Original Article

Comparison of health related quality of life among female patients who had received early versus delayed physiotherapy after modified radical mastectomy

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Objective: To juxtapose the difference in quality of life in female participants who received early physiotherapy versus delayed physiotherapy treatment after modified radical mastectomy (MRM).

Methodology: This comparative cross sectional study included 281 females who were diagnosed with breast cancer and treated with MRM was recruited using non-probability convenience sampling technique. They were taken from Shaukat Khanum Memorial Cancer Hospital, Inmol Hospital, Ganga Ram Hospital and Fatima Memorial Hospital Lahore after taking ethical permission from the respective departments. Duration of the study was 6 months. Informed consent was taken from participants. All patients were given a standard questionnaire (SF-36) regarding quality of life to fill. For data analysis, SPSS 17 was used with an independent T-test.

Results: Out of 281 women, 28.8% were between 40 to 45 years, 21.4% between 46 to 45 years, 22.4 % between 51 to 55 years and 27.4% between 56 to 60 years of age. Majority (55.2%) had their right side involved and 48.1% had received early physical therapy after MRM. Results of all eight domains of SF-36 were highly significant between early and delayed physiotherapy (p=0.00).

Conclusion: Early physiotherapy was more helpful as compared to delayed physiotherapy in order to improve health related quality of life of breast cancer patients after modified radical mastectomy. (Rawal Med J 202;46:292-295).

Keywords: Quality of life, modified radical mastectomy, early physical therapy.

INTRODUCTION

Breast cancer is the most prevailing cancer in females and the 2nd source of cancer-related deaths in females.[1,2] A recent survey showed estimated 231,840 females suffering from breast cancer in United States.[3] Breast disease and later cancer development is more severe in young females compared to its development in older females.[2] Risk factors can genetic mutations of brca1 and brca 2 genes,[4] family history of breast cancer, increased breast density, early menarche, late pregnancy, delayed menopause, sedentary lifestyle, smoking, alcohol intake, oral contraceptive use and hormone replacement therapy.[5] Breast cancer can be invasive ductal carcinoma and lobular carcinoma, Invasive ductal carcinoma being the most common type.[6]

Mastectomy is the most preferable treatment, along with chemotherapy, hormone replacement therapy and radiotherapy.[3,7] Out of all the types of mastectomy, modified radical mastectomy (MRM) is the most common.[6] Some of the complications that relates to mastectomy ranges from sleep disturbance, discomfort, cosmetic issues, hemorrhage, upper extremity lymphedema, muscle atrophy and decreased shoulder mobility.[6,8,9] Other complications associated with MRM are pain, seroma, axillary web syndrome.[7] To prevent all these complications and improves quality of life of patients early physiotherapy is highly recommended.[10]

Manual lymphedema therapy in patients who had MRM is a type of massage to remove the fluid from swelled area. Therapeutic techniques consist of shoulder and whole limb range of motion, stretching and strengthening exercises.[11] Compression garments are also used to decrease discomfort and swelling.[6] Several complications can be overcome

by means of physiotherapy. However, the impact of exact time for the implication of physiotherapy to overcome the complications has no strong evidence yet and needs to be identified. Therefore, this study was conducted to compare the quality of life among female patients receiving early v/s delayed physical therapy treatment after MRM.

METHODOLOGY

The comparative cross sectional study included 281 females chosen by non-probability convenient sampling technique. Study was conducted from January to June 2020. Sample size calculated was 273 through epitool by using estimated proportion as 0.77, desired precision as 0.05 and confidence interval as 0.95. Patient population was taken from Shaukat Khanum Memorial Cancer Hospital, Inmol Hospital, Ganga Ram Hospital and Fatima Memorial Hospital, all in Lahore. Permission was taken from the respective departments and an informed consent was taken from all patients.

We included females between the ages of 40 to 60 year, who had undergone MRM. Those with unilateral MRM (Right /left) who had only grade 1 and 2 breast carcinoma and the patients that had recurrent cases of breast cancer, with metastatic cancer, pre op neuromuscular impairments such as stroke, patient with shoulder or chest traumatic history on same side and patients with rheumatic diseases history involving shoulder on the same side were excluded.

All patients were screened for functional activities, emotional health, general health and social activities by using the standardized Short form 36 (SF-36) questionnaires to assess health related quality of life.[13]

Statistical Analysis: All data analysis was performed using SPSS version 17. Independent sample T-test was used to scrutinize results of health related QOL in SF36 questionnaire. $p<0.05$ was considered significant.

RESULTS

Out of 281 patients, 28.8% were between 40 to 45 years of age, 21.4% were between 46 to 45 years, 22.4 % were between 51 to 55 years and 27.4% were between 56 to 60 years of age. (Table 1). On the whole, 155(55.2%) women had their right side whereas 126 (44.2%) had their left side removed (Table 2). Early physiotherapy was received by 136(48.4%) women and delayed physiotherapy by 145(51.6%) women (Table 3).

Table 1. Descriptive statistics for age groups.

Variable	Construct	Frequency	Percentage
	40-45	81	28.8%
Age Group	46-50	60	21.4%
	51-55	63	22.4%
	56-60	77	27.4%

Table 2. Side involved in mastectomy.

Variable	Construct	Frequency	Percentage
Side	Right	155	55.2%
	Left	126	44.8%

Table 3. Time at which physiotherapy received.

Variable	Construct	Frequency	Percentage
Time of	Early physiotherapy**(with in one week after mastectomy**)	136	48.4%
Physio-therapy	Delayed physiotherapy**(two weeks or more after mastectomy)**	145	51.6%

Table 4. SF-36 health related quality of life and Independent Sample t-test.

Parameters of SF-36 questionnaire	Early physiotherapy (within one week after mastectomy) mean± standard deviation	Delayed physiotherapy (two weeks or more after mastectomy) mean± standard deviation	P-value
Physical functioning	80.69±10.56	42.89±17.03	0.00
Role limitations due to physical health	95.22±12.73	33.96±32.76	0.00
Role limitations due to emotional problems	97.79±14.74	51.26±37.06	0.00
Energy or fatigue	66.98±9.62	39.72±13.79	0.00
Emotional well being	78.44±10.66	57.29±14.83	0.00
Social functioning	88.87±8.69	63.62±15.37	0.00
Pain	77.27±13.45	50.62±18.72	0.00
General health	79.70±11.43	41.89±19.60	0.00

Role limitations due to emotional problems of patients who received early and delayed

physiotherapy was 97.79±14.74 and 51.26±37.06, respectively (p=0.00). Energy and fatigue of patients who received early and delayed physiotherapy was 66.98±9.62 and 39.72±13.79, respectively (p=0.00). Emotional well-being of patients who received early and delayed physiotherapy was 78.44±10.66 and 57.29±14.83, respectively (p=0.00). Social functioning, pain and general health of patients who received early and delayed physiotherapy are shown in Table 4.

DISCUSSION

The results of current study showed highly significant difference between two categories of patients with p value = 0.00. A prospective study in patients of MRM to determine effects of early rehabilitation in functional status, post-op complications and on shoulder functions showed significant difference in arm function and overall functional status in treatment group who receive early rehabilitation.[14]

A pilot study was conducted by Kilgour et al, in which home based exercise rehabilitation effects were assessed in post mastectomy patients reported home based exercises (p=0.003) respectively in post mastectomy patients.[15] Gaikwad and Hande found that mid forearm circumference showed significant difference between both groups with p=0.046, at the level of elbow both groups again showed significant difference with p=0.032 and at arm level both groups were not significant with p =0.058.[6]

A non-randomized clinical trial was conducted by Rett et al which aimed to assess range of motion (ROM) and functional status of breast cancer patients after surgery with relation to the physiotherapy. They noted significant increase in ROM of all movements and DASH score significantly decreased with (p=0.001), which means functional performance was increased.[16] Our results are similar.

A randomized control trial was conducted by Xin et al, aimed to determine that weather manual lymph drainage (type of physiotherapeutic intervention) with exercises is helpful to prevent axillary web syndrome (a complication of MRM) or not. Results showed that incidence of axillary web syndrome (AWS) decreased with time in both groups. At one month, number of women with AWS decreased in both groups with (p=0.05). At two months, assessment showed significant difference between both groups with (p<0.01).[17]

According to recent studies, physiotherapy after patient education in the first week of mastectomy is highly preventive and beneficial in decreasing the risk of post op complications.[10] Further studies regarding importance of physiotherapy after surgery and time of physiotherapy should be done on larger population. This was a comparative cross-sectional study, so randomized control trials, to determine effectiveness of different physiotherapeutic interventions regarding patients of post mastectomy should also be done.

CONCLUSION

Early physiotherapy was significantly more helpful as compared to delayed physiotherapy in order to improve health related quality of life of breast cancer patients after modified radical mastectomy.

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