

CLINICOPATHOLOGICAL CHARACTERISTICS OF BREAST CARCINOMA AT RSUD SAYANG CIANJUR, WEST JAVA, 2022-2024

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ABSTRACT

Breast cancer is the most common malignancy in women and remains the leading cause of cancer-related mortality in Indonesia. As a referral hospital in West Java, RSUD Sayang Cianjur plays an essential role in the diagnosis and management of breast cancer. This study aims to describe the clinicopathological characteristics of breast carcinoma cases at RSUD Sayang Cianjur from January 2022 to December 2024. This research employed a retrospective descriptive design with total sampling using medical records and histopathological reports of patients diagnosed with breast carcinoma. Most patients were aged 55-64 years (34.0%), with tumors more frequently located in the left breast (55.9%). Mastectomy was the most common surgical procedure (83.3%), followed by excision biopsy (15.9%). Based on tumor staging, most cases were T1 (54.9%), while N1 was the most frequent lymph node stage (54.5%). The most common histopathological type was invasive carcinoma of no special type (NST), whereas lobular carcinoma accounted for 13.9% of cases. Grade 2 tumors were most prevalent (50.7%), followed by grade 3 (46.3%). Lymphovascular invasion was the most frequent invasive feature (41.0%), followed by fat invasion (25.0%), skin invasion (12.5%), lymph node invasion (7.6%), and perineural invasion (2.8%). In conclusion, breast carcinoma cases at RSUD Sayang Cianjur predominantly occurred in middle-aged to elderly women, with left-sided tumors, NST-type histopathology, and moderate to high histological grades.

Keywords: Breast Cancer, Clinicopathological Characteristics, Carcinoma.

INTRODUCTION

Breast cancer is the most common cancer in women worldwide and remains one of the leading causes of cancer mortality. In 2020, breast cancer surpassed lung cancer as the most frequently diagnosed malignancy, with approximately 2.3 million new cases and 685,000 deaths globally (Muchtari M, Halimah E, Megantara S, Wathoni N, 2021).

In Indonesia, breast cancer also ranks as the cancer with the highest incidence among women and is the leading cause of cancer-related death, accounting for 16.7% or approximately 58,256 cases based on GLOBOCAN 2018 data (Sung H, Ferlay J, Siegel RL, et al, 2021). More than half of newly diagnosed patients present at advanced stages, highlighting delays in detection and potential inadequacies in screening

programs Nindrea RD, Dwiprahasto I, Lazuardi L, Aryandono T, 2023). The rising burden of breast cancer is associated with increasing exposure to risk factors influenced by socioeconomic changes. Relevant risk factors in Indonesia include age at menopause, age at first pregnancy, family history (first- and second-degree relatives), oral contraceptive use, smoking, overweight and obesity, high-fat/high-calorie diet, and low physical activity Nindrea RD, Dwiprahasto I, Lazuardi L, Aryandono T, 2023).

As a referral hospital within the Bogor region, RSUD Sayang Cianjur plays a crucial role in managing breast cancer cases in West Java. However, detailed documentation of the clinicopathological characteristics of patients at this facility remains limited. This study aims to analyze the clinicopathological profile of breast cancer patients at RSUD Sayang Cianjur during 2022-2024 to provide essential data that may improve regional diagnostic and treatment strategies.

LITERATURE REVIEW

Breast cancer tumors are divided into subtypes according to aforementioned factors, defined by routine histology and IHC (the 2015 St Gallen Consensus Conference). This classification is very important for prognosis and treatment

decisions (1,6). Luminal-A is the most common subtype and represents 50-60% of all breast cancer cases. This subtype is defined as ER-positive and/or PR-positive tumors with a negative HER2 and low Ki67 (proliferating cell nuclear antigen) index, assessed by immunohistochemistry. Patients with luminal-A breast cancer have a good prognosis and the relapse rate is significantly lower compared with that for other subtypes (Huszno, 2019).

RESEARCH METHODS

This study used a descriptive-analytic design with total sampling, utilizing secondary data from the medical records of patients treated at RSUD Sayang Cianjur between January 2022 and December 2024. Data were collected from 144 female patients diagnosed with primary breast carcinoma. Variables analyzed included age, laterality, histopathological type, histological grade, lymph node status, lymphovascular invasion, and fat tissue invasion. Descriptive analysis was performed, and results were presented as frequency tables and percentages. Ethical approval for this study was obtained from RSUD Sayang Cianjur (No. B/000.9/67/RSUDSayang/05/2025). All patient data were anonymized in accordance with the principles of the Declaration of Helsinki.

RESEARCH RESULTS

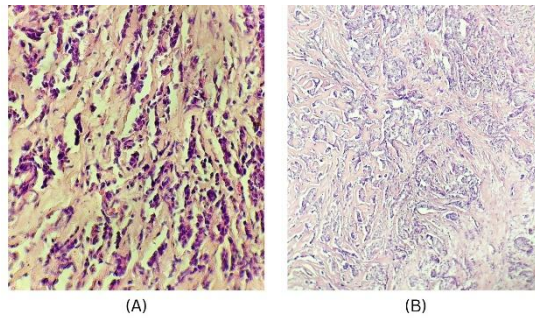
Table 1. Clinicopathological Characteristics of Breast Carcinoma at RSUD Sayang Cianjur, 2022-2024

<i>Characteristics</i>	<i>n = 144 %</i>
<i>Age (years)</i>	
<35	7 (4.9)
35-44	17 (11.8)

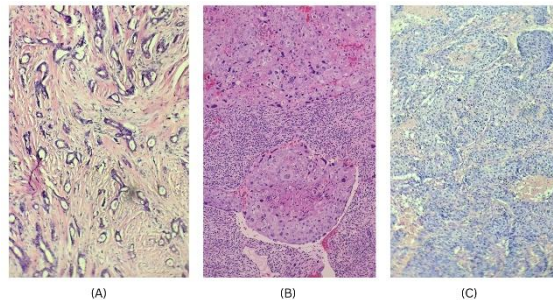
45-54	40 (27.8)
55-64	49 (34.0)
>64	31 (21.5)
<i>Laterality</i>	
<i>Sinistra</i>	80 (55.9)
<i>Dextra</i>	61 (42.4)
<i>Bilateral</i>	3 (2.1)
<i>Type of Surgery</i>	
<i>Mastectomy</i>	120 (83.3)
<i>Core Biopsy</i>	1 (0.7)
<i>Excision Biopsy</i>	23 (15.9)
<i>Tumor (T) Stage</i>	
T1	79 (54.9)
T2	37 (25.7)
T3	14 (9.7)
T4	14 (9.7)
<i>Lymph Node (N) Stage</i>	
N1	6 (54.5)
N2	2 (18.2)
N3	3 (27.3)
<i>Histopathological Type</i>	
<i>Invasive carcinoma of no special type (NST)</i>	
<i>Lobular carcinoma</i>	20 (13.9)
<i>Mixed / Metaplastic / Medullary/ Tubular carcinoma</i>	8 (5.6)
<i>Others</i>	8 (5.6)
<i>Histological Grade</i>	
<i>Grade 2</i>	73 (50.7)
<i>Grade 3</i>	63 (43.8)
<i>No data</i>	8 (5.6)
<i>Tissue Invasion</i>	
<i>Lymphovascular</i>	59 (41.0)
<i>Fat</i>	36 (25.0)
<i>Skin</i>	18 (12.5)
<i>Lymph Node</i>	11 (7.6)
<i>Perineural</i>	4 (2.8)

A total of 144 cases of breast carcinoma were identified from 2022 to 2024. Patient age ranged from 27 to 90 years, with a mean age of 52.4 years and a median age of 52 years. The highest proportion of cases occurred in patients aged 55-64 years (34.0%), followed by those

aged 45-54 years (27.8%) and >64 years (21.5%). Patients aged <35 years represented only 4.9% of cases, indicating that breast carcinoma in this cohort primarily occurred in middle-aged to elderly women.



Picture 1. Histopathological Image Of Breast Carcinoma At Sayang Cianjur Regional Hospital. (A).*Lobular Carcinoma* (HE, 40x), (B)*Invasive Carcinoma Of No Special Type* (HE, 100x).



Picture 2. Histopathological Image Of Breast Carcinoma At Sayang Cianjur Regional Hospital. (A) *Tubular Carcinoma*, (B) *Metaplastic Carcinoma*, (C) *Medullary Carcinoma*.

Tumor laterality analysis revealed that 55.9% of tumors occurred in the left breast, 42.4% in the right breast, and 2.1% were bilateral. Regarding surgical management, mastectomy was performed in 83.3% of cases, reflecting the tendency for patients to present with advanced or large tumors requiring radical surgery. Excision biopsy accounted for 15.9% of procedures, while core biopsy was performed in only one patient (0.7%).

For tumor staging, T1 was the most common stage (54.9%), followed by T2 (25.7%), while T3 and T4 each accounted for 9.7%. Lymph node staging showed N1 as the predominant stage (54.5%). Histopathological examination identified invasive carcinoma of no special type (NST) as the most common subtype, consistent with global and national

data. Lobular carcinoma was observed in 13.9% of cases. Rare types—including mixed, metaplastic, medullary, and tubular carcinoma—each accounted for 5.6% of cases.

Histological grading revealed a predominance of grade 2 tumors (50.7%), followed by grade 3 tumors (43.8%). Eight cases lacked grading data. The considerable proportion of high-grade tumors suggests a significant presence of poorly differentiated malignancies. Assessment of tissue invasion showed lymphovascular invasion (LVI) in 41.0% of cases, fat invasion in 25.0%, skin invasion in 12.5%, lymph node invasion in 7.6%, and perineural invasion in 2.8%. These findings indicate aggressive tumor behavior in a substantial proportion of patients.

DISCUSSION

The mean patient age in this study (51.12 years) and the predominance of the 55-64 age group are consistent with findings from other Indonesian studies reporting peak incidence in the fifth to sixth decade of life. However, breast cancer in young women (<40 years) remains a concern, with earlier studies showing 16.7% prevalence in Medan.⁵ Younger patients frequently present with more aggressive tumor biology, such as high-grade tumors or advanced stages.

Tumor laterality showed a predominance of left-sided breast cancer, aligned with findings from Yogyakarta and other Indonesian regions (MA Putri A, Tejo J, Probawati W, W Siagian J, 2022). Invasive carcinoma NST was the most prevalent histological subtype (75.0%), similar to findings from national studies including those from Kariadi Hospital (68.18%)⁶ and Cibabat Hospital (75%) (Rachmawati M, Acang N, Purbaningsih W, et al, 2024).

Histological grading demonstrated a high proportion of grade 3 tumors (46.3%), consistent with reports from Cibabat Hospital (44.8%). High-grade tumors are associated with rapid growth, poor differentiation, and more aggressive clinical behavior (Siregar KB, Al Anas M, 2023).

Although T1 was the most common T stage in this study, broader data from Indonesia indicate that more than 70% of breast cancer patients nationwide present with advanced-stage disease. Lymphovascular invasion (LVI), observed in 41.0% of patients, is a well-established prognostic factor for lymph node metastasis and distant spread. Previous studies have reported an eight-fold increased risk of axillary lymph node involvement

in the presence of LVI. Positive axillary lymph node involvement (7.6%) is a key predictor of metastasis and accounts for more than 90% of breast cancer-related deaths. Socio-demographic disparities—including lower education level and residence outside Java and Bali—are associated with delayed diagnosis and advanced stage at presentation.

The pathological report should include the histological type, grade, immunohistochemical (IHC) evaluation of estrogen receptor (ER) status (using a standardized assessment methodology, e.g., Allred or H-score), and progesterone receptor (PR) and human epidermal growth factor 2 receptor (HER2) gene expression. HER2 gene amplification status may be determined directly from all invasive tumors using in situ hybridization (fluorescent, chromogenic or silver), either as a replacement for IHC or for tumors with an ambiguous (2+) IHC score (4). Proliferation markers such as Ki67 should also be assessed (Li, C. I., Uribe, D. A., & Daling, J. R, 2005).

CONCLUSION

The clinicopathological characteristics of breast carcinoma cases at RSUD Sayang Cianjur from 2022 to 2024 are consistent with national and regional trends. The majority of patients were aged 55-64 years, with left breast involvement being more common. Invasive carcinoma NST was the most frequent histological subtype, with most tumors classified as grade 2 or grade 3. Although many tumors were staged as T1, the high prevalence of lymphovascular and other tissue invasions indicates aggressive tumor behavior and significant metastatic risk. This clinicopathological profile

provides essential local epidemiological data for evaluating disease patterns, planning healthcare resource allocation, and developing management protocols tailored to the population of Cianjur and surrounding regions.

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