

ABSTRACT

Background: Examination of potassium levels is very important in clinical chemistry analysis, playing a role in monitoring chronic diseases such as Diabetes Mellitus (DM) and hypertension of various physiological functions. The use of the half-volume reagent sample technique in the measurement of potassium levels in the laboratory needs to be considered whether or not there is a sacrifice of the accuracy of the results.

Objective: Differences in potassium levels are known based on the use of techniques in the examination process, specifically comparing half and one volume techniques in accordance with Standard Operating Procedures (SOP).

Methods: This study used a pre-experimental design with Posttest Only Design, involving residual serum samples from pre-elderly and elderly patients at Bantul 1 Community Health Center with a total of 31 samples focusing on measuring potassium levels using the Photometric Turbidimetric Test method at a wavelength of 578 nm using a spectrophotometer.

Results: Descriptive analysis showed the average value of potassium levels using the half-volume technique was 4.38 mEq/L and one volume was 3.92 mEq/L. While statistical analysis using 2 Independent Samples (Mann Whitney U) obtained the results of Asymp. Sig. (2-tailed) of 0.078 (>0.05) indicates there is no significant difference.

Conclusion: There is no significant difference in the results of checking potassium levels using half and one volume techniques in accordance with SOP.

Keywords: Potassium, Half Volume Technique, Reagents and Samples.

ABSTRAK

Latar Belakang: Pemeriksaan kadar kalium sangat penting dalam analisis kimia klinis, berperan dalam pemantauan penyakit kronis seperti Diabetes Mellitus (DM) dan hipertensi berbagai fungsi fisiologis. Penggunaan teknik setengah volume reagen sampel pada pengukuran kadar kalium di laboratorium perlu diperhatikan ada atau tidaknya pengorbanan dari keakuratan hasil.

Tujuan: Diketahui perbedaan hasil kadar kalium berdasarkan penggunaan teknik dalam proses pemeriksaan, khususnya membandingkan teknik setengah dan satu volume sesuai dengan Standar Operasional Prosedur (SOP).

Metode: Penelitian ini menggunakan desain *pra-eksperimental* dengan *Posttest Only Design*, melibatkan sampel sisa serum dari pasien pra lansia dan lansia di Puskesmas Bantul 1 yang jumlah 31 sampel dengan fokus pada pengukuran kadar kalium menggunakan metode *Photometric Turbidimetric Test* pada panjang gelombang 578 nm menggunakan spektrofotometer.

Hasil: Analisis secara deskriptif menunjukkan nilai rata-rata kadar kalium menggunakan teknik setengah volume yaitu 4,38 mEq/L dan satu volume yaitu 3,92 mEq/L. Sedangkan analisis statistik menggunakan *2 Independent Samples (Mann Whitney U)* didapatkan hasil *Asymp.Sig.(2-tailed)* sebesar 0,078 ($>0,05$) menunjukkan tidak terdapat perbedaan yang signifikan.

Kesimpulan: Tidak terdapat perbedaan yang signifikan dari hasil pemeriksaan kadar kalium menggunakan teknik setengah dan satu volume sesuai dengan SOP.

Kata Kunci: Kalium, Teknik Setengah Volume, Reagen dan Sampel