# The Effect of *Spygmomanometer* Pressure on The Shape of Erythrocytes in Venous Blood Collection

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## ABSTRACT

Determination of examination results of erythrocyte forms using venous blood as a sample using sphygmomanometer based on predetermined pressure. Phlebotomy is a pre-analytic part of hematologic laboratory examinations which includes the installation of a tourniquet. Installation of a tourniquet that is too tight and too long when taking venous blood can cause hemoconcentration. If the medium around the erythrocytes becomes hypertonic the medium will enter the erythrocytes through the membrane that is semifermeable and causes erythrocyte cells to bulge. If the membrane is no longer able to withstand the pressure that is in the erythrocyte cell itself, then it can lead to abnormalities in the examination of erythrocyte forms such as shrinkage or other forms of erythrocytes. The aim of the study was to determine the effect of spygmomanometer pressure on the results of erythrocyte forms. This of research is an experiment that will be analyzed by the *Kruskal Wallis* test. The results showed that on average the installation of spygmomanometer with a pressure of 20 mmHg from the entire sample was 0,15567 and the average spygmomanometer was installed at a pressure of 40 mmHg from the whole sample was 0,15044 and the average spygmomanometer with a pressure of 60 mmHg from the entire sample was 1,42656. Based on the *Kruskal Wallis* test, the results showed that there was a significant effect on spygmomanometer pressure on the results of erythrocyte forms on venous blood collection.

Key Words : spygmomanometer pressure, erythrocytes shape