

ABSTRAK

Latar Belakang: Tahap praanalitik merupakan sumber kesalahan terbesar dalam pemeriksaan laboratorium, mencapai 60–70% dari total kesalahan. Salah satu aspek kritis pada tahap ini adalah waktu pendiaman spesimen darah dalam *Serum Separator Tube* (SST) sebelum sentrifugasi. Waktu pendiaman yang tidak optimal dapat menyebabkan pembekuan darah yang belum sempurna sehingga berpotensi melepaskan enzim intraseluler, termasuk *Aspartate Aminotransferase* (AST) ke dalam serum secara palsu.

Tujuan: Mengetahui perbedaan aktivitas enzim AST pada spesimen darah dalam SST yang didiamkan 5 menit dan 30 menit sebelum sentrifugasi.

Metode: Penelitian kuasi eksperimen dengan pendekatan *post test only control design*. Spesimen yang digunakan adalah darah yang didiamkan 5 menit dan 30 menit sebelum disentrifugasi. Aktivitas enzim *Aspartate Aminotransferase* (AST) diukur menggunakan metode kinetik IFCC. Data dianalisis menggunakan uji statistik parametrik atau non parametrik sesuai dengan distribusi data

Hasil: Rerata aktivitas enzim AST pada pendiaman 5 menit adalah 16,26 U/L, sedangkan pada pendiaman 30 menit adalah 15,08 U/L, dengan selisih rerata 1,18 U/L (7,82%). Uji Wilcoxon menunjukkan nilai *Asymp. Sig. (0,027) < 0,05*, yang berarti terdapat perbedaan yang bermakna secara statistik. Namun, selisih tersebut masih berada di bawah batas *Total Error Allowable* (TEa) CLIA sebesar 15%.

Kesimpulan: Terdapat perbedaan aktivitas enzim AST antara pendiaman 5 menit dan 30 menit sebelum sentrifugasi, namun perbedaan tersebut tidak bermakna secara klinis.

Kata Kunci: *Aspartate Aminotransferase*, Serum Separator Tube, waktu pendiaman.

ABSTRACT

Background: The preanalytical stage is the largest source of errors in laboratory examinations, accounting for 60–70% of total errors. One of the critical aspects at this stage is the dimmer time of the blood specimen in the Serum Separator Tube (SST) before centrifugation. Imoptimal residence time can lead to incomplete blood clotting that has the potential to falsely release intracellular enzymes, including Aspartate Aminotransferase (AST) into the serum.

Objective: To determine the difference in AST enzyme activity in blood specimens in SST that was left 5 minutes and 30 minutes before centrifugation.

Method: Quasi-experimental research with a post test only control design approach. The specimens used were blood that was left for 5 minutes and 30 minutes before centrifugation. The activity of the enzyme Aspartate Aminotransferase (AST) was measured using the IFCC kinetic method. The data were analyzed using parametric or non parametric statistical tests according to the distribution of the data

Results: The average AST enzyme activity at 5 minute incubation was 16.26 U/L, while at 30 minute incubation it was 15.08 U/L, with an average difference of 1.18 U/L (7.82%). The Wilcoxon test shows an Asymp value. Sig. (0.027) < 0.05, which means that there is a statistically significant difference. However, the difference is still below CLIA's Total Error Allowable (TEa) limit of 15%.

Conclusions: There was a statistically significant difference in AST enzyme activity between 5 minutes and 30 minutes of silence before centrifugation, but the difference was not clinically significant.

Keywords: Aspartate Aminotransferase, Serum Separator Tube, clotting time.