PERBEDAAN JUMLAH RETIKULOSIT PADA PASIEN GAGAL GINJAL KRONIK YANG DIPERIKSA SEGERA DAN SETELAH PENUNDAAN DI SUHU 2-8°C

Alya Agustina Aurelita[1], Zulfikar Husni Faruq[2], Evi Fitriany [3]
Jurusan Teknologi Laboratorium Medis, Poltekkes Kemenkes Yogyakarta, Jalan Ngadinegaran MJ 3 No. 62, Mantrijeron, Kota Yogyakarta, 55141
Email : alyaagustinabkl19@gmail.com

ABSTRAK

Latar belakang : Gagal ginjal kronik (GGK) merupakan penyakit kronis yang dapat memengaruhi stabilitas sel darah, termasuk retikulosit. Retikulosit sebagai indikator eritropoiesis masih mengandung RNA sehingga rentan mengalami degradasi selama penyimpanan sampel. Penundaan pemeriksaan dan kondisi uremik pada pasien GGK diduga dapat mempercepat penurunan jumlah retikulosit.
Tujuan penelitian: Mengetahui perbedaan jumlah retikulosit pada pasien gagal ginjal kronik yang diperiksa segera dan setelah penundaan 12 jam serta 24 jam pada suhu 2–8°C.
Metode Penelitian: Jenis penelitian ini semu kuasi eksperimental dengan pendekatan *one group repeated measures* pada sampel darah EDTA pasien GGK. Pemeriksaan retikulosit dilakukan segera, setelah penundaan 12 jam, dan penundaan 24 jam pada suhu 2–8°C. Data dianalisis secara deskriptif, uji Shapiro-Wilk, *Repeated Measures ANOVA*/Friedman, dan *allowable bias* (TEa).
Hasil Penelitian: Hasil penelitian menunjukkan adanya penurunan jumlah retikulosit seiring bertambahnya waktu penundaan pemeriksaan, yaitu dari 2,2% pada pemeriksaan segera menjadi 1,7% pada penundaan 12 jam dan 0,9% pada penundaan 24 jam. Persentase penurunan jumlah retikulosit sebesar 24,17% pada 12 jam dan 58,39% pada 24 jam. Secara statistik terdapat perbedaan yang signifikan ($p<0,05$) antara pemeriksaan segera, 12 jam, dan 24 jam. Berdasarkan analisis *Total Error Allowable* (TEa), perubahan tersebut telah melampaui batas bias yang dapat diterima secara klinis.
Kesimpulan: Sampel darah EDTA pasien gagal ginjal kronik yang disimpan pada suhu 2–8°C selama 12 jam dan 24 jam tidak disarankan digunakan kembali untuk pemeriksaan retikulosit.

Kata Kunci: *Retikulosit, gagal ginjal kronik, penundaan pemeriksaan, suhu 2–8°C*

DIFFERENCE IN RETICULOCYTE COUNT IN CHRONIC KIDNEY DISEASE PATIENTS EXAMINED IMMEDIATELY AND AFTER DELAY AT 2–8°C

Alya Agustina Aurelita[1], Zulfikar Husni Faruq[2], Evi Fitriany [3]
Department of Medical Laboratory Technology, Health Polytechnic of the Ministry of Health Yogyakarta, Jl. Ngadinegaran MJ 3 No. 62, Mantrijeron, Yogyakarta City, 55141, Indonesia

Email : alyaagustinabkl19@gmail.com

ABSTRACT

Introduction: Chronic kidney disease (CKD) is a chronic disease that can affect the stability of blood cells, including reticulocytes. Reticulocytes, as an indicator of erythropoiesis, still contain RNA and are therefore susceptible to degradation during sample storage. Delays in testing and uremic conditions in CKD patients are thought to accelerate the decline in reticulocyte count.
Objective: To determine the differences in reticulocyte counts in chronic kidney disease patients examined immediately and after delays of 12 hours and 24 hours at 2–8°C.
Methods: This study used a quasi-experimental design with a one group repeated measures approach on EDTA blood samples from CKD patients. Reticulocyte examinations were performed immediately, after a 12-hour delay, and after a 24-hour delay at 2–8°C. Data were analyzed descriptively using the Shapiro–Wilk test, followed by Repeated Measures ANOVA or the Friedman test, and allowable bias (Total Error Allowable/TEa) analysis.
Result: The results showed a decrease in the number of reticulocytes as the examination delay increased, from 2.2% in the immediate examination to 1.7% in the 12-hour delay and 0.9% in the 24-hour delay. The percentage decrease in the number of reticulocytes was 24.17% at 12 hours and 58.39% at 24 hours. Statistically, there was a significant difference ($p<0.05$) between the immediate, 12-hour, and 24-hour examinations. Based on the Total Error Allowable (TEa) analysis, this change has exceeded the clinically acceptable bias limit.
Conclusion: EDTA blood samples from chronic kidney disease patients stored at 2–8°C for 12 and 24 hours are not recommended for reticulocyte examination.

Keyword : *reticulocyte, chronic kidney disease, delayed examination, 2–8°C storage*