

## ABSTRACT

**Elvina Rosalina Samosir, NIM : 1534043, 2019.** The different level of *Aspartate Aminotransferase* (AST) on the blood serum which separated by the centrifugation at 3000 rpm for 5 minutes and 4400 rpm for 3 minutes. Bachelor thesis. DIV Medical Analysis, Faculty of Medical Science, Universitas Katolik Musi Charitas Palembang.

**Background:** Aspartate Aminotransferase (AST) is an intercellular enzyme which plays an important role to catalyze the reversible transformation of alpha-keto acid to amino acid through amino functional group transfer. The importance of intercellular enzym like AST is because the position of intercellular enzym on liver and heart. Thus, the AST test should be run fast. Controlling centrifugation time and speed is found as one of the most possible ways to run the AST test fast. Therefore, this present research aims to investigate the effect of centrifugation time and speed on the level of AST enzyme. To be more specific, the study uses two conditions which are the centrifugation at 3000 rpm for 5 minutes and 4400 rpm and 3 minutes.

**Method:** The study is categorized as pre-experimental research with Static Group Comparison study. The main subject of the study is the first-grade students of DIV medical analysis where there are 22 students participated as the samples. Total sampling technique is used to conduct the student sampling with a specific inclusion and exclusion criteria. After finding the suitable samples, the blood of each sample is taken. The blood sample is divided into two groups where the first blood sample group is centrifuged at 3000 rpm for 5 minutes, and the second blood sample group is centrifuged at 4400 rpm for 3 minutes. After centrifugation, each serum-containing on the blood samples is taken and characterized using Biosystem A15 instrumentation with the optimized-UV method. All the obtained data after the test is statistically analyzed using Paired Sample t-test.

**Result:** The average AST level on blood serum centrifuged at 3000 rpm for 5 minutes is 18 U/L, where the one centrifuged at 4400 rpm for 3 minutes is 17,04 U/L. The statistical analysis using paired sample t-test is further confirmed that there is no significant difference in the AST level in each blood samples, indicating the time and speed of centrifugation do not provide any significant difference in the AST level. It is supported by the probability value (p-value) showing 0,027 which is higher than the significant level ( $\alpha$ ) of 0,025 (p-value>0,025).

**Conclusion:** There is no significant difference in the AST level in the blood sample which is centrifuged at 3000 rpm for 5 minutes and 4400 rpm for 3 minutes. However, the centrifugation condition of 4400 rpm for 3 minutes can be used as an alternative reference to determine the AST level on the blood test

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**Keywords:** *Aspartate Aminotransferase* (AST), Speed, Centrifugation.