

# Preliminary Study on Change in Concentration of Aspartate Transaminase in Blood with Storage Time and Temperature

GRDM Abewickrama<sup>1</sup>, APKM Amali<sup>2</sup>, GUS Wijesekara<sup>3#</sup>, EMS Bandara<sup>4</sup> and S Samaranayake<sup>5</sup>

<sup>1,2,3,4</sup>Department of Medical Laboratory Science, Faculty of Allied Health Sciences,  
University of Sri Jayewardenepura, Sri Lanka

<sup>5</sup>Department of Family Medicine, Faculty of Medical Sciences,  
University of Sri Jayewardenepura, Sri Lanka

<sup>#</sup>wijesekara.udaya@gmail.com

Aspartate Transaminase (AST) is an enzyme used to diagnose medical problems found in erythrocytes other than in heart, liver, skeletal muscles, kidney and brain. Prolonged serum-clot contact and fluctuations in temperature are possible reasons for the changes of chemical constituents in serum. The objective of this experimental study was to determine the effect of storage time (3 and 6 hours) before centrifugation and temperature (4° C and 28° C) on stability of Aspartate Transaminase in blood. Fifty three subjects attending Family Practice Center, University of Sri Jayewardenepura were recruited for this study. 5 mL of blood was collected from each and 1 mL of aliquots of it was dispensed into 5 tubes. Aliquot No 1 was centrifuged within 1 hr of collection and AST assay was done to obtain the baseline value by kinetic method. The remaining 4 aliquots were stored at 4°C and room temperature for 3hr and 6hr respectively before centrifugation. The difference between mean base line value and other mean values were analyzed using Non Parametric Wilcoxon test. When samples were stored at room temperature for 3 hours and 6 hours, significant differences were found in the mean AST level ( $p = 0.027$ ) and ( $p = 0.011$ ) respectively compared to baseline value. There was no significant difference in AST values when samples were stored for 3 hours and 6 hours at 4° C. AST was not stable for at least 3 hours in blood at room temperature (28°C). But the AST is stable at 4° C up to 6 hours from phlebotomy.

**Keywords:** Aspartate transaminase or aminotransferase, AST, Room temperature