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MONITORING OF QUALITY CONTROL ON TWO AUTOMATED HEMATOLOGY ANALYZER SYSMEX XN-1000 (L) AND XN-1000 (R)

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ABSTRACT

MONITORING OF QUALITY CONTROL ON TWO AUTOMATED HEMATOLOGY ANALYZER, SYSMEX XN-1000 (L) AND XN-1000 (R)

The aim of the present study was to monitor and evaluate the Quality Control daily results of Automated Hematology Analyzer Sysmex XN-1000 (L) and XN-1000 (R). In this study, quality control materials were used to conduct the analytical procedure. The result obtained from QC procedure was analyzed based on the Levey-Jennings chart to evaluate whether the procedure was in-control or out-of- control. Based on the QC data, the mean and stardard deviation were calculated to plot the Levey-Jennings chart. The values of the Coefficient of Variation obtained from the both of analyzers were compared to determine the more precise analyzer. The parameter included in this study is Red Blood Cell (RBC), Hemoglobin (HB), Hematocrit (HCT), Platelet (PLT) and White Blood Cell (WBC). The method used in this study may help to identify quality problem that can be connected while data are being collected, and to identify biases in data collection that might be adjusted later. Further studies are required for proper quality control and calibration to optimizing the reliability of the patient results.

Key words : Automated Hematology analyzer, Levey-Jennings chart,

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TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

1.1 Background of the study

Quality assurance is the essential organizational infrastructure that included all reliable analytical measurements. It is concerned with achieving correct levels in matters such as staff training and management, safety, the storage, integrity, record keeping, the maintenance and calibration of instruments, and the use of technically validated and properly documented methods. Failure in any of these areas might use much effort to achieve the quality of data. In recent years these practices have been codified and formally recognize as essential (Arthur, 2014). Therefore, Quality Control had to be conducted.

Quality Control is a set of activities for ensuring quality in products (Mitra, 2008). Quality Control (QC) in the medical laboratory is a statistical process used to monitor and evaluate the analytical process that produces patient results. The outcomes of the QC process may result in an assessment of inventory or source category indecision estimates. The statistical process requires a regular testing of quality control products with patient samples and comparison of quality control results to specific statistical limits (ranges). QC results are used to validate whether the instrument is operating within the range, thus whether patient test results are reliable. Once the test system is validated, patient results can be used for diagnosis, prognosis, or treatment planning (Cooper, 2005).