

## INTISARI

**Latar Belakang :** Kanker payudara merupakan keganasan yang paling sering terjadi pada wanita dan bersifat heterogen pada tingkat molekuler. *Human Epidermal Growth Factor Receptor 2* (HER2) berperan penting dalam agresivitas kanker payudara. Berdasarkan ekspresi HER2, kanker payudara dibagi menjadi tiga subtipe, yaitu HER2-positif, HER2-low, dan HER2-negatif, yang memiliki implikasi berbeda terhadap terapi maupun prognosis. Identifikasi perbedaan karakteristik klinikopatologi ini diharapkan dapat memberikan informasi penting dalam menentukan prognosis dan pilihan terapi yang lebih tepat bagi pasien.

**Tujuan:** Menganalisis dan membandingkan perbedaan gambaran klinikopatologi meliputi ukuran tumor (T), *lymph node involvement* (N), *lymphovascular invasion* (LVI), dan *tumor grade* antara pasien kanker payudara primer subtipe HER2-positif, HER2-low, dan HER2-negatif maupun Skor IHK 3+, IHK 2+, IHK 1+, dan IHK 0 di RSUP Dr. Sardjito Yogyakarta.

**Metode:** Penelitian ini merupakan observasional analitik dengan pendekatan kuantitatif dan desain penelitian *cross-sectional*. Penelitian ini menggunakan data sekunder yang berasal dari rekam medis pasien kanker payudara primer di RSUP Dr. Sardjito Yogyakarta periode 2020–2025. Analisis data dilakukan menggunakan uji *chi-square*.

**Hasil:** Analisis berdasarkan subtipe HER2 menunjukkan tidak terdapat perbedaan yang signifikan antara subtipe HER2 terhadap ukuran tumor (T) ( $p=0,174$ ), *lymph node involvement* (N) ( $p=0,563$ ), dan *lymphovascular invasion* (LVI) ( $p=0,495$ ). Namun, terdapat perbedaan signifikan pada variabel *tumor grade* ( $p=0,033$ ), dengan proporsi *tumor grade* 3 lebih dominan pada subtipe HER2-positif dibandingkan HER2-low dan HER2-negatif. Analisis tambahan berdasarkan skor IHK HER2 juga menunjukkan tidak terdapat perbedaan yang signifikan antara skor IHK HER2 terhadap ukuran tumor (T) ( $p=0,286$ ), *lymph node involvement* (N) ( $p=0,347$ ), dan *lymphovascular invasion* (LVI) ( $p=0,451$ ). Namun, terdapat perbedaan signifikan pada variabel *tumor grade* ( $p=0,045$ ), dengan proporsi *tumor grade* 3 lebih dominan pada skor IHK 3+ dibandingkan IHK 2+, IHK 1+, dan IHK 0.

**Kesimpulan:** Analisis terhadap karakteristik klinikopatologi pasien kanker payudara primer menunjukkan bahwa terdapat perbedaan

signifikan pada variabel *tumor grade* antara sub tipe HER2-positif, HER2-low, dan HER2-negatif. Sementara itu, variabel ukuran tumor (T), *lymph node involvement* (N), dan *lymphovascular invasion* (LVI) tidak menunjukkan perbedaan yang signifikan di antara ketiga sub tipe tersebut. Selain itu, analisis berdasarkan skor IHK 3+, IHK 2+, IHK 1+, dan IHK 0 juga menunjukkan perbedaan yang signifikan hanya pada variabel *tumor grade*, sedangkan ukuran tumor (T), *lymph node involvement* (N), dan *lymphovascular invasion* (LVI) tidak memperlihatkan perbedaan yang signifikan.

**Kata kunci:** Kanker payudara, *Human Epidermal Growth Factor Receptor 2* (HER2), HER2-low, Gambaran klinikopatologi, Sub tipe molekuler.

## ABSTRACT

- Background:** Breast cancer is the most common malignancy in women and exhibits molecular heterogeneity. Human Epidermal Growth Factor Receptor 2 (HER2) plays a critical role in breast cancer aggressiveness. Based on HER2 expression, breast cancer can be classified into three subtypes: HER2-positive, HER2-low, and HER2-negative, each with distinct therapeutic and prognostic implications. The identification of these clinicopathological differences is expected to provide important information in determining prognosis and guiding more appropriate therapeutic choices for patients.
- Objective:** To analyze and compare clinicopathological features including tumor size (T), lymph node involvement (N), lymphovascular invasion (LVI), and tumor grade among primary breast cancer patients with HER2-positive, HER2-low, and HER2-negative subtypes, as well as HER2 immunohistochemistry (IHC) scores (3+, 2+, 1+, 0) at Dr. Sardjito General Hospital, Yogyakarta.
- Methods:** This was an observational analytic study with a quantitative approach and a cross-sectional design. Secondary data were collected from medical records of primary breast cancer patients at Dr. Sardjito General Hospital during the period 2020–2025. Data were analyzed using the chi-square test.
- Result:** Analysis based on HER2 subtypes demonstrated no statistically significant differences among HER2 subtypes with respect to tumor size (T) ( $p=0.174$ ), lymph node involvement (N) ( $p=0.563$ ), and lymphovascular invasion (LVI) ( $p=0.495$ ). However, a significant association was observed with tumor grade ( $p=0.033$ ), where grade 3 tumors were more frequently observed in the HER2-positive subtype compared to HER2-low and HER2-negative subtypes. Further analysis based on HER2 immunohistochemistry (IHC) scores revealed no significant correlation between HER2 IHC scores and tumor size (T) ( $p=0.286$ ), lymph node involvement (N) ( $p=0.347$ ), or lymphovascular invasion (LVI) ( $p=0.451$ ). Nonetheless, a significant association was identified with tumor grade ( $p=0.045$ ), showing that grade 3 tumors were predominantly found in cases with IHC 3+ compared to IHC 2+, IHC 1+, and IHC 0.
- Conclusion:** The analysis of clinicopathological characteristics in primary breast cancer patients revealed a significant association between tumor grade and HER2 expression subtypes, including HER2-

positive, HER2-low, and HER2-negative groups. In contrast, no significant differences were observed for tumor size (T), lymph node involvement (N), or lymphovascular invasion (LVI) among these subtypes. Furthermore, evaluation based on HER2 IHC scores (3+, 2+, 1+, and 0) showed that only tumor grade differed significantly, while tumor size (T), lymph node involvement (N), and lymphovascular invasion (LVI) remained comparable across the groups.

**Keywords:** Breast cancer, Human epidermal growth factor receptor 2 (HER2), HER2-low Clinicopathological features, Molecular subtypes.