

ABSTRACT

Background: Uric acid level examination was one of the important parameters in the diagnosis of purine metabolism disorders. The Uricase-PAP method was widely used because it had good accuracy; however, the examination results could be affected by analytical factors such as incubation time. In practice, delays in incubation often occurred and had the potential to affect the validity of the results.

Objective: This study aimed to determine the agreement level of serum uric acid levels with incubation time variations of 10 minutes and 75 minutes at room temperature using the Uricase-PAP method.

Methods: This study used a pre-experimental design with a static group comparison design that compared uric acid levels using incubation times of 10 minutes and 75 minutes. A total of 40 serum samples were examined using a spectrophotometer at a wavelength of 520 nm after incubation for 10 minutes and 75 minutes. Data analysis was conducted descriptively and using the Bland–Altman test.

Results: The results showed that the mean uric acid level at 10 minutes of incubation was 5.89 mg/dL, whereas at 75 minutes of incubation it was 5.31 mg/dL, with a difference of 0.58 mg/dL. The Bland–Altman test showed a mean bias of -9.72% with Limits of Agreement (LoA) ranging from -14.60% to -4.84%, as well as a 95% Confidence Interval ranging from -10.52% to -8.93%. The Bland–Altman plot showed that the Limits of Agreement (LoA) exceeded the maximum acceptable bias limit, indicating that the results were not acceptable and interchangeable due to poor agreement.

Conclusion: An incubation time of 75 minutes showed poor agreement and had the potential to affect the validity of the results. Therefore, the use of a 75-minute incubation time was not recommended for uric acid examination.

Keywords: uric acid, Uricase-PAP, incubation time, Bland–Altman

ABSTRAK

Latar Belakang: Pemeriksaan kadar asam urat merupakan salah satu parameter penting dalam diagnosis gangguan metabolisme purin. Metode Uricase-PAP banyak digunakan karena memiliki akurasi yang baik, namun hasil pemeriksaan dapat dipengaruhi oleh faktor analitik seperti waktu inkubasi. Dalam praktik, keterlambatan inkubasi sering terjadi dan berpotensi memengaruhi validitas hasil.

Tujuan: Penelitian ini bertujuan untuk mengetahui tingkat kesesuaian kadar asam urat serum dengan variasi waktu inkubasi 10 menit dan 75 menit pada suhu ruang menggunakan metode Uricase-PAP.

Metode: Penelitian ini menggunakan desain pre-experimental dengan design *static group comparison* yang membandingkan kadar asam urat menggunakan waktu inkubasi 10 menit dan 75 menit. Sampel sebanyak 40 serum diperiksa menggunakan spektrofotometer pada panjang gelombang 520 nm pada waktu inkubasi 10 menit dan 75 menit. Analisis data dilakukan secara deskriptif dan uji Bland-Altman.

Hasil: Hasil penelitian menunjukkan rata-rata kadar asam urat pada inkubasi 10 menit adalah 5,89 mg/dL, sedangkan pada inkubasi 75 menit adalah 5,31 mg/dL dengan selisih 0,58 mg/dL. Hasil uji Bland-Altman menunjukkan rata-rata bias sebesar -9,72% dengan *Limits of Agreement* (LoA) antara -14,60% hingga -4,84% serta *Confidence Interval* 95% dengan rentang -10,52% hingga -8,93%. Plot Bland-Altman menunjukkan *Limits of Agreement* (LoA) telah melewati batas bias maksimum sehingga hasil tidak dapat diterima dan dipertukarkan karena memiliki tingkat kesesuaian yang buruk.

Kesimpulan: Waktu inkubasi selama 75 menit menunjukkan kesesuaian yang buruk dan berpotensi memengaruhi validitas hasil. Penggunaan waktu inkubasi selama 75 menit tidak disarankan untuk pemeriksaan asam urat.

Kata Kunci: asam urat, Uricase-PAP, waktu inkubasi, Bland-Altman