

ABSTRAK

Latar Belakang: Flebotomi merupakan prosedur medis untuk mengambil darah vena yang umum dilakukan dalam pemeriksaan laboratorium. Salah satu instrumen penting dalam prosedur ini adalah tourniquet. Penggunaan tourniquet yang terlalu lama atau terlalu kencang dapat menyebabkan hemokonsentrasi, yaitu peningkatan konsentrasi komponen darah akibat penurunan volume plasma. Kondisi ini dapat memengaruhi hasil uji laboratorium, termasuk pemeriksaan kadar enzim Aspartate Aminotransferase (AST).

Tujuan: Mengetahui ada tidaknya perbedaan lama pemasangan *tourniquet* selama < 1 menit dan maksimal 2 menit pada pengambilan darah vena terhadap hasil pemeriksaan kadar *Aspartate Aminotransferase* (AST).

Metode Penelitian: Jenis penelitian adalah Observasi Analitik dengan desain penelitian *Cross Sectional*. Sampel yang digunakan adalah serum dengan total responden sebanyak 33 orang. Data primer yang diperoleh kemudian dianalisis secara deskriptif dan statistik.

Hasil: Hasil penelitian menunjukkan rerata hasil pemeriksaan kadar *Aspartate Aminotransferase* (AST) pada lama pemasangan *Tourniquet* < 1 Menit dan maksimal 2 menit adalah 20,24 U/L dan 22,82 U/L dengan selisih 2,58 U/L. Hasil analisis secara deskriptif menunjukkan adanya peningkatan kadar *Aspartate Aminotransferase* (AST) pada pemanjangan lama pemasangan *Tourniquet* pada pengambilan darah vena sebesar 12,75%. Kemudian hasil analisis secara statistik menggunakan *Paired Sample T-Test* menunjukkan nilai $p(0,000) < 0,05$ yang menyatakan adanya perbedaan signifikan.

Kesimpulan: Terdapat perbedaan kadar *Aspartate Aminotransferase* (AST) pada lama pemasangan *tourniquet* selama < 1 menit dan maksimal 2 menit, namun masih masuk dalam batas toleransi yang diperbolehkan oleh *Clinical Laboratory Improvement Amendments* (CLIA) yakni $\pm 15\%$.

Kata Kunci: *Tourniquet*, Hemokonsentrasi, Kadar *Aspartate Aminotransferase* (AST)

ABSTRACT

Background: Phlebotomy is a common medical procedure for venous blood collection used in laboratory testing. One of the essential instruments in this procedure is the tourniquet. Prolonged or overly tight application of a tourniquet can lead to hemoconcentration, which is an increase in blood component concentration due to a decrease in plasma volume. This condition may affect laboratory test results, including the measurement of Aspartate Aminotransferase (AST) levels.

Objective: To determine whether there is a difference in the duration of tourniquet application < 1 minute and a maximum of 2 minutes when taking venous blood on the results of the Aspartate Aminotransferase (AST) level examination.

Methods: This study employed an analytic observational approach with a cross sectional design. A total of 33 serum samples were analyzed. The primary data collected were analyzed both descriptively and statistically.

Results: The results of the study showed that the average results of the Aspartate Aminotransferase (AST) level examination at the Tourniquet installation time of <1 minute and a maximum of 2 minutes were 20.24 U/L and 22.82 U/L with a difference of 2.58 U/L. The results of the descriptive analysis showed an increase in Aspartate Aminotransferase (AST) levels in the extension of the Tourniquet installation time in venous blood collection by 12.75%. Then the results of the statistical analysis using the Paired Sample T-Test showed a p value (0.000) <0.05 which stated a significant difference.

Conclusion: There is a difference in Aspartate Aminotransferase (AST) levels when the tourniquet is applied for <1 minute and a maximum of 2 minutes, but it is still within the tolerance limits permitted by the Clinical Laboratory Improvement Amendments (CLIA), which is $\pm 15\%$.

Keywords: Tourniquet, Hemoconcentration, Aspartate Aminotransferase (AST) Levels