.41 years with age range 30-60 years. Mean age of patients of study group A and B was 43.57 ± 9.89 years and 45.37 ± 8.95 years respectively. In study group A (MRM group), recurrence of breast cancer was found in 6 (17.14%) patients while in study group B (Conservative surgery group), recurrence of breast cancer was noted in 15 (42.86%) patients. Difference of recurrence of breast cancer between the both groups was significant with p value 0.019. In study of Shabbir et al,<sup>7</sup> total 110 patients underwent MRM, after 6 months follow up, recurrence of breast cancer was found in 23% patients. In their study mean age was 43.56 ± 8.9 years. In one study by Sarsenov et al,<sup>6</sup> breast cancer recurrence after conservative surgery was 62.3%. In another study by Mutlak et al,<sup>8</sup> breast cancer recurrence was found in 13% patients after MRM. Sattaret al<sup>9</sup> found breast cancer recurrence in 18% cases after MRM. Kheradmandet al<sup>10</sup> found frequency of recurrence as 20.2% after MRM. Overgaard et al<sup>11</sup> managed 276 cases with MRM and 27% cases found with breast cancer recurrence. Recurrence of cancer was reported in 13% cases after MRM of 218 cases by Liubota et al<sup>12</sup> Akbari et al<sup>13</sup> performed MRM among 115 cases and breast cancer recurrence was found in 18.26% cases. Alexandrova et al<sup>14</sup> performed MRM in breast cancer cases and found recurrence of cancer in 7.8% patients. In studies of Andry et al<sup>15</sup> and lundkvisit et al<sup>16</sup> recurrence rate of breast cancer was 14% and 9.8% respectively after MRM.

Total 3 age groups (30-40 years, 41-50 years and 51-60 years) were created. In age group 30-40 years, breast cancer recurrence was seen in 3 (20%) patients of study group A while in 4 (50%) patients of study group B. Insignificant (P 0.182) difference was noted. In 41-50 years age group, recurrence was noted in 2 (18.18%) patients and 6 (33.33%) patients of study group A and B and difference of recurrence was not significant (P = 0.671). In age group 51-60 years, only 1 (11.11%) patient of study group A found with recurrence of breast cancer while 5 (55.56%) patients of study group B found with recurrence of breast cancer. Difference of recurrence of breast cancer between the groups was not significant (P = 0.131).

In study of Shabbir et al,<sup>7</sup> total 10% cases were <30 years followed by 11.82% patients belonged to age group 30-40 years, 37.27% to age group 41-50 years and 40.91% patients to age group 51-60 years. Recurrence of breast cancer was noted in 18.18% patients, 23.08% patients, 24.39% patients and 22.22% patients respectively. In study of Mutlak et al,<sup>8</sup> breast cancer was very common in 3rd and 4th decade of life. In our study, total 2 (25%) and 6 (60%) primiparas of study group A and B found with recurrence of breast cancer but difference was insignificant (P = 0.188). In multipara group, recurrence was found in 4 (14.81%) patients and 9 (36%) patients of study group A and B respectively. Insignificant (P = 0.112) difference was noted. In study of Shabbir et al,<sup>7</sup> out of 51.82% primary paras, recurrence was noted in 19.30% patients and out of 48.18% multiparas, recurrence was noted in 26.42%. All these patients underwent MRM.

**CONCLUSION**

Findings of this study showed showed higher frequency of recurrence of breast cancer in cases managed with conservative

surgery as compared to MRM. Most of the cases belonged to 3<sup>rd</sup> decade of life. Among non-obese cases, significant difference of recurrence was seen. Most of the cancer cases were multiparas but difference of recurrence was not significant. Higher number of married cases were reported with breast cancer and difference between conservative surgery group and MRM group was significant.

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