

ABSTRACT

Background: Platelet to Lymphocyte Ratio (PLR) was one of the easily accessible and low-cost systemic inflammation parameters. PLR had been used as an indicator of chemotherapy response in breast cancer patients. A decrease in PLR after chemotherapy indicated an immunological and hematological response to the treatment administered.

Objective: This study aimed to determine the difference in PLR values before and after chemotherapy in breast cancer patients.

Methods: This research was a descriptive-analytic study with a retrospective observational design. Secondary data were obtained from the medical records of breast cancer patients who underwent chemotherapy between January 2021 and April 2025 at PKU Muhammadiyah Hospital, Yogyakarta. A total sampling technique was used to collect 53 samples. Platelet and lymphocyte values before and after chemotherapy were used to calculate the PLR, and the data were analyzed using the Wilcoxon Signed-Rank test.

Results: The normality test showed that the data were not normally distributed, with a p-value < 0.05 for PLR values before and after chemotherapy. The Wilcoxon Signed-Rank test showed that 39 patients (73.6%) experienced a decrease in PLR, with a Z value = -3.935 and a significance level of $p = 0.000$ ($p < 0.05$). These results indicated a significant difference in PLR values before and after chemotherapy.

Conclusion: There was a statistically significant difference in PLR values before and after chemotherapy in breast cancer patients.

Keywords: Platelet to Lymphocyte Ratio (PLR), Breast Cancer, Chemotherapy.

ABSTRAK

Latar Belakang : *Platelet to Lymphocyte Ratio* (PLR) merupakan salah satu parameter inflamasi sistemik yang mudah diakses dan berbiaya rendah. *Platelet to Lymphocyte Ratio* (PLR) digunakan sebagai indikator respon terhadap kemoterapi pada pasien kanker payudara. Penurunan PLR setelah kemoterapi menunjukkan respons imunologis dan hematologis terhadap terapi yang diberikan.

Tujuan : Penelitian ini bertujuan untuk mengetahui perbedaan nilai *Platelet to Lymphocyte Ratio* (PLR))sebelum dan sesudah kemoterapi pada pasien kanker payudara.

Metode : Jenis penelitian ini adalah **deskriptif analitik dengan desain observasional retrospektif**. Data sekunder diperoleh dari rekam medis pasien kanker payudara yang menjalani kemoterapi pada periode Januari 2021 hingga April 2025 di RS PKU Muhammadiyah Kota Yogyakarta. Teknik total sampling digunakan dalam pengambilan data sebanyak 53 sampel. Data nilai trombosit dan limfosit sebelum dan sesudah kemoterapi digunakan untuk menghitung *Platelet to Lymphocyte Ratio* (PLR), dan dianalisis menggunakan uji *Wilcoxon signed-rank test*.

Hasil : Berdasarkan hasil uji normalitas didapatkan data tidak berdistribusi normal dengan nilai *p value* pemeriksaan PLR sebelum dan sesudah kemoterapi adalah $< 0,05$. Hasil uji *Wilcoxon Signed-Rank* menunjukkan bahwa 39 pasien (73,6%) mengalami penurunan nilai PLR, dengan nilai $Z = -3,935$ dan $\text{sig } p = 0,000$ ($p < 0,05$). Hasil ini menunjukkan bahwa terdapat perbedaan yang signifikan antara nilai PLR sebelum dan sesudah kemoterapi.

Kesimpulan : Terdapat perbedaan yang signifikan antara nilai PLR sebelum dan sesudah kemoterapi.

Kata Kunci : *Platelet to Lymphocyte Ratio* (PLR), Kanker payudara, Kemoterapi.