

# Breast Cancer Patient Characteristics By Menarche In Adam Malik Hospital 2014-2017

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**Abstract. Background.** Breast cancer is one of the most diagnosed cancer in the world. Breast cancer starts when the breast cell grows abnormally and turns malignant. In Indonesia, breast cancer is the most diagnosed cancer in women. Up to now, the cause of breast cancer has not been identified yet. There are many factors that increase the risk of breast cancer, one of them is the early age of menarche. **Objective.** This study aim was to obtain characteristics of breast cancer patients based on age of menarche in RSUP Haji Adam Malik over 2014 -2017. **Method.** The study designed is observational with descriptive method. We used total sampling technique to get sampels. **Results.** Based on general characteristics, the majority of breast cancer patients are in the range of 40-49 years old (38,5%), graduated high school (45,2%), unemployed (66,3%), and do not have family history (94,2%). Majority of patients have stadium IIIB breast cancer (41,3%). The most diagnosed histopathology is Invasive Ductal Carcinoma (78,8%). Majority of breast cancer patients have negative estrogen receptor (67,3%), negative progesterone receptor (67,3%), negative her2 (66,3%) and positive ki-67 (67,3%). Fifty three breast cancer patients (51%) have early menarche. Based on the age of menarche, the patient with early menarche mostly has stage three breast cancer, but the age of menarche does not give a specific characteristic in histopathology and immunohistochemistry. **Conclusion.** Age of menarche gives specific characteristic in staging but not in histopathology and immunohistochemistry.

**Keyword:** *Breast cancer, Characteristic, Histopathology, Immnohistochemistry, Menarche, Sociodemographic, Staging*

## 1 Introduction

Breast cancer is the most diagnosed cancer in woman. It is the most common new cases cancer in the world, second only to lung cancer. (1) In 2018, there were estimated 2.1 million brast cancer cases among women in the world and aproximately 627.000 women died from breast cancer (2). Breast cancer is one out of four cancer that caused the death of women in the world, (3) In Indonesia, breast cancer has the highest prevalence in women with 42,1 cases per 100.000 citizen and estimation of 17 death per 100.000 patients. (4) The etiology of breast cancer is still unclear, but studies has shown that the risk of breast cancer is combination of factors such as age

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above 55 years old, obesity, smoking, genetic factor, and hormonal factor. (5) The hormonal factor is related to estrogen hormone. This hormone is responsible for the development and regulation of female reproductive system. This hormone can also act as the promotor of breast cancer. (6) One of the hormonal risk cancer is the age of menarche. Even though the age of menarche is one of the well-established factor of breast cancer, some study has shown that there are no significant relation between them. (7). In this study we try to find out the evidence of breast cancer with menarche.

## 2 Methods

This study was an observational descriptive study with cross-sectional methods. We collected secondary data from medical records. Data were collected at Haji Adam Malik General Hospital Medan. The population in this study is hospitalized breast cancer patients from January 2014-December 2017. The samples that were included in this study are breast cancer patient with confirmed histopathology examination and has complete data in characteristics that are needed in this study, such as age of menarche, staging, histopathology and immunohistochemistry . All collected data were performed in distributive frequency tables..

## 3 Results

From January 2014 until December 2017 periode, there are 1222 hospitalized breast cancer patients. Among 1222 patients, there are only 104 patients who are suitable in the criteria of this study. General characteristic of Brest Cancer Patients can be seen at table 1

**Table 1.** Distribution of General Characteristic of Breast Cancer Patients

Characteristic	Frequency	Percentage
<b>Gender</b>		
Female	104	100%
Male	0	0%
<b>Age</b>		
<30	0	0%
30-39	8	7,7%
40-49	40	38,5%
50-59	35	33,7%
60-69	17	16,3%
70-79	4	3,8%
>80	0	0%
<b>Education</b>		
Primary School	24	23,1%
Junior high school	14	13,5%
Senior high school	47	45,2%
University	19	18,3%
<b>Occupation</b>		
Unemployed	73	70,2%
Civil service employee	21	20,2%
Farmer	6	5,8%
Businessman	4	3,8%

Family History		
Yes	6	5,8%
No	98	94,2%

From the table above, we found that there was no male who got breast cancer in this study. Prevalence of breast cancer mostly over 40 years old, and 94,2% of them didn't have family history.

**Table 2.** Sample Distribution of Breast Cancer Patients Based on Menarche

Characteristic	Freruecy by Age of Menarche (years)					
	≤12	%	13-15	%	>15	%
<b>Total Case</b>	53	(51%)	47	45,2%	4	3,8%
<b>Staging</b>						
0	0	(0%)	0	(0%)	0	(0%)
IA	0	(0%)	0	(0%)	0	(0%)
IB	1	(1,9%)	0	(0%)	0	(0%)
IIA	0	(0%)	1	(2,1%)	0	(0%)
IIB	5	(9,4%)	11	(23,%)	0	(0%)
IIIA	5	(9,4%)	2	(4,2%)	0	(0%)
IIIB	22	(41,5%)	18	(38,3%)	3	(75%)
IIIC	1	(1,9%)	2	(4,2%)	0	(0%)
IV	19	(35,8%)	13	(27,7%)	1	(25%)
<b>Histopathology</b>						
<i>Ductal Carcinoma In Situ</i>	1	(1,9%)	0	(0%)	0	(0%)
<i>Invasive Breast Carcinoma</i>	4	(7,5%)	7	(14,9%)	1	(25%)
<i>No Special Type</i>						
<i>Invasive Ductal Carcinoma</i>	45	(84,9%)	34	(72,3%)	3	(75%)
<i>Invasive Lobular Carcinoma</i>	3	(5,6%)	3	(6,4%)	0	(0%)
<i>Mucinous Carcinoma</i>	0	(0%)	1	(2,1%)	0	(0%)
<i>Tubular Carcinoma</i>	0	(0%)	2	(4,3%)	0	(0%)
<b>Estrogen Receptor</b>						
Positive	19	(35,8%)	13	(27,7%)	2	(50%)
Negative	34	(64,2%)	34	(72,3%)	2	(50%)
<b>Progesterone Receptor</b>						
Positive	25	(47,2%)	10	(21,3%)	1	(25%)
Negative	28	(52,8%)	37	(78,7%)	3	(75%)
<b>HER2</b>						
1 Positive	37	(69,8%)	29	(61,7%)	2	(50%)
2 Positive	0	(0%)	1	(2,1%)	0	(0%)
3 Positive	16	(30,2%)	17	(36,2%)	2	(50%)
<b>Ki-67</b>						
Positive	28	(52,8%)	28	(59,6%)	2	(50%)
Negative	25	(47,2%)	19	(40,4%)	2	(50%)

From the data above, we found that breast cancer mostly happened in earlier menarche (≤12 years), with histopathological type is invasive ductal carcinoma.

#### 4 Discussion

In this study, the breast cancer patients in Haji Adam Malik General Hospital is 100% female which is correspondent with Global Cancer Observatory data.(8) Even though all of the breast cancer patients are female, it does not mean that male cannot be at risk of breast cancer. In 2019, American Cancer Society estimated about 2670 new cases of male breast cancer and approximately up to 500 male die because of breast cancer in America. (9) The breast cancer

patients in this study is 30-79 years old. Most of the patients are in the range of 40-49 years old. This result is similar with breast cancer profile in Manado. (10) But this result does not go along with the surveillance study in America which says the incidence of breast cancer will increase along with the age. (11) Majority of the breast cancer patients in this study are graduated from high school. This result is similar to breast cancer profile in Manado where 61% of the breast cancer patients are graduated from high school. (10) This result also goes along with the demography data of Neighborhood and Breast Cancer (NABC) where the breast cancer patient has finished post secondary. (12) The majority of breast cancer patient in Haji Adam Malik General Hospital is unemployed. This result goes along with the study by Dewi and Hendrati (13) but not with the study by Fenga which says that mostly breast cancer patient is employed and have work night shifted and their occupation is increasing the risk of breast cancer. (14) Even though that family history is one of the well established risk factor in breast cancer, only six patients in this study has family history and the rest 94,2% do not have any family history (94,2%). (5)

From table 4.2, we can see that 53 patients have early age of menarche ( $\leq 12$  years old), 47 patients with age of menarche between 13-15 years old and 4 patients with late menarche ( $> 15$  years old). Majority of the breast cancer patient in Haji Adam Malik General Hospital has an early age of menarche which is the risk factor of breast cancer. (5) Early age of menarche make an individual has longer time interacted with estrogen which proliferate the breast cells and also produce metabolites which can lead to breast cancer by mutation.

In staging, the majority of breast cancer is in stage III B. Based on the study by Qoyyimah and Yuliyani, the patient with early age of menarche mostly is in stage III which is similar to this study. (14) But it is different with the study by Aini which says the most patient in early age of menarche is in stage IV (60,4%). (15) In histopathology, in all group of menarche invasive ductal carcinoma (IDC) is mostly diagnosed. This result does not go along with the study in 2012 by Collaborative Group on Hormonal Factors in Breast Cancer in which invasive lobular carcinoma (ILC) is mostly found, but this result is similar to Chen in 2017 which says the most diagnosed and found in breast cancer patient is invasive ductal carcinoma.

In immunochemistry, age of menarche does not give a specific characteristic as mostly the result is the same in every group. By estrogen receptor, most patient in Haji Adam Malik General Hospital has negative result. The study by Ambrosone says that the risk of breast cancer with ER-negative will decrease in the later of menarche. (18) But this result does not go along with the patient in Adam Malik as the percentage of ER-negative breast cancer increase in the later group of menarche age. In progesterone receptor, HER-2 and Ki-67, there is no study which link them with the age of menarche. In this study, mostly breast cancer patient has negative receptor progesterone, negative Her2 and positive Ki-67 in all group of menarche age.

## 5 Conclusion

The breast cancer patients in Haji Adam Malik General Hospital are mostly in the range age of 40-49 years old, finished high school, unemployed, have no family history. Generally, the breast cancer patients are on stage III B (41,3%), with invasive ductal carcinoma finding (78,8%), negative estrogen receptor (67,3%), negative progesterone receptor (65,4%), negative her2 (66,3%) and positive ki-67 (55,7%). Majority of the breast cancer patients have early age of menarche ( $\leq 12$  years old). The age of menarche does not give specific characteristic finding in staging, histopathology and immunohistochemistry

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