

## ABSTRAK

**Latar Belakang :** Serum hemolisis merupakan serum yang mengandung hemoglobin, berwarna kemerahan serta penyebab terbesar kesalahan pada tahap pra analitik. Serum hemolisis dapat terjadi akibat penggunaan *tourniquet* yang terlalu lama, homogenisasi sampel secara berlebihan, penggunaan jarum yang terlalu kecil dan lain-lain. Hemolisis mempengaruhi hasil pemeriksaan kimia darah salah satunya kadar bilirubin total.

**Tujuan Penelitian :** untuk mengetahui pengaruh kadar hemoglobin dalam serum terhadap hasil pemeriksaan kadar bilirubin total dan mengetahui kadar hemoglobin dalam serum yang dapat mempengaruhi hasil pemeriksaan bilirubin total.

**Metode Penelitian :** Jenis penelitian ini adalah eksperimen semu dengan desain penelitian *Posttest Only Control Group Design*. Sampel yang digunakan berupa serum yang berasal dari 9 orang dan masing-masing dibagi menjadi 6 kelompok. Setiap kelompok dibuat 500  $\mu\text{L}$  campuran yang masing-masing ditambah hemolizat (kadar 2782 mg/dL) sebanyak 0  $\mu\text{L}$ , 11  $\mu\text{L}$ , 18  $\mu\text{L}$ , 32  $\mu\text{L}$ , 53  $\mu\text{L}$  dan 82  $\mu\text{L}$  sehingga kadar hemoglobin dalam campuran yaitu 0 mg/dL, 61,2 mg/dL, 100,2 mg/dL, 178,1 mg/dL, 294,9 mg/dL, dan 456,3 mg/dL. Data hasil pemeriksaan kadar bilirubin total diperoleh 54 data, kemudian data dianalisis dengan uji *One-Way ANOVA* menggunakan SPSS 16.0 *for windows*.

**Hasil Penelitian :** Hasil penelitian ini menunjukkan adanya perbedaan rerata hasil pemeriksaan kadar bilirubin total. Analisis statistik menunjukkan  $p(0,000) < 0,05$  yang artinya ada perbedaan kadar bilirubin total yang mengandung hemoglobin 0 mg/dL, 61,2 mg/dL, 100,2 mg/dL, 178,1 mg/dL, 294,9 mg/dL dan 456,3 mg/dL terhadap hasil pemeriksaan kadar bilirubin total secara berurutan yaitu 0,41 mg/dL, 0,38 mg/dL, 0,32 mg/dL, 0,26 mg/dL, 0,21 mg/dL dan 0,17 mg/dL. Kadar hemoglobin dalam serum mulai 100,2 mg/dL sudah mempengaruhi terhadap hasil pemeriksaan kadar bilirubin total.

**Kesimpulan :** Ada pengaruh kadar hemoglobin dalam serum terhadap hasil pemeriksaan kadar bilirubin total. Kadar hemoglobin dalam serum mulai 100,2 mg/dL sudah mempengaruhi terhadap hasil pemeriksaan kadar bilirubin total.

**Kata Kunci :** hemolisis, kadar hemoglobin, kadar bilirubin total

## ABSTRACT

**Background:** Serum hemolysis is a serum containing hemoglobin, reddish and the biggest cause of errors in the pre-analytic stage. Serum hemolysis can occur due to prolonged use of tourniquet, excessive homogenization of samples, use of needles that are too small and others. Hemolysis affects the results of blood chemistry tests, one of which is total bilirubin levels.

**Research Objective:** to determine the effect of serum hemoglobin levels on the results of the examination of total bilirubin levels and to know the levels of hemoglobin in serum that can affect the results of total bilirubin examination.

**Research Method:** This type of research was a quasy-experimental research design with the Posttest Only Control Group Design. Samples used in the form of serum from 9 respondents and each was divided into 6 groups. Each group was made 500  $\mu$ L mixture, each added hemolysate (2782 mg / dL levels) as much as 0  $\mu$ L, 11  $\mu$ L, 18  $\mu$ L, 32  $\mu$ L, 53  $\mu$ L and 82  $\mu$ L so that the hemoglobin level in the mixture was 0 mg/dL, 61.2 mg/dL, 100.2 mg/dL, 178.1 mg/dL, 294.9 mg/dL, and 456.3 mg/dL. Data on the total bilirubin level examination obtained 54 data, then the data were analyzed by One-Way ANOVA test using SPSS 16.0 for windows.

**Results:** The results of this study indicated a difference in the average results of the examination of total bilirubin levels. Statistical analysis showed p (0,000) <0.05 which means that there were differences in total bilirubin levels containing 0 mg / dL hemoglobin, 61.2 mg/dL, 100.2 mg/dL, 178.1 mg/dL, 294.9 mg/dL and 456.3 mg/dL to the results of total bilirubin levels, respectively 0.41 mg/dL, 0.38 mg/dL, 0.32 mg/dL, 0.26 mg/dL, 0.21 mg/dL and 0.17 mg/dL. Hemoglobin levels in serum starting at 100.2 mg/dL have influenced the results of the examination of total bilirubin levels.

**Conclusion:** There was an influence of serum hemoglobin levels on the results of total bilirubin levels. Hemoglobin levels in serum starting at 100.2 mg/dL have influenced the results of the examination of total bilirubin levels.

**Keywords:** hemolysis, hemoglobin level, total bilirubin level