

ABSTRACT

Background: The most common laboratory error that occurs is the problem of samples experiencing hemolysis. Hemolysis in samples can interfere with almost all laboratory tests. Therefore, research is needed on how much influence the level of hemolysis in serum has on blood chemistry tests, one of which is checking chloride levels.

Research Objective: To determine the effect of hemoglobin in serum on the results of chloride level examination.

Research Method: The type of research used was a true experiment with a post test only control group research design. Samples consisted of serum from 12 respondents and were divided into 4 treatment groups. Treatment consists of adding hemolysate. Each treatment group made 500 μ l of the mixture, each of which was added with 0 μ l, 28 μ l, 38 μ l and 57 μ l of hemolysate to obtain hemoglobin levels in the mixture, namely 0 mg/dL, \pm 600 mg/dL, \pm 800 mg/dL and \pm 1200 mg/dL. Checking chloride levels using an Electrolyte Analyzer with the Ion Selective Electrode method. There were 48 data obtained from checking chloride levels, then the data were analyzed statistically using SPSS 26 for Windows.

Result: The results of statistical analysis using the Repeated Measures ANOVA test obtained a significant value of 0.589 ($p \geq 0.05$), meaning that there was no difference in the average results of examination of chloride levels in serum containing hemoglobin levels of 0 mg/dl, \pm 600 mg/dl, \pm 800 mg/dl and \pm 1200 mg/dl.

Conclusion: There was no influence of hemoglobin levels in the serum on the results of the chloride level examination, even though this study used serum with severe hemolysis levels.

Keywords: hemolysis, hemoglobin levels, serum, chloride level

ABSTRAK

Latar Belakang: Kesalahan pemeriksaan di laboratorium yang paling umum terjadi adalah masalah sampel yang mengalami hemolisis. Hemolisis pada sampel dapat mengganggu hampir seluruh pemeriksaan laboratorium. Maka dari itu, diperlukan penelitian tentang seberapa besar pengaruh kadar hemolisis dalam serum terhadap pemeriksaan kimia darah salah satunya pemeriksaan kadar klorida.

Tujuan Penelitian: Mengetahui pengaruh hemoglobin dalam serum terhadap hasil pemeriksaan kadar klorida.

Metode Penelitian: Jenis penelitian yang digunakan adalah *true experiment* dengan desain penelitian *Post test only control group*. Sampel berupa serum dari 12 responden dan dibagi menjadi 4 kelompok perlakuan. Perlakuan berupa penambahan hemolisis. Setiap kelompok perlakuan dibuat 500 µl campuran yang masing-masing ditambah 0 µl, 28 µl, 38 µl dan 57 µl hemolisis sehingga didapatkan kadar hemoglobin dalam campuran yaitu 0 mg/dL, ±600 mg/dL, ±800 mg/dL dan ±1200 mg/dL. Pemeriksaan kadar klorida menggunakan alat *Electrolyte Analyzer* dengan metode *Ion Selective Electrode*. Data hasil pemeriksaan kadar klorida diperoleh sebanyak 48 data, kemudian data dianalisis secara statistik menggunakan SPSS 26 for windows.

Hasil Penelitian: Hasil analisis statistik menggunakan uji *Repeated Measures ANOVA* diperoleh nilai signifikan sebesar 0,589 ($p \geq 0,05$), artinya tidak ada perbedaan rata-rata hasil pemeriksaan kadar klorida pada serum yang mengandung kadar hemoglobin 0 mg/dl, ±600 mg/dl, ±800 mg/dl dan ±1200 mg/dl.

Kesimpulan: Tidak ada pengaruh kadar hemoglobin dalam serum terhadap hasil pemeriksaan kadar klorida, meskipun penelitian ini menggunakan serum dengan kadar hemolisis berat.

Kata Kunci: hemolisis, kadar hemoglobin, serum, kadar klorida