

ABSTRACT

Background: Direct bilirubin is a photosensitive laboratory parameter susceptible to concentration alterations when directly exposed to light at room temperature. Exposure to sunlight or ambient room lighting can compromise sample stability prior to analysis.

Research Objective: This study aims to determine the difference in direct bilirubin levels between light-protected and unprotected samples analyzed at room temperature.

Research Method: A quasi-experimental study was conducted using a Post-test Only Control Group Design. Serum samples were divided into two treatment groups: one with light protection and one without light protection, both maintained at room temperature. Data normality was assessed using the Shapiro-Wilk test, followed by parametric comparative hypothesis testing using the Paired Sample T-Test.

Research Results: The findings revealed that the mean direct bilirubin level in light-protected samples was 0.11 mg/dL, whereas the unprotected samples showed a mean level of 0.10 mg/dL, indicating a decrease of 0.01 mg/dL. The normality test confirmed that the data were normally distributed ($p > 0.05$). The Paired Sample T-Test yielded a statistically significant difference with a p-value of 0.000 ($p < 0.05$).

Conclusion: There is a statistically significant difference in direct bilirubin levels between light-protected and unprotected samples analyzed at room temperature.

Keywords: Direct bilirubin, light protection, room temperature, sample stability.

ABSTRAK

Latar Belakang: Bilirubin direk merupakan salah satu parameter pemeriksaan laboratorium yang bersifat fotosensitif dan rentan mengalami perubahan kadar apabila terpapar cahaya secara langsung pada suhu ruang. Paparan cahaya matahari atau lampu ruangan dapat mempengaruhi stabilitas sampel sebelum dilakukan pemeriksaan.

Tujuan Penelitian: Mengetahui perbedaan kadar bilirubin direk pada sampel dengan dan tanpa pelindung yang diperiksa disuhu ruang.

Metode Penelitian: Metode penelitian yang digunakan adalah jenis *quasi experiment* dengan rancangan *Post-test Only Control Group Design*. Sampel serum dibagi menjadi dua kelompok perlakuan, yaitu kelompok dengan pelindung dan tanpa pelindung cahaya pada suhu ruang. Data diuji normalitasnya menggunakan *Shapiro-Wilk*, dilanjutkan dengan uji hipotesis komparatif parametrik *Paired Sample T-Test*.

Hasil Penelitian: Hasil penelitian menunjukkan rata-rata kadar bilirubin direk pada sampel dengan pelindung cahaya adalah 0,11 mg/dL, sedangkan pada sampel tanpa pelindung cahaya sebesar 0,10 mg/dL dengan selisih penurunan 0,01 mg/dL. Uji normalitas menunjukkan data terdistribusi normal ($p > 0,05$). Hasil uji *Paired Sample T-Test* memperoleh nilai signifikansi sebesar $p = 0,000$ ($p < 0,05$).

Kesimpulan: Terdapat perbedaan kadar bilirubin direk pada sampel dengan dan tanpa pelindung yang diperiksa disuhu ruang.

Kata Kunci: Bilirubin direk, pelindung cahaya, suhu ruang, stabilitas sampel.