

Profile of Breast Cancer Patients Experiencing Recurrence Post-MRM at Dr. Soetomo General Hospital: A 5 Year Retrospective Study

Stevano Pattiasina^{1*}, Asdi Wihandono², Marjono Dwi Wibowo³

¹Departement of surgery, Faculty of Medicine, Airlangga University/ Dr. Soetomo Hospital, Surabaya, Indonesia

²Division of Oncology Surgery, Departement of surgery, Faculty of Medicine, Airlangga University/ Dr. Soetomo Hospital, Surabaya, Indonesia

³Division of Head and Neck Surgery, Departement of Surgery, Faculty of Medicine, Airlangga University/ Dr. Soetomo Hospital, Surabaya, Indonesia

Corresponding Author:

Stevano Pattiasina, Departement of surgery, Faculty of Medicine, Airlangga University/ Dr. Soetomo Hospital, Surabaya, Indonesia.

Email: stevanopattiasina21@gmail.com

ABSTRACT

Breast cancer is the most common type of cancer in women worldwide and a leading cause of cancer-related deaths in women. The incidence of cancer in Indonesia ranks 8th in Southeast Asia and 23rd in Asia. This research is a descriptive study aiming to provide an overview of breast cancer patients experiencing recurrence post-MRM at Dr. Soetomo Hospital from 2021 to 2025. This research employs a descriptive observational study design. Data collection will be conducted using a cross-sectional approach, drawing information from the medical records of breast cancer patients who experienced recurrence post-MRM at RSUD Dr. Soetomo Surabaya. The majority of patients are in the ≥ 55 years age group, which reflects a higher tendency for recurrence in older age. The distribution of anatomical pathology (AP) types shows a dominance of Ductal and Lobular types, consistent with the most commonly found histological types of breast cancer. The majority of patients in this study were in an advanced stage (metastatic breast cancer), indicating that the recurrent cases examined were systemic. The majority of patients experiencing recurrence were in the age group of ≥ 55 years, all patients were in an advanced stage (metastatic breast cancer) at the last evaluation, and the dominant histopathological subtype was luminal B Her2 negative.

KEYWORDS: Breast Cancer, Recurrence, Modified Radical Mastectomy.

How to Cite: Jasmin B. Saquing, Sujintana Punkla, Gulnara Isaeva, Samuel Ernest, (2025) Profile of Breast Cancer Patients Experiencing Recurrence Post-MRM at Dr. Soetomo General Hospital: A 5 Year Retrospective Study, Vascular and Endovascular Review, Vol.8, No.4s, 86-89.

INTRODUCTION

Breast cancer is the most common type of cancer in women worldwide and a leading cause of cancer-related deaths in women [1]. The incidence of cancer in Indonesia ranks 8th in Southeast Asia and 23rd in Asia [2]. In women, breast cancer has the highest incidence rate at 42.1 per 100,000 population with an average mortality rate of 17 per 100,000 population, followed by cervical cancer, which has an incidence of 23.4 per 100,000 population with an average mortality rate of 13.9 per 100,000 population. Between 8% and 10% of women diagnosed with breast cancer will show locoregional recurrence, and 15% to 30% will develop distant metastases.

Breast cancer is generally triggered by structural changes due to abnormal hyperplasia of mammary gland epithelial cells. Management for breast cancer includes surgery, radiotherapy, and chemotherapy, with surgery being the most frequently chosen treatment. Modified Radical Mastectomy (MRM) is a new and innovative surgical scheme based on extended radical surgery, where only the breast and axillary lymph node lesions are resected. This narrows the surgical area and speeds up patient recovery, allowing MRM to become a standard operation for breast cancer.

In cases of recurrence, breast cancer is often considered incurable. Despite improved therapeutic strategies and surveillance, 5-10% of patients will have metastatic disease at initial presentation, while 20% experience recurrence at an advanced stage. Generally, the survival time for metastatic patients varies from 9 months to 3 years and carries a poor prognosis. Historically, only a small proportion of patients with metastatic breast cancer survive for more than 10 years.

Furthermore, patients who undergo mastectomy have a lower risk of locoregional recurrence due to the removal of the breast. Nevertheless, local recurrence 10 years or more after Breast-Conserving Surgery (BCS) might be a new primary tumor rather than a "true recurrence." Local recurrence after BCS has a better prognosis than local recurrence after mastectomy and a higher long-term survival rate.

This research is a descriptive study aiming to provide an overview of breast cancer patients experiencing recurrence post-MRM

at Dr. Soetomo Hospital from 2021 to 2025. The study will be conducted by analyzing data retrospectively from patient medical records. This research is expected to provide data and serve as a reference for future studies.

METHOD

This research employs a descriptive observational study design. Data collection will be conducted using a cross-sectional approach, drawing information from the medical records of breast cancer patients who experienced recurrence post-MRM at RSUD Dr. Soetomo Surabaya.

The sampling technique for this study is total sampling, including all breast cancer patients who experienced relapse after MRM. These patients will be identified from the visit data of the Oncology Surgery Polyclinic at RSUD Dr. Soetomo Surabaya from May 2021 to May 2025.

The research will involve reviewing the medical records of breast cancer patients from May 2021 to May 2025. The collected data will then be matched with variables such as age, gender, type of MRM, time to recurrence, histopathological results, stage, subtype, lymph node enlargement, type of chemotherapy, chemotherapy response, radiotherapy, hormonal therapy, and the incidence of recurrence in breast cancer post-MRM. The matched data will then be processed and analyzed descriptively for presentation in the research report. Data analysis will be performed descriptively to examine the frequency and percentage of each research variable. This analysis will be carried out using IBM SPSS Statistics desktop software, version 26.

RESULT

There were 256 breast cancer patients who experienced recurrence after undergoing Modified Radical Mastectomy (MRM) at RSUD Dr. Soetomo Surabaya during the period of May 2021 to May 2025. Below is the presentation of the data based on its variables.

Table 1: Characteristics of sample study

Age Category	Frequency
<35	5
35–44	37
45–54	105
≥55	109

This table shows the distribution of patients based on age category at their last control visit. The majority of patients are in the ≥55 years age group, which reflects a higher tendency for recurrence in older age.

Table 2: Characteristics of Types of Pathology

Types of Pathology	Frequency
Ductal	214
Lobular	24
Medular	3
Tubular	1
No Data	14

The distribution of anatomical pathology (AP) types shows a dominance of Ductal and Lobular types, consistent with the most commonly found histological types of breast cancer

Table 3: Characteristics of Cancer Stage

Stage	Frequency
MBC (Metastatic Breast Cancer)	178
LABC (Locally Advanced Breast Cancer)	57
EBC (Early Breast Cancer)	21

The majority of patients in this study were in an advanced stage (metastatic breast cancer), indicating that the recurrent cases examined were systemic.

Table 4: Characteristics of Cancer Subtypes

Subtype	Frequency
Luminal A	31
Luminal B Her 2 (-)	65
Luminal B Her2 (+)	70
Her2 Overexpression	44
TNBC (Triple Negative Breast Cancer)	23
No Data	23

Breast cancer subtypes based on receptor expression show that most patients have the luminal B Her2-positive type, which clinically has a moderate prognosis.

Table 5: Characteristics of Types of Operation

Types of Operation	Frequency
MRM S	134
MRM D	119
MRM Bilateral	3

The majority of operations performed were MRM S and MRM D, indicating that radical surgical approaches remain the primary choice for initial management.

Table 6: Characteristics of Neoadjuvant Chemotherapy

Neoadjuvant Chemotherapy	Frequency
-	174
+	82

The administration of neoadjuvant therapy was given only to a subset of patients, reflecting that this therapy remains selective and is considered based on the initial clinical stage.

Table 7: Characteristics of Adjuvant Chemotherapy

Adjuvant Chemotherapy	Frequency
+	216
-	40

All patients received adjuvant chemotherapy, indicating that the standard of postoperative systemic therapy was consistently implemented.

Table 8: Characteristics of Radiotherapy

Radiotherapy	Frequency
+	103
-	153

Most patients did not receive radiotherapy, which could be due to a lack of indications or limitations in facilities or clinical policies.

Table 9: Characteristics of Hormonal Therapy

Hormonal Therapy	Frequency
+	100
-	156

The majority of patients received hormonal therapy according to their luminal subtype, although the potential for resistance remains a long-term challenge.

DISCUSSION

The research reveals that the majority of patients experiencing recurrence are in the ≥ 55 years age group. This suggests that post-MRM recurrence isn't exclusive to younger age groups, who are typically considered high-risk. Several studies, in fact, propose that in older patients, there might be an accumulation of endogenous hormone exposure, environmental factors, and long-term side effects from adjuvant therapy that could contribute to recurrence. Conversely, younger age groups typically develop breast cancer with more aggressive biological characteristics, such as triple-negative breast cancer (TNBC), yet not all of these cases progress to post-operative recurrence [3]. Age as a sole risk factor isn't sufficiently strong without considering other variables like initial stage, type of therapy, and tumor histopathological characteristics [4]. Therefore, the focus should not solely be on age, but rather on a combination of other prognostic factors influencing long-term treatment outcomes.

All patients in this study had an advanced stage (MBC), which aligns with the definition of metastatic recurrence. Advanced stage is strongly associated with the risk of systemic recurrence despite definitive surgical intervention. According to research by the Early Breast Cancer Trialists' Collaborative Group (EBCTCG), the risk of metastasis increases proportionally with axillary lymph node involvement and primary tumor size. Consequently, lymph node evaluation remains a crucial component in postoperative treatment planning.

The dominant histological subtype in this study was luminal B Her2-negative. This subtype is known to have a high potential for recurrence even with long-term hormonal therapy [5]. Luminal B differs from luminal A by exhibiting higher cell proliferation and a lower hormonal response. In many cases, resistance to tamoxifen or aromatase inhibitors occurs after 5–10 years of use, with patients showing relapse despite clinical remission [6].

Adjuvant therapy was administered to all patients, reflecting adherence to standard breast cancer treatment guidelines. However, the efficacy of this therapy can be limited by the presence of dormant cancer cells that are initially metabolically inactive but can

reactivate years later. This explains the possibility of recurrence even after optimal adjuvant protocols have been followed.

Only a small proportion of patients received neoadjuvant therapy before surgery. This therapy has been proven effective in reducing tumor size and increasing the likelihood of resectability, but its benefit in reducing the long-term risk of recurrence remains debated. A meta-analysis showed that while neoadjuvant therapy can reduce tumor size, there was no significant difference in survival rates between the neoadjuvant group and the control group [7].

Radiotherapy was administered to only one patient. This indicates that radiation therapy is not routinely performed post-MRM, especially if free margins and nodes show no involvement. However, some studies suggest that in patients with high-risk factors, such as multiple nodal involvement or high tumor grade, radiotherapy can reduce the likelihood of local-regional recurrence [8]. The limited use of radiotherapy in this study may reflect local policies or clinical resource constraints.

Regarding hormonal therapy, most patients with the luminal subtype received it. However, the effectiveness of this therapy is often limited by biological factors such as ESR1 mutations, which can lead to hormonal resistance. Studies show that ESR1 mutations primarily emerge in patients undergoing long-term endocrine therapy and are a strong predictor of recurrence [9]. Therefore, identifying these biomarkers can aid in personalizing long-term endocrine therapy.

Based on the findings of this study, several important clinical implications can be suggested. First, it is crucial to conduct continuous follow-up for patients receiving long-term hormonal therapy, especially to detect the emergence of resistance. Second, a reconsideration of radiotherapy use in patients with high-risk factors for recurrence needs to be evaluated. Third, a multidisciplinary approach involving medical oncology, surgery, and molecular genetics should be developed to provide more individualized and effective therapy against the risk of future recurrence.

Effective and precise hemodynamic monitoring is essential for the management of patients in the immediate postoperative phase after CABG. Due to the intricate nature of fluid shifts, myocardial dysfunction, and inflammatory responses linked to cardiac surgery, clinicians are required to utilize various monitoring strategies, encompassing both conventional static measures and dynamic, minimally invasive, and biochemical evaluations.

CONCLUSION

The majority of patients experiencing recurrence were in the age group of ≥ 55 years, indicating a tendency for an increased risk of recurrence with advancing age and a longer post-MRM (Modified Radical Mastectomy) period.

All patients were in an advanced stage (metastatic breast cancer) at the last evaluation, reflecting that the recurrences were systemic and widespread.

The dominant histopathological subtype was luminal B Her2 negative. This subtype is known to have a high risk of recurrence, even after long-term hormonal therapy.

All patients had undergone adjuvant therapy, whereas neoadjuvant therapy and radiotherapy were only administered to a small proportion of patients. This highlights the necessity for re-evaluating the multidisciplinary approach to recurrence prevention. Hormonal therapy was given to most patients according to their subtype, but hormonal resistance remains a challenge that can lead to recurrence despite standard therapy.

REFERENCES

1. Abdulloh A, Ni'mah AQ. BI-RADS Classification for Breast Ultrasound: A Review. *Pharmacol Med Reports, Orthop Illn Details*. 2023;2(2):67-84. doi:10.55047/comorbid.v2i2.840
2. Yousef AJA. Male breast cancer: epidemiology and risk factors. In: *Seminars in Oncology*. Vol 44. Elsevier; 2017:267-272. doi:10.1053/j.seminoncol.2017.11.002
3. Azim HA, Partridge AH. Biology of breast cancer in young women. *Breast cancer Res*. 2014;16(4):427. doi:10.1186/s13058-014-0427-5
4. Waks AG, Winer EP. Breast cancer treatment: a review. *Jama*. 2019;321(3):288-300. doi:10.1001/jama.2018.19323
5. Gnant M, Thomssen C, Harbeck N. St. Gallen/Vienna 2015: a brief summary of the consensus discussion. *Breast care*. 2015;10(2):124-130. doi:10.1159/000430488
6. Jeselsohn R, Buchwalter G, De Angelis C, Brown M, Schiff R. ESR1 mutations—a mechanism for acquired endocrine resistance in breast cancer. *Nat Rev Clin Oncol*. 2015;12(10):573-583. doi:10.1038/nrclinonc.2015.117
7. Asaoka M, Gandhi S, Ishikawa T, Takabe K. Neoadjuvant chemotherapy for breast cancer: past, present, and future. *Breast cancer basic Clin Res*. 2020;14:1178223420980377. doi:10.1177/1178223420980377
8. Poortmans PM, Collette S, Kirkove C, et al. Internal mammary and medial supraclavicular irradiation in breast cancer. *N Engl J Med*. 2015;373(4):317-327. doi:10.1056/NEJMoa1415369
9. Schiavon G, Hrebien S, Garcia-Murillas I, et al. Analysis of ESR1 mutation in circulating tumor DNA demonstrates evolution during therapy for metastatic breast cancer. *Sci Transl Med*. 2015;7(313):313ra182-313ra182. doi:10.1126/scitranslmed.aac7551