

ABSTRAK

Latar Belakang: Pemeriksaan kreatinin merupakan salah satu pemeriksaan kimia klinik yang digunakan untuk menilai fungsi ginjal, terutama pada pasien gagal ginjal kronik. Penggunaan setengah volume reagen dan sampel mulai diterapkan di beberapa laboratorium sebagai upaya efisiensi penggunaan reagen dan mengatasi keterbatasan volume sampel. Perlu dievaluasi untuk memastikan akurasi hasil.

Tujuan : Penelitian ini bertujuan mengetahui perbedaan hasil pemeriksaan kadar kreatinin pada serum pasien gagal ginjal kronik menggunakan setengah volume reagen dan sampel dibandingkan dengan volume penuh.

Metode : Jenis penelitian ini adalah pre-eksperimen dengan desain static group comparison. Sampel penelitian berupa 40 serum pasien gagal ginjal kronik yang diperiksa menggunakan metode Jaffe dengan alat spektrofotometer. Pemeriksaan dilakukan menggunakan dua perlakuan, yaitu volume penuh dan setengah volume reagen serta sampel. Data dianalisis menggunakan uji normalitas Shapiro-Wilk dan dilanjutkan dengan uji Paired Sample T-Test.

Hasil : Rerata kadar kreatinin pada penggunaan volume penuh sebesar 13,67 mg/dL, sedangkan pada penggunaan setengah volume sebesar 13,48 mg/dL. Hasil uji Paired Sample T-Test menunjukkan nilai signifikansi sebesar 0,000 ($p < 0,05$), yang berarti terdapat perbedaan signifikan antara kedua metode pemeriksaan. Meskipun demikian, nilai mean difference sebesar 1,39% masih berada dalam batas toleransi Clinical Laboratory Improvement Amendments (CLIA) yaitu $\pm 10\%$, sehingga perbedaan hasil masih dapat diterima secara klinis.

Kesimpulan : Terdapat perbedaan hasil pemeriksaan kadar kreatinin antara penggunaan setengah volume reagen dan sampel dengan volume penuh, namun perbedaan tersebut masih dapat diterima secara klinis berdasarkan standar CLIA.

Kata Kunci : Kreatinin, Serum Gagal Ginjal Kronik, Setengah Volume

ABSTRACT

Background: Creatinine examination is one of the clinical chemistry tests used to assess kidney function, especially in patients with chronic kidney disease. The use of half-volume reagents and samples has begun to be implemented in several laboratories as an effort to improve reagent efficiency and overcome limited sample volume. Evaluation is needed to ensure the accuracy of the test results.

Objective: This study aimed to determine the differences in creatinine level examination results in serum from chronic kidney disease patients using half-volume reagents and samples compared to full volume.

Methods: This study used a pre-experimental design with a static group comparison approach. The research samples consisted of 40 serum samples from chronic kidney disease patients examined using the Jaffe method with a spectrophotometer. The examinations were carried out using two treatments: full-volume and half-volume reagents and samples. Data were analyzed using the Shapiro-Wilk normality test followed by the Paired Sample T-Test.

Results: The mean creatinine level using full volume was 13.67 mg/dL, while the mean using half volume was 13.48 mg/dL. The Paired Sample T-Test showed a significance value of 0.000 ($p < 0.05$), indicating a significant difference between the two examination methods. However, the mean difference value of 1.39% was still within the Clinical Laboratory Improvement Amendments (CLIA) tolerance limit of $\pm 10\%$, indicating that the difference was still clinically acceptable.

Conclusion: There was a significant difference in creatinine examination results between the use of half-volume reagents and samples and full volume; however, the difference was still clinically acceptable based on CLIA standards.

Keywords: Creatinine, Chronic Kidney Disease Serum, Half Volume