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**Hubungan antara Ekspresi HER2 dan Reseptor Estrogen pada Pasien Kanker Payudara Stadium Awal dan
Lanjut Lokal dengan Disease Free Survival di RSUP Dr. Sardjito**
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ABSTRAK

Latar Belakang: Kanker payudara merupakan keganasan dengan insidensi nomor dua dan mortalitas nomor empat di seluruh dunia. Ekspresi *human epidermal growth factor receptor*-2 (HER2) berperan penting dalam menentukan agresifitas tumor, prognosis, dan strategi terapi kanker payudara. Reseptor estrogen (ER) memiliki hubungan *bi-directional crosstalk* dengan HER2 yang mempengaruhi resistensi terapi. Data *disease-free survival* (DFS) berdasarkan ekspresi HER2, ER, dan hubungan keduanya di RSUP Dr. Sardjito masih terbatas.

Tujuan: Mengetahui hubungan ekspresi HER2 terhadap DFS, hubungan antara ekspresi ER dan HER2, serta pengaruh kombinasi ekspresi ER dan HER2 terhadap DFS pada pasien kanker payudara stadium awal dan lanjut lokal di RSUP Dr. Sardjito.

Metode: Penelitian kohort retrospektif pada 150 pasien kanker payudara stadium awal dan lanjut lokal di RSUP Dr. Sardjito periode Januari 2017–Desember 2021. Analisis statistik menggunakan uji *chi-square*, kurva Kaplan-Meier, dan *Cox regression.*

Hasil: Ekspresi HER2 berhubungan signifikan dengan DFS (p=0,039). Terdapat hubungan bermakna antara ekspresi ER dan HER2 (χ^2=13,036; p=0,005) dengan kekuatan hubungan moderat (Cramer's V=0,295). Analisis kombinasi menunjukkan kelompok ER negatif + HER2 positif memiliki DFS yang secara bermakna lebih pendek dibandingkan kelompok ER negatif + HER2 negatif (median 73 vs 90 bulan; p=0,017).

Kesimpulan: Peningkatan ekspresi HER2 berhubungan dengan penurunan DFS pada pasien kanker payudara stadium awal dan lanjut lokal di RSUP Dr. Sardjito. Ekspresi ER berhubungan dengan HER2, dan fenotip ER negatif + HER2 positif dikaitkan dengan DFS yang lebih buruk.

Kata kunci: Kanker payudara, HER2, reseptor estrogen, *disease-free survival*

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ABSTRACT

Background: *Breast cancer remains one of the most common malignancies worldwide and continues to contribute substantially to cancer-related mortality, including in Indonesia. Human epidermal growth factor receptor-2 (HER2) expression plays an important role in tumor aggressiveness, prognosis, and therapeutic approach in breast cancer. Estrogen Receptor has bi-directional crosstalk with HER2 and its implication is therapeutic resistance. However, data regarding disease-free survival based on HER2, ER, and their relationship at Dr. Sardjito General Hospital are still limited.*

Objective: *To evaluate the association between HER2 expression and DFS, the relationship between ER and HER2 expression, and the impact of combined ER and HER2 expression on DFS in patients with early-stage and locally advanced breast cancer at Dr. Sardjito General Hospital.*

Methods: *A retrospective cohort study was conducted on 150 patients with early-stage and locally advanced breast cancer at Dr. Sardjito General Hospital from January 2017 to December 2021. Statistical analyses included chi-square test, Kaplan-Meier survival analysis, and Cox regression.*

Results: *HER2 expression was significantly associated with DFS ($p=0.039$). A significant association was found between ER and HER2 expression ($\chi^2=13.036$; $p=0.005$) with moderate strength (Cramer's $V=0.295$). Combined analysis demonstrated that the ER-negative/HER2-positive group had significantly shorter DFS compared to the ER-negative/HER2-negative group (median 73 vs. 90 months; $p=0.017$)*

Conclusion: *This study demonstrated that higher HER2 expression is have reduced DFS in patients with early-stage and locally advanced breast cancer at Dr. Sardjito General Hospital. ER expression is significantly associated with HER2 expression, with a moderate correlation. The ER-negative/HER2-positive phenotype is associated with poorer DFS.*

Keywords: *Breast cancer, HER2, recurrence, metastasis, disease free survival.*