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ORIGINAL ARTICLE

Description of breast cancer patients at Hasan Sadikin hospital Bandung based on age and stadium

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ABSTRACT

Breast cancer is a disease when normal cells are genetically mutated and become abnormal. Cells can divide and proliferate abnormally and invade breast tissue originating from the ductal epithelium or its lobules. Malignant disease caused by breast cancer is a significant problem faced by women around the world. In 2017, breast cancer experienced by women ranked first in new cases, namely 252,710 cases. Every increase in age is thought to be one factor influencing breast cancer incidence due to long-term hormonal exposure. The study's objective was to describe the age and stage levels of the patients with breast cancer at Hasan Sadikin Hospital Bandung, employing descriptive method. The collected data was obtained from the medical records of breast cancer patients recorded between January to December 2018 at the Surgical Oncology Unit of Hasan Sadikin Hospital Bandung. Sampling was carried out using a total sampling technique. The results showed there were 414 patients with breast carcinoma. Breast cancer was primarily found at the age of 36-50 years in 52.7% of cases. The most prevalent stage of breast cancer is stage III B, with 41.1%. Breast cancer incidence increases with age, and the high proportion in stage III is due to the lack of information and awareness about early detection and a delay in seeking treatment. In order to reduce the number of breast cancer cases, it is recommended that related regional health installations/facilities provide further education and information regarding the dangers of breast cancer for women.

Keyword: abnormal cell, age, carcinoma mammae, oncology, stadium

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INTRODUCTION

Carcinoma mammae is a disease when normal cells genetically mutated become abnormal. Cells divide and proliferate abnormally and uncontrollably, infiltrate surrounding tissues (invasion), spread through connective tissue, blood vessel or organs. Carcinoma cells will continue to divide despite the fact that the body does not require them, resulting in an accumulation of new cells called malignant tumors. The accumulation of these cells disturbs and damages normal tissue, there by affecting the surrounding organs. Carcinoma mammae can arise from the ductal epithelium or its lobules.[1,2] Carcinoma mammae is generally categorized into two types, namely invasive and non invasive. Invasive carcinoma mammae consist of invasive ductal carcinoma (IDC), invasive lobular carcinoma (ILC), medullary carcinoma, tubular carcinoma, dan paget's disease. Non-invasive carcinoma mammae consist of ductal carcinoma in situ (DCIS), and lobular carcinoma in situ (LCIS).[3] Breast cancer has become a major concern for women around the world. According to the American Cancer Society (ACS), breast cancer in women was ranked first as new cases in 2017. Meanwhile, the mortality rate for breast cancer in women in 2017 was in the second place after lung cancer.[4] Breast cancer became the most prevalent cancer in women worldwide in 2012, with 1,670,000 new cases and 522,000 deaths. Of all carcinoma diagnoses, the incidence rates are 18%, 46%, and 14% in Asia Pacific, China and Japan respectively.. It is estimated that the incidence rate in Indonesia is 12/100,000 women, while in America it is around 92/100,000 women, with a fairly high mortality of 27/100,000, or 18% of deaths found in women. This disease can also affect men with a frequency of about 1%. In Indonesia, more than 80% of cases are found to be at an advanced stage, which cause treatments to be more difficult.[1,5,6]

According to Indonesian Ministry of Health, breast cancer had the highest incidence of new cases among women in 2013, with 819 cases and 221 mortality rates..[6] As shown in 2013 data from Info Datin, West Java had the second highest number of breast cancer cases following Central Java (6,701 cases).[7] According to research conducted by Sander at Hasan Sadikin Hospital, there were 347 patients diagnosed with breast cancer in 2003-2008.[8] In addition, in 2017, Hasan Sadikin Hospital recorded 365 cases of breast cancer with the number increasing every year. Faida's research at Surabaya Oncology Hospital in 2010-2014 revealed the incidence of breast cancer in women under the age of 31 years by 0.62%, while it affected the groups of ages between 31 and 50 years by 45%, and over 50 years by 54.38%.[9] In 2015, the research by Dewi at East Java Central General Hospital also found that 19.2% of patients were aged 28-30 years, 38.5% were aged 31-35 years, and 42.3% were aged 36-40 years.[10] Furthermore, Agustina's research at Hasan Sadikin Hospital Bandung in 2015 discovered that 29.5% of the patients were between 21 and 35, 34% were between 36 and 50, and 36.5% were over 50.[11] Based on those study results, it can be concluded that the risk of developing breast cancer is higher with the increasing age; women aged less than 30 years tend to have lower risk than those over 31 years old. The signs and symptoms of breast cancer include lumps in the breast that are palpable and typically hardened, irregular, and sometimes painful. In the early stages, there is only a small lump with no pain; while in the advanced stages, there are usually changes in its shape and size, wrinkles on the breast skin resembling an orange peel, abnormal pus and blood discharge, retracted, itchy, and painful nipples, bone pain, swollen arms, skin ulceration, and weight loss.[12,13]

Age, genetics, hormones, lifestyle, environment, and a history of previous benign tumors are the risk factors of developing breast cancer. Half of the individuals with the above risk factors may develop breast cancer. However, age is the most supportive among those risks; the older the individual, the higher the risk of breast cancer, and the more advanced the stage, the worse the patient's quality of life. Other risk factors that are closely related to an increased prevalence of breast cancer include female gender, age > 50 years, family and genetic history (carriers of BRCA1, BRCA2, ATM or TP53 (p53) gene mutations), previous history of breast disease (DCIS in the same breast, LCIS, high-density mammography), history of early menstruation (< 12 years) or late menarche (> 55 years), reproductive history (not having children and not breastfeeding), hormonal, obesity, alcohol consumption, history of chest wall radiation, and environmental factor.[14]

According to data from Desanti's research in Semarang in 2010, it showed that stages I and II accounted for 4% of the cases, and stages IIIA and IIIB accounted for 68.5% of the cases.[13] Between 2014 and 2016, the research by Indrati at Sanglah Central Hospital in Denpasar revealed 1 case in stage I (3.8%), 4 cases in stage IIA (15.4%), 5 cases in stage IIB (19 .2%), 6 cases in stage IIIA (23.1%), 8 cases in stage IIIB (30.8%), 2 cases in stage IV (7.7%), and 0 cases in stage 0 (0%)[14] In addition, the research by Sutrisno at Hospital Hasan Sadikin Bandung in 2016 showed that stage I was 0%, stage II was 41%, and stage III was 59%.[15] Based on the description above, the incidence and mortality rates of breast cancer are still high. The risk of developing breast cancer increases with age; the older you are, the greater your risk of developing mammary carcinoma. In addition to the breast cancer stages, stages 0 to IV, the higher the stage is and the older you are, the bigger the stage will be. Hasan Sadikin Hospital is the first referral hospital for breast cancer patients in West Java. Therefore, the authors are interested in conducting research on the characteristics of mammary cancer patients at Hasan Sadikin Hospital Bandung, based on their age and the cancer stage.

METHOD AND SUBJECT

This is a descriptive study that aims to determine the description of breast cancer patients at Hasan Sadikin Hospital, Bandung, based on the patients' age and the cancer stage. in the Oncology Surgery Department of Hasan Sadikin Hospital Bandung, the data of patients with breast cancer were recorded. The inclusion criteria for this study were patients diagnosed with invasive and non-invasive breast cancer whose age and disease stage were recorded. Meanwhile, the exclusion criteria for this study were all damaged and unreadable medical record data.

RESULT AND DISCUSSION

Based on the results of tracing medical record data in the Surgical Oncology Department of Hasan Sadikin Hospital Bandung, during period of January-December 2018, there were 414 breast cancer cases. The number of cases of breast cancer based on Siahaan's research at Hasan Sadikin Hospital Bandung reached 347 cases during 2003-2008, decreased to 275 in 2009, increased in 2012 to 492 cases, and reduced by 265 cases in 2017.[16] This is in line with the Global Cancer Project (GLOBOCAN 2012) in research conducted by Mahshid Ghoncheh in 2012 entitled "Incidence and Mortality and Epidemiology of Breast Cancer in the World", there was an increase in breast cancer cases from 521,907 to 1,671,149 cases worldwide in 2012; this was caused by a lack of self-awareness, treatment programs and education that were not constant.[17]

The number of breast cancer cases based on the patients' age was the highest in the age group of 36-50 years, with 218 cases (52.7%) of the total 414 cases. The number of breast cancer cases by age is shown in Table 1 below:

Table 1 Number of Breast cancer Cases by Age

Age	Amount	Percent
21-35 year	52	12,6
36-50 year	218	52,7
>50 year	144	34,8
Total	414	100,0

Several factors can be associated with the occurrence of mammary carcinoma, for example, age, menarche before 12 years old, and late menopause at age > 55 years. The increase in risk factors is related to the length of time exposed to reproductive hormones. The incidence of breast cancer increases with age. Age is the most influential risk factor for developing mammary carcinoma. The older you are, the higher the risk of mammary carcinoma,[14] and the age that is closely related to an increased incidence of breast cancer is over 50 years. The results of research at H. Adam Malik General Hospital in Medan in 2009 showed that age is a risk factor for breast cancer in women, women over the age of 35 have a higher risk of developing the disease.[18]

The results of this study are in line with those of Astuti's research at RSUD Dr. H.Abdul Moeloek Bandar Lampung in 2017, showing that 92.2% of women over 30 had mammary carcinoma, which was significantly higher compared to 7.5% of women under 30.[19] The results of this study were also almost the same as those conducted by Dian at Denpasar Central General Hospital in 2012, resulted in 119 respondents who were diagnosed with breast cancer under 40 years old were 22.7%, aged 40 to 50 years were 45.2%, and aged 51 to 60 were 21.4%.[20] This was supported by the other research conducted by Diahpradanya, et al., at the Oncology Surgical Subdivision of Sanglah Central General Hospital in 2014 – 2016. They found that the percentage of patients aged under 25 years was 4.1%, the percentage of patients aged 25-29 years was slightly higher at 7%, whereas the percentage of patients aged 30-34 years was 41.7%, and the percentage of patients aged 35-39 years was the highest at 47.2% .[21] Other confirming studies conducted by Akbar in 2016 at Karyadi Hospital in Semarang, revealed that those aged below 40 years made 16.6%, compared to 83.4% of those aged over 40 [18] In a study at the Department of Surgical Oncology Hangzhou Hospital in China conducted by Chen in 2016, it was shown that the percentage of patients at the age of less than 40 years was 6.4%, and the age of 50-59 years was 26.4%. [22-24]

At the age of 40, changes begin to occur in the menstrual cycle due to changing hormone levels before menopause.[25,26] In women over 40, particularly those who are in their reproductive period, menstruation occurs every month, but ovulation does not happen due to decreased quality and quantity of egg cells.[27] Therefore, the amount of progesterone produced is not sufficient to counteract the estrogen hormone, which is a trigger for mammary carcinoma.[28]

In this study, samples were taken based on exclusion and inclusion criteria in the medical records. Furthermore, interview observations were carried out involving several patients in the Oncology Department of RSHS Bandung. The majority of the outpatients in the Oncology Department of RSHS Bandung were between 35 and 50 years old. This is in accordance with the results of the 2009-2013 SEER (Surveillance, Epidemiology, and End Results) program conducted by the NCI (National Cancer Institute) for the number of breast cancer patients aged 20-34 years (1.8%), 35-44 years (8.9%), 45-54 years (21.3%), 55-64 years (25.7%), 65-74 years (22.6%), 75-84 years (14%), and over 84 years (5.7%). The incidence of breast cancer increases with age.[26]

The stage of the highest number of breast cancer cases was stage III B with 170 cases (41.1%) The number of breast cancer cases by its stages can be seen in Table 2 below :

Table 2 Number of Breast cancer Cases by Stage

Stage	Amount	Percent
I	25	6,0
II A	20	4,8
II B	54	13,0
III A	25	6,0
III B	170	41,1
III C	23	5,6
IV	97	23,4
Total	414	100,0

The majority of breast cancer cases occur in stage III B, this is probably due to a lack of knowledge regarding early detection of breast cancer, which causes patients to delay hospital examinations. In stage IIIB, the tumor is T4 in size and can directly extend into the chest wall. Tumors that (metastasized) spread to lymph nodes (N) can be classified as N0 (no metastases in regional lymph nodes), N1 (metastases in mobile ipsilateral axillary lymph nodes), N2 (metastases in fixed ipsilateral axillary lymph nodes), and no distant metastases (M0).[29]

The findings of this study are in line with those of Arsittasari's research at Yogyakarta City Hospital in 2016, the results in stage I were 12.8%, in stage II were 28.7%, and in stage III were 53.2%.[30] They were also consistent with previous studies carried out by Putu Diahpradnya et al. at Sanglah Central General Hospital in 2014-2016, which was based on the following stages: stage I at 1.4%, stage IIA at 13.9%, stage IIB at 12.5%, stage IIIA at 16.7%, stage IIIB at 26.4%, stage IIIC at 2.8%, and stage IV at 26.4%.[21] Other research that is in line with this research is

conducted by Margaretha at Adam Malik Hajj Center General Hospital in 2014-2016, which showed that on stage 0 at 2.1%, stage IIA 1 at 1%, stage IIB at 14.7%, stage IIIA at 6.3%, stage IIIB at 44.2%, stage IIIC at 3.2%, and stage IV at 28.4%.[31] In addition, there are other findings that are consistent with the present study, Indrati's research at Kariadi Doctor's Hospital in Semarang in 2005, which stated that most cases were found in stage III (46.2%).

A lack of information and awareness regarding early detection, as well as patients delays in seeking treatment, are the main causes for the high proportion in stage III cancer. The average age of the respondents was comparable between the case group and the control group.[32] This study is in accordance with the research that was conducted at RSHS Bandung.

In accordance with the data above, more mammary carcinomas are found in stage III, which are characterized by symptoms such as the lump size bigger than 5 cm with pain, nipple retraction, changes on the breast skin resembling an orange peel, and redness. While in stages I and II, the size of the lump is still small, between 0.5 and 1 cm, so a person cannot feel the signs and symptoms like in stage III due to a lack of self-awareness; consequently breast cancer will expand (grow) and spread over time.

In addition, because RSHS Bandung is a referral hospital in West Java, breast cancer patients will be referred to this hospital. However, at the time of referral, the majority of patients are in an advanced stage of the cancer and require further therapy which cannot be performed at regional hospitals.

CONCLUSION

The Oncology Surgery Department of Hasan Sadikin Hospital Bandung recorded 414 cases of breast cancer between January and December 2018. 52.7% of the cases were mostly found in the the age group of 36-50 years old.The most common stage of breast cancer in the oncology surgery department at Hasan Sadikin Hospital Bandung in January-December 2018 was stage III B (41.1%).

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DECLARATION OF INTEREST

In this study the authors stated that there was no conflict of interest.

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