



Profile of Breast Cancer Patients at Dr. Moewardi Surakarta Period March 2016 - March 2018

Randi Dwiyanto^{1*}, Widyanti Soewoto²

¹Departement of Surgery, Faculty of Medicine, Sebelas Maret University, Surakarta, Indonesia.

²Departement of Surgery, Oncology Division, Faculty of Medicine, Sebelas Maret University, Surakarta, Indonesia

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*Corresponding author:

Randi Dwiyanto

E-mail address:

Randidwnt@gmail.com

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ABSTRACT

Background: Breast cancer is a heterogeneous disease caused by the interaction of genetic factors and environmental risk factors that lead to the accumulation of progressive genetic and epigenetic changes in breast cancer cells. The incidence of breast cancer in Indonesia is 11% of all cancer incidents. There are many factors that are thought to have an influence on the occurrence of breast cancer, including age, immunohistochemistry, and variable levels of first breast carcinoma at old age. **Methods:** A descriptive retrospective study by taking medical record data about breast cancer at the Dr. Moewardi General Hospital, Surakarta. at the Installation of Medical Records at the General Hospital DR. Moewardi Period February 2016 - February 2018. **Results:** According to the age group of 50 years, 162 patients (54%) and above who had a high risk and under 50 years group were 138 patients (46%). From the results of the study, breast cancer patients with grade 3 were found to be the most with 155 cases (51.67%). Hormonal receptor detection in breast cancer patients showed a high incidence of HER-2-negative patients as many as 172 patients (57.33%). The rest showed positive HER-2 results as many as 128 patients (42.67%). There was a high incidence of negative HER-2 as many as 172 patients (57.33%). The rest showed positive HER-2 results as many as 128 patients (42.67%). Positive HER-2 subtypes (ER-, PR-, HER2 +) were the most common cases, namely 128 cases (42.67%). The magnitude of the correlation (Phi and Cramer) produces the same number, while the contingency coefficient produces a smaller number. **Conclusion:** There is almost no relationship or there is a very weak relationship between age, immunohistochemistry, and variable rates of breast carcinoma, variable rates of breast carcinoma at the occurrence of metastases.

1. Introduction

Breast cancer is a heterogeneous disease caused by the interaction of genetic factors and environmental risk factors that lead to the accumulation of progressive genetic and epigenetic changes in breast cancer cells. The incidence of breast cancer in Indonesia is 11% of all cancer incidents. Every year more than 580.000 new cases are found in various developing countries and approximately 372.000 patients die from this disease. According to Moningkey and Kodim, the specific cause of breast cancer is still unknown, but there are many factors that are thought to have an influence on breast

cancer, including: Reproductive factors related to the risk of breast cancer are nulliparity, menarche at a young age, menopause at an older age, and first pregnancy at old age.¹⁻³

There are many tests that can be used to help determine the characteristics of breast cancer and provide information about treatment options and prognosis. These tests include estrogen receptor through immunohistochemical testing, which is currently the standard method for patients who will receive hormonal treatment. If the estrogen receptor is positive, hormonal therapy is indicated. Breast Cancer

Subtypes Based on Immunohistochemical Examination, namely: Luminal A: ER / PR (+), HER2 (-), Luminal B: HER2 (+) or (-), ER (+), and Triple Negative: ER / PR (-) , HER2 (-) or Claudin-low.⁴⁻¹⁰

2. Method

A descriptive retrospective study by taking medical record data about breast cancer at the Dr. Moewardi General Hospital, Surakarta. at the Installation of Medical Records at the DR. Moewardi General Hospital Period March 2016 - March 2018. During the data collection month, 300 breast cancer patient data were obtained Medical Records in Dr. Moewardi Hospital during March 2016 - March 2018.

Before determining the correlation test for each model, the data normality test was carried out beforehand with the residual data using the Kolmogorov-Smirnov normality test. In this study, there were independent variables, namely age, breast cancer grade, and breast cancer subtype based on immunohistochemistry, all of which were in the form of nominal data. After being tested for the normality of the data, the correlation test was carried out by looking for crosstab using the SPSS 22 application to find the value of the contingency coefficient, crammer v, phi, and the strength of the relationship between variables. Only pay attention to the magnitude of the correlation between nominal. This is because the two variables are nominal in scale, therefore the Pearson and Spearman magnitudes are not relevant to be discussed. There are 3 quantities to calculate the correlation between age,

grade and subtype variables with the incidence of metastases which is then followed by the Phi and Cramer tests.

3. Result

Based on the results of research conducted on breast cancer patients at Dr. Moewardi Surakarta in the period March 2016 - March 2018 there were 300 patients who were obtained in medical records. Data on the characteristics of the subjects presented included age, presence or absence of metastases, immunohistochemical examination results, and types of breast cancer subtypes in patients at Dr. Moewardi Hospital for the period March 2016 - March 2018.

There are 3 units to calculate the correlation between age, grade and subtype variables with the incidence of metastases. Only the grade variable has a significant value or p value of 0.041. Since the probability value is below 5%, it can be said that there is a relationship between grade and the incidence of metastases

The magnitude of the correlation (Phi and Cramer) produces the same number, while the contingency coefficient produces a smaller number. From the three quantities, it can be concluded that there is almost no relationship or there is a very weak relationship (called close if it approaches the number 1 and there is no relationship when it approaches the number 0) between the independent variable and the dependent variable.

Table 1. Distribution of breast cancer patients by age

Age group	F	%
≥ 50 years old	162	54
< 50 years old	138	46
Total	300	100

Table 2. Breast cancer metastases

Metastases	F	%
Metastases	150	50
No Metastases	150	50
Total	300	100

Table 3. Immunohistochemical examination results

No	Hormone Receptor Examination	F	%
1	ER and PR are negative	138	46
	ER is negative and PR is positive	36	12
	ER is positive and PR is negative	48	16
	ER and PR are positive	78	26
Total		300	100
2	HER-2 is negative	172	42.67
	HER-2 is positive	128	57.33
Total		300	100

Table 4. Grading categories based on histopathology, subtype HER2

Category	Luminal A.	Luminal B	Triple Negative	HER2 +
Age				
≥ 50 years	31 (10.33%)	32 (10.67%)	42 (14%)	57 (19%)
< 50 years	13 (4.33%)	23 (7.67%)	31 (46%)	71 (23.67%)
Total	44	55	73	128
Grade				
Grade 1	8 (2.67%)	9 (3%)	9 (3%)	16 (5.33%)
Grade 2	18 (6%)	18 (6%)	16 (5.33%)	51 (17%)
Grade 3	18 (6%)	28 (9.33%)	48 (16%)	61 (20.33%)
Total	44	55	73	128

Table 5. Results of the *kolmogorov-smirnov* normality test

Independent variable	Dependent variable	Correlation test	r	p
Age	The presence or absence of metastases	Pearson	-0.080	0.166
Grade	The presence or absence	Pearson	-0.005	0.936

	of metastases			
Immunohistological subtypes	The presence or absence of metastases	Pearson	-0,68	0.240

Table 6. The results of the Phi and Cramer correlation test

Variable	Phi	Crammer's V	Contingency	
			Coefficient Value	p
Age	-0.080	0.080	0.080	0.164
Grade	0.145	0.146	0.146	0.041
Immunohistological subtypes	0.097	0.097	0.096	0.423

4. Discussion

From the results of the study, the group aged 50 years and above who have a high risk and groups under 50 years have a lower risk. Breast cancer patients over 50 years were found to be more, namely 162 patients (54%) while those under 50 years were 138 patients (46%) (Table 1). From the results of the study, breast cancer patients with grade 3 were found to be at most 155 cases (51.67%), while patients with grade 2 were 103 cases (34.33%) and grade 1 as many as 42 cases (14%). Breast cancer patients who experienced metastases were 150 patients (50%) and 150 patients who did not experience metastases (50%) (Table 2). The locations of metastases experienced by patients were lung as many as 49 patients (32%), bone as many as 20 patients (13.3%), local residitive as many as 17 patients (11.33%), liver as many as 12 patients (8%), brain in 6 patients (4%), contralateral residitive as many as 2 patients (1.33%), multi metastases as many as 15 (10%) patients and other locations 29 patients (19.33%).

Hormonal receptor detection in breast cancer patients showed that multiple negative hormonal receptors (ER-, PR-) were the most prevalent with 138 patients (46%). Cases with double positive hormone receptors (ER+, PR+) also showed the second highest frequency with 78 patients (26%) whereas others less than 15%. Meanwhile, for testing HER-2, there was a high incidence of negative HER-2 as many as 172

patients (57.33%). The rest showed positive HER-2 results as many as 128 patients (42.67%) (table 3). Luminal subtype A (ER+ / PR+, HER2-) was found in 44 (14.67%) patients, luminal subtype B (ER+ / PR+, HER2+) was 55 patients (18.37%), basal-like / triple negative (ER-, PR-, HER2-) as many as 73 cases (24.33%). Positive HER-2 subtypes (ER-, PR-, HER2+) were the most common cases, namely 128 cases (42.67%) (table 4). Positive HER2 subtypes also occupied the most cases. In the age category, the HER2 positive subtype had the highest incidence in both the ≥50 years age group or under. In the grading category based on histopathology, positive HER2 subtypes also occupied the most cases. From the results of the correlation test for 3 variables, namely age, grade and subtype with the incidence of metastases. Only the grade variable has a significant value or p value of 0.041. Because the probability value is below 5%, it can be said that there is a relationship between grade and the incidence of metastases. The magnitude of the correlation (Phi and Cramer) results in the same number while the contingency coefficient produces a smaller number. From the three quantities, it can be concluded that there is almost no relationship or there is a very weak relationship (called close if it approaches the number 1 and there is no relationship when it approaches the number 0) between the independent variable and the dependent variable.

5. Conclusion

According to the age group of 50 years, 162 patients (54%) and above were at high risk and the group under 50 years were 138 patients (46%). From the results of the study, breast cancer patients with grade 3 were found to be the highest, namely 155 cases (51.67%),

Hormonal receptor detection in breast cancer patients showed a high incidence of HER-2-negative patients as many as 172 patients (57.33%). The rest showed positive HER-2 results as many as 128 patients (42.67%).

There was a high incidence of negative HER-2 as many as 172 patients (57.33%). The rest showed positive HER-2 results as many as 128 patients (42.67%). Positive HER-2 subtypes (ER-, PR-, HER2 +) were the most common cases, namely 128 cases (42.67%).

There was a relationship between grade and the incidence of metastases ($P = 0.041$). The magnitude of the correlation (Phi and Cramer) produces the same number, while the contingency coefficient produces a smaller number, it can be concluded that there is almost no relationship or there is a very weak relationship between the independent variable and the dependent variable.

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