

INCIDENCE RATE AND CLINICAL CHARACTERISTICS OF TRIPLE NEGATIVE BREAST CANCER PATIENTS IN HASAN SADIKIN HOSPITAL, FOR THE LAST FIVE YEARS

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ABSTRACT

Breast cancer is the most common cancer in Indonesia and ranks as the first cause of cancer death. Data from the Global Cancer Observatory (GLOBOCAN) 2020 shows that as many as 16.6% of the total 396,914 new cases of cancer in Indonesia are breast cancer with a mortality rate of more than 22 million. This study took all data on breast cancer patients at Hasan Sadikin Hospital (RSHS) from 2015-2019. Where from all this data, then the inclusion criteria are patients who have TNBC from immunohistochemistry analysis. From all existing samples, the patient's age is then recorded and then grouped. This age mapping is to find out what age group TNBC occurs the most. Of the 4050 breast cancer patients who went to RSHS in 2015-2019, 628 patients showed supportive immunohistochemistry results towards a triple negative diagnosis. From all these data, it was then found that the age group that was most diagnosed with TNBC in RSHS was 41-50 years old, which was 237 people or about 37%. From all existing data, a recidivist incidence rate of 11 cases or around 1.7% was obtained. TNBC is a malignant and aggressive type of breast cancer because the immunohistochemistry (IHC) presentation does not have three receptors that can be found in other types of breast cancer, namely estrogen (ER), progesterone (PR), and a protein known as human epidermal growth factor (HER2). This research has limitations, namely that the data available is very minimal so that it is considered less representative. Research on a larger scale and longer time is needed to provide a more real and representative picture.

Keywords: cancer, TNBC, RSHS

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INTRODUCTION

Breast cancer is the most common cancer in Indonesia and ranks as the first cause of cancer death (Riyanda et al., 2022). Data from the Global Cancer Observatory (GLOBOCAN) 2020 shows that as many as 16.6% of the total 396,914 new cases of cancer in Indonesia are breast cancer with a mortality rate of more than 22 million. The current development of science makes it possible to know breast cancer more deeply, including its genetics (Simpson et al., 2005; Taube et al., 2010). The high mortality rate of breast cancer can be caused due to several factors (Sun et al., 2017). Apart from delays in diagnosis, several types of cancer are indeed aggressive, one of which is triple-negative breast cancer (TNBC) which is a type of breast cancer that is invasive, grows and develops faster, and has more limited management compared to other breast cancers so that it has a worse prognosis (Siddharth & Sharma, 2018a). The incidence rate of TNBC is about 10-15% of all breast cancers. Due to poor progressivity and prognosis, it is important to understand more about this TNBC, so we provide an overview of the characteristics of TNBC patients in RSHS in the hope of adequately representing West Java because RSHS is a referral center throughout West Java (Sutedja et al., 2021).

METHOD

This study took all data on breast cancer patients at Hasan Sadikin Hospital (RSHS) from 2015-2019. Where from all this data, then the inclusion criteria are patients who have TNBC from immunohistochemistry analysis (Du et al., 2020). From all existing samples, the patient's age is then recorded and then grouped. This age mapping is to find out what age group TNBC occurs the most. From the existing data, data regarding re-visits to the polyclinic and the results of examinations that support the recurrence or recidivist direction are documented. Data analysis was carried out descriptively to determine the description of the characteristics of TNBC patients at RSHS in order to provide an epidemiological picture of TNBC cases in West Java because RSHS is a referral center throughout West Java.

RESULTS AND DISCUSSION

Of the 4050 breast cancer patients who went to RSHS in 2015-2019, 628 patients showed supportive immunohistochemistry results towards a triple negative diagnosis. From all these data, it was then found that the age group that was most diagnosed with TNBC in RSHS was 41-50 years old, which was 237 people or about 37%. From all existing data, a recidivist incidence rate of 11 cases or around 1.7% was obtained.

Table 1.

Incidence of Breast Cancer and TNBC in RSHS 2015-2019

Year	Incidence Rate	TNBC
2015	634	118
2016	899	144
2017	814	186
2018	799	88
2019	904	92
Total	4050	628

Table 2.

Age group distribution of TNBC patients in RSHS 2015-2019

Age Group	Frequency
< 20-year-old	1
21–30-year-old	27
31–40-year-old	126
41–50-year-old	237
51–60-year-old	161
>61-year-old	76

Table 3.

TNBC stage distribution in patients in RSHS 2015 - 2018

Year	Early	Locally advanced	Advanced
2015	18	52	30
2016	33	48	19
2017	46	42	12
2018	31	29	40
2019	24	48	28
Total	152	219	129

DISCUSSION

TNBC is a malignant and aggressive type of breast cancer because the immunohistochemistry (IHC) presentation does not have three receptors that can be found in other types of breast cancer, namely estrogen (ER), progesterone (PR), and a protein known as human epidermal growth factor (HER2). TNBC takes a share of 24% of all newly diagnosed breast malignancies. The presence of these three receptors can help to deal with cancer, for example with hormonal therapy or other treatments that make these receptors a target (Borri & Granaglia, 2021). However, in TNBC, since these three receptors are absent, handling them becomes more difficult. Nevertheless, chemotherapy can still be used in this type of cancer.

The management of TNBC generally goes through several stages, namely surgical removal of tumor masses which can be done with lumpectomy or mastectomy. After mass removal, treatment will be followed by chemotherapy. In some cases, neoadjuvant chemotherapy can be performed to shrink the tumor mass before surgery.

TNBC has a poor prognosis because it is an aggressive type of breast cancer that grows so quickly that when diagnosed it often has metastasized and has a higher recurring and recidivist rate even after treatment compared to other types of breast cancer. In Asia, breast cancer is widely diagnosed in the age group of 40-50 years, this is different from Western countries, where breast cancer is widely diagnosed in the age group of 60-70 years. Generally, TNBC is commonly found in women under the age of 40, black race, and have BRCA1 mutations (Borri & Granaglia, 2021). The American Cancer Society states that the survival rate of TNBC for the next five years is about 77%, which when compared to other types of breast cancer, this rate is quite low, because other breast cancers can reach 93%. In addition to the lower survival rate, TNBC has a shorter sequalae period than other breast cancers, namely sequalae will occur in less than 1-3 years. Metastases in TNBC generally occur in the visceral organs, but it does not rule out the possibility of metastases in other places such as the lungs, brain, bones, pleura, and liver. TNBC metastasizes through the mechanism of genetic imbalance of tumor primary cells, the ability of cancer cells to survive the immune system, and the environmental conditions (microenvironment) in which the tumor cells appear. Recurrence from TNBC is divided into locoregional (LRR = locoregional recurrence) and distant metastasis (Borri &

Granaglia, 2021). Locoregional metastases occur when recurrence occurs in the same place where the tumor first appeared or around it, while distant metastases occur when tumor cells enter the bloodstream and find other tissues to grow where tumor spread occurs through blood vessels and lymphatic tissue (Siddharth & Sharma, 2018b). Generally, the lymphatic tissue that most often metastasizes is the axillary lymphatic node (Karlsson et al., 2017). Prevention of relapse and metastasis in TNBC is necessary because until now, the only available therapies for TNBC are systemic chemotherapy where this systemic chemotherapy is at risk of increased toxicity and is multidrug-resistant. The combined use of chemotherapy, surgery, and radiotherapy is expected to be effective on TNBC, but this is still in phase II/III research. In the early stages of TNBC, chemotherapy is still considered the most appropriate treatment for fast-growing cancer cells. The surgical management that is currently still widely chosen is breast-conserving therapy (BCT) to be followed by adjuvant chemotherapy. The literature shows that mastectomy has no effect in reducing the incidence of locoregional recurrence compared to BCT.

In the world, the incidence rate of TNBC is 15-20% of all breast cancers, while in Asia, TNBC amounts to about 10-17% of all breast cancers (Mehraj et al., 2022; Wang et al., 2018)5,7). This is not much different from what we found in our study, that in five years, the total incidence of TNBC among all breast cancers was 628 cases (15%) out of a total of 4050 cases from 2015 to 2019. A cohort study in Singapore found that in the Chinese, Malays, and Indians the incidence rate of TNBC accounted for 13% of the total incidence of breast cancer. Another study stated that Asian races have the lowest risk of TNBC, which is about 0.77% (0.67-0.88%) compared to African races – Americans (1.98%), Hispanics (1.04%), and white women (1.25%). Known as the most aggressive tumor due to its metastatic ability and response to therapy that is more difficult than other breast cancers, TNBC diagnoses are often late. Research reports from China suggest that patients with TNBC generally come with large invasive tumors, spread to lymphatic nodes, and clear histopathological staging. This is in accordance with what we got in our study that most cases are found at the locally advanced stage, which is about 44% of all cases over 5 years.

The aggressive nature of TNBC is also influenced by its fairly high recidivist incidence rate. In our study, 11 out of 628 TNBC cases (1.7%) were recidivist.

CONCLUSION

TNBC is a type of cancer that is classified as difficult to treat due to its level of aggressiveness and limited therapeutic options. Characteristics of TNBC patients in RSHS need to be carried out to provide an overview of TNBC cases in West Java. This research has limitations, namely that the data available is very minimal so that it is considered less representative. Research on a larger scale and longer time is needed to provide a more real and representative picture.

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