

INTISARI

KORELASI ZETA POTENSIAL ERITROSIT (FOTO SPEKTRUM DARAH EDTA) DENGAN LAJU ENDAP DARAH PADA PASIEN RHEUMATOID ARTRITIS RAWAT JALAN DI RSUP DR SARDJITO

Muhammad Syahirul Alim¹, Deddy Nurwachid A.², Heni Retnowulan³
PPDS Ilmu Penyakit Dalam¹, Subbagian Rheumatologi², Subbagian Pulmonologi³
Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan UGM/
RSUP Dr. Sardjito Yogyakarta

Latar Belakang: LED selama ini sering digunakan oleh para klinisi dalam menilai status inflamasi pasien Rheumatoid Arthritis, dimana secara teori ada kedekatan hubungan dengan zeta potensial eritrosit. Namun LED secara konvensional memerlukan waktu yang lama dalam pengukuran, dan telah dilaporkan nilai laboratorium terkadang tidak sesuai dengan klinis pasien. Faktor-faktor yang mempengaruhi zeta potensial eritrosit juga perlu diidentifikasi, sehingga harapannya akan berpotensi menjadi alternatif pemeriksaan baru yang mampu menjadi parameter inflamasi pada pasien Rheumatoid Arthritis.

Tujuan Penelitian: Menilai korelasi Zeta Potensial Eritrosit (Foto Spektrum Darah EDTA) dengan Laju Endap Darah pada pasien Rheumatoid Arthritis di RSUP dr. Sardjito.

Metode Penelitian: Penelitian ini menggunakan metode potong lintang (*cross sectional study*), berlangsung pada bulan Januari sampai dengan Agustus 2021 di Laboratorium Bioteknologi Pusat Antar Universitas (PAU), Instalasi Laboratorium Terpadu (ILT) dan Poli Rawat Jalan RSUP dr. Sardjito Yogyakarta. Subjek penelitian ini yaitu pasien RA dan dieksklusi jika mengalami inflamasi akut yang dipengaruhi faktor selain dari RA. Dilakukan pengambilan sampel darah untuk data berupa zeta potensial eritrosit, LED, CRP dan aktivitas lalu dilakukan analisis bivariat untuk menilai korelasi dan analisis multivariat untuk menilai variabel yang dominan berpengaruh.

Hasil Penelitian: Sejumlah 42 subyek penelitian telah dilakukan pengambilan sampel didapatkan rerata nilai laju absorbansi zeta potensial eritrosit $1,08 \pm 0,66$. Selanjutnya dilakukan analisis bivariat didapatkan nilai korelasi yang signifikan antara zeta potensial eritrosit dengan LED (nilai $r = 0,872$ dan $p < 0,001$). Selain zeta potensial eritrosit, variabel pengganggu CRP dan aktivitas penyakit juga berkorelasi signifikan terhadap LED. Sehingga dilakukan analisis multivariat dan hasilnya menunjukkan bahwa zeta potensial eritrosit lebih dominan mempengaruhi LED dibandingkan CRP dan aktivitas penyakit ($p < 0,001$; B 19,91; $R^2 = 0,911$).

Kesimpulan: Zeta potensial eritrosit berkorelasi positif secara bermakna terhadap LED pada pasien rheumatoid arthritis rawat jalan.

Kata kunci: Zeta Potensial Eritrosit, Rheumatoid Arthritis, Laju Endap Darah

ABSTRACT

CORRELATION ZETA POTENTIAL ERYTHROCYTE (EDTA BLOOD PHOTO SPECTRUM) WITH ERYTHROCYTE SEDIMENTATION RATE OF RHEUMATOID ARTRITIS PATIENT IN OUTSIDE CLINIC RSUP DR SARDJITO

Muhammad Syahirul Alim¹, Deddy Nur Wachid A.², Heni Retnowulan³
Resident of Internal Medicine¹, Rheumatology Division², Pulmonology Division³
Faculty of Medicine, Public Health and Nursing UGM/
RSUP Dr. Sardjito Yogyakarta

Background: ESR is often used by clinicians in assessing the inflammatory status of Rheumatoid Arthritis patients, where theoretically there is a close relationship with the zeta potential of erythrocytes. However, conventional ESR takes a long time to measure, and it has been reported that laboratory values sometimes do not match the clinical setting of the patient. Factors that affect the zeta potential of erythrocytes also need to be identified, so that it is hoped that it will potentially become a new alternative examination capable of being an inflammatory parameter in Rheumatoid Arthritis patients.

Objective: Assessing the correlation of Zeta Potential Erythrocytes (EDTA Blood Photo Spectrum) with Erythrocyte Sedimentation Rate in Rheumatoid Arthritis patients at RSUP dr. Sardjito.

Methods: This research uses a cross-sectional study, taking place from January to August 2021 at the Inter-University Central Biotechnology Laboratory (PAU), Integrated Laboratory Installation (ILT) and Outpatient Clinics RSUP dr. Sardjito Yogyakarta. The subjects of this study were RA patients and excluded if they had acute inflammation that was influenced by factors other than RA. Blood samples were taken for data in the form of zeta potential of erythrocytes, ESR, CRP and disease activity, then bivariate analysis was performed to assess correlation and multivariate analysis to assess dominant variables.

Results: A total of 42 research subjects were sampled and the mean value of the zeta potential absorbance rate of erythrocytes was 1.08 ± 0.66 . Furthermore, bivariate analysis was carried out to obtain a significant correlation value between the zeta potential of erythrocytes and ESR ($r = 0,872$ dan $p < 0,001$). In addition to the zeta potential of erythrocytes, CRP confounding variables and disease activity were also significantly correlated with ESR. So that a multivariate analysis was carried out and the results showed that the zeta potential of erythrocytes more dominantly affected ESR than CRP and disease activity ($p < 0,001$; B 19,91; $R^2 = 0,911$).

Conclusion: Zeta potential erythrocytes was significantly positively correlated with ESR in outpatient rheumatoid arthritis patients.

Kata kunci: *Zeta Potential Erythrocyte, Rheumatoid Arthritis, Erythrocyte Sedimentation Rate*