

ABSTRAK

Latar belakang : Pemeriksaan kadar klorida merupakan parameter penting untuk menilai keseimbangan elektrolit dan asam-basa tubuh. Dalam tahapan praanalitik, teknik transfer darah dari spuit ke tabung sering kali dilakukan dengan cara yang berbeda, baik dengan melepas jarum maupun tanpa melepas jarum. Perbedaan teknik ini berpotensi menimbulkan tekanan mekanik yang memicu hemolisis, yang pada akhirnya dapat memengaruhi akurasi hasil laboratorium.

Tujuan Penelitian : Mengetahui perbedaan kadar klorida serum akibat teknik transfer darah dari spuit ke tabung dengan dan tanpa pelepasan jarum, serta menganalisis selisih hasil kadar klorida yang dihasilkan dari kedua perlakuan.

Metode Penelitian : Penelitian ini merupakan jenis penelitian observasional analitik dengan desain *cross sectional*. Sampel penelitian berupa 30 sampel serum pasien normal (total 60 pemeriksaan). Kadar klorida diukur menggunakan metode *Ion Selective Electrode* (ISE). Data dianalisis secara statistik menggunakan uji normalitas *Shapiro-Wilk*, yang kemudian dilanjutkan dengan uji *Unpaired Sample T-Test* untuk melihat perbedaan antar perlakuan.

Hasil Penelitian : Rerata kadar klorida pada teknik transfer darah dengan melepas jarum sebesar 100,69 mmol/L, sedangkan tanpa melepas jarum sebesar 98,97 mmol/L. Terdapat selisih rerata sebesar 1,72 mmol/L dengan penurunan sebesar 1,71% pada perlakuan tanpa melepas jarum. Hasil uji statistik menunjukkan perbedaan yang signifikan ($p < 0,05$). Evaluasi mutu analitik menunjukkan nilai *Total Error* sebesar 4,88%, masih berada di bawah batas Tea klorida menurut CLIA, yaitu $\pm 5\%$.

Kesimpulan : Terdapat perbedaan signifikan secara statistik pada kadar klorida antara kedua teknik transfer darah, namun perbedaan tersebut tidak bermakna secara klinis karena masih berada dalam batas toleransi kesalahan yang diizinkan. Untuk menjamin akurasi yang lebih stabil dan mencegah risiko hemolisis pada parameter lain, teknik melepas jarum lebih direkomendasikan sebagai prosedur standar.

Kata Kunci : Kadar Klorida, Teknik Transfer Darah, Praanalitik

ABSTRACT

Intriduction: Chloride level examination is an important parameter for assessing electrolyte and acid-base balance in the body. During the pre-analytical phase, blood transfer from a syringe to a tube is often performed using different techniques, either by removing the needle or without removing the needle. These differences in technique may cause mechanical pressure that can trigger hemolysis, which may ultimately affect the accuracy of laboratory results.

Purpose: To determine the differences in serum chloride levels resulting from blood transfer techniques from a syringe to a tube with and without needle removal, and to analyze the differences in chloride levels produced by both treatments.

Methods: This study was an analytical observational study with a *cross-sectional* design. The research samples consisted of 30 normal patient serum samples (60 total examinations). Chloride levels were measured using the *Ion Selective Electrode* (ISE) method. Data were statistically analyzed using the *Shapiro-Wilk* normality test, followed by the *Unpaired Sample T-Test* to determine differences between treatments.

Results: The mean chloride level in the blood transfer technique with needle removal was 100.69 mmol/L, while the technique without needle removal showed a mean value of 98.97 mmol/L. There was a mean difference of 1.72 mmol/L with a decrease of 1.71% in the treatment without needle removal. Statistical analysis showed a significant difference ($p < 0.05$). Analytical quality evaluation demonstrated a Total Error value of 4.88%, which remained below the chloride TEa limit according to CLIA standards, namely $\pm 5\%$.

Conclusion: There is a statistically significant difference in chloride levels between the two blood transfer techniques, but the difference is not clinically significant as it remains within the permissible error tolerance. To ensure more stable accuracy and prevent the risk of hemolysis in other parameters, the needle-removal technique is more recommended as a standard procedure.

Keywords: Chloride Levels, Blood Transfer Technique, Preanalytical.