

Platelet to Lymphocyte Ratio (PLR) Value in Normotency, Preeclampsia and Severe Preeclampsia

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Abstract

Introduction: Hyperactivation of the inflammatory response in preeclampsia causes a significant increase in the number of leukocytes. Platelet to Lymphocyte Ratio (PLR) has been known as a marker of systemic inflammatory response. This study aims to analyze differences in platelet to lymphocyte ratio (PLR) values in normotensive, preeclampsia, and severe preeclampsia pregnancies

Methods: Analytical observational study with cross sectional design with 90 samples consisting of 30 normotensive pregnancies, 30 preeclampsia and 30 severe preeclampsia. Evaluation is carried out on the platelet to lymphocyte ratio (PLR) value. Analysis was carried out using the SPSS 32 edition application. Results are significant if $p < 0.05$.

Results: Comparison between the normotensive group versus preeclampsia versus severe preeclampsia showed that platelet levels decreased but not significantly ($p = 0.081$), lymphocyte levels increased significantly ($p < 0.001$) and PLR values decreased significantly ($p < 0.001$) as the degree of severity increased preeclampsia. In the severe preeclampsia group, the lowest platelet levels, the highest lymphocyte levels and the lowest PLR values were obtained. Patients with a PLR value < 104.62 have an 8.43x (OR 8.43; CI95% 3.12-22.78) higher risk of experiencing severe preeclampsia compared to subjects with a PLR value > 104.62 .

Conclusion: The PLR value was significantly lowest in the severe preeclampsia group.

Keywords: *Preeclampsia, severe preeclampsia, platelet to lymphocyte ratio*

Abstrak

Pendahuluan: Hiperaktivasi respon inflamasi pada preeklampsia menyebabkan peningkatan jumlah leukosit yang signifikan. *Platelet to Lymphocyte Ratio* (PLR) telah dikenal sebagai marker respon inflamasi sistemik. Penelitian ini bertujuan untuk menganalisis perbedaan nilai *platelet to lymphocyte ratio* (PLR) pada kehamilan normotensi, preeklampsia dan preeklampsia berat.

Metode: Penelitian observasional analitik desain *cross sectional* dengan 90 sampel terdiri dari 30 kehamilan normotensi, 30 preeklampsia dan 30 preeklampsia berat. Evaluasi dilakukan pada nilai *platelet to lymphocyte ratio* (PLR). Analisis dilakukan menggunakan aplikasi SPSS edisi 32. Hasil signifikan apabila $p < 0.05$.

Hasil: Perbandingan antara kelompok normotensi dibandingkan preeklampsia dibandingkan preeklampsia berat maka kadar trombosit mengalami penurunan namun tidak signifikan ($p = 0.081$), kadar limfosit mengalami kenaikan signifikan ($p < 0.001$) dan nilai PLR mengalami penurunan signifikan ($p < 0.001$) seiring peningkatan derajat keparahan preeklampsia. Pada kelompok preeklampsia berat didapatkan kadar trombosit terendah, kadar limfosit tertinggi dan nilai PLR terendah. Pasien dengan nilai $PLR < 104.62$ memiliki resiko 8.43x (OR 8.43; CI95% 3.12-22.78) lebih tinggi untuk mengalami PEB dibandingkan subjek dengan nilai $PLR > 104.62$

Kesimpulan: Nilai PLR secara signifikan paling rendah didapatkan pada kelompok preeklampsia berat.

Kata kunci: *Preeklampsia, preeklampsia berat, platelet to lymphocyte ratio*