



Research Paper

Study to compare the correlation between Mokshit Digital Hemoglobinometer and KT6400 Hematology Analyzer for Hemoglobin Measurement

Mokshit
Corporation

Received 26 April, 2021; Revised: 08 May, 2021; Accepted 10 May, 2021 © The author(s) 2021.
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I. INTRODUCTION

MOKSHIT DIGITAL HEMOGLOBINOMETER DESCRIPTION

Anemia is a major health concern in India since many decades and is continue to rise. Therefore, Hemoglobin measurement is performed in various Pathology labs, Hospitals, Blood Banks etc. to detect the Hemoglobin with **Reagent free Micro-cuvette Technology**. Different method are used for Hemoglobin measurement like Automated Hematology Analyzer, copper sulphate gravimetric method, Hemoglobin colour scale, HICN method, point of care Hemoglobin meter etc.

It is direct hand-held battery operated device used for Hemoglobin testing in clinical setting/ population-based screening. The device is intended to be used for quantitative measurement of Hemoglobin in only capillary, venous or arterial whole blood samples taken from forearm, upper arm, hand, thigh, calf or fingers.

II. MATERIAL AND METHOD

A study has been conducted at Civil Hospital, Supela Bhilai by M.L.T. Mr.V.K. Deshmukh (Main Lab Technician) and M.L.T. Megha. (Main Lab Technician, Civil Hospital, Supela) A total of 115 EDTA samples were run simultaneously on KT6400 Hematology Analyzer, and Mokshit Digital Hemoglobinometer.

Parameters for analyzer –

$$\text{HB of test} = \frac{\text{Absorbance of test}}{\text{Absorbance of standard}} \times \text{Actual HB of standard}$$

$$\text{HB of Test} = \frac{\text{Absorbance of test}}{0.672} \times 15.4$$

$$\text{Absorbance of test} = 2 - \log_{10} (\% \text{ Transmission test})$$

$$\text{Transmission Test (\%)} = \frac{\text{Transmitted light (test)}}{\text{Incident light (Blanking)}}$$

$$\text{Transmission of standard (\%)} = \frac{\text{Transmitted light (standard)}}{\text{Incident light (Blanking)}}$$

$$\text{Absorbance of standard} = 2 - \log_{10} (\% \text{ Transimission of standard})$$

Correlation Coefficient : $r = 0.9623$

Sensitivity : More than 93%

Specificity : More than 94%

95% limit of agreement range : -0.7 to + 0.7

Result

A lot of 135 samples run both on Mokshit Digital Hemoglobin Meter and KT6400 Hematology Analyzer.

III. RESULT AND DISCUSSION

The correlation coefficient r is 0.9623 which is very accurate and indicates a very good correlation between the results obtained from both, Mokshit Digital Hemoglobin meter and KT6400 Hematology Analyzer.

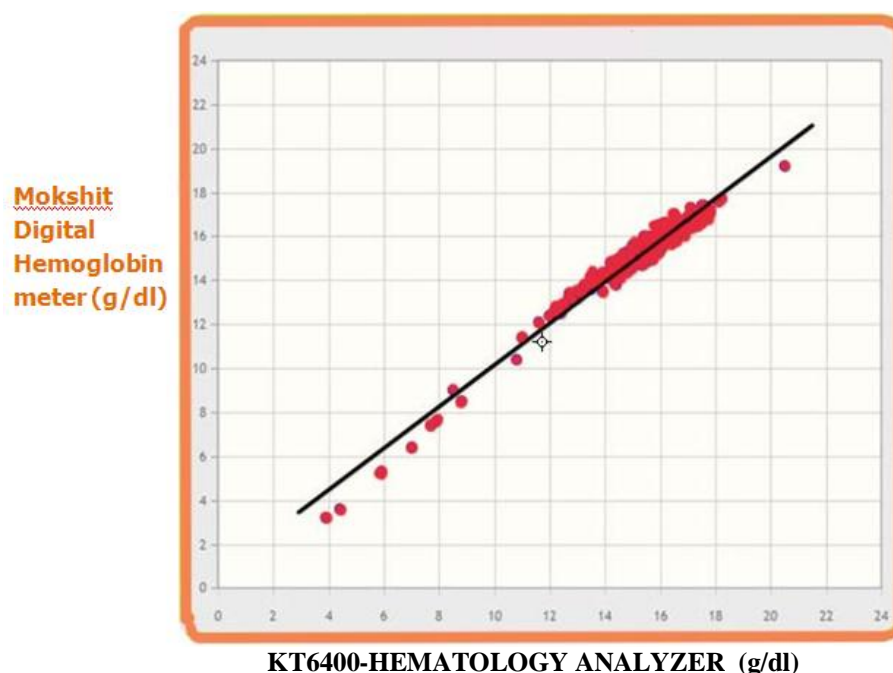


Figure: Correlation between Mokshit Hemoglobin Meter and KT6400- Hematology Analyzer

The words of Mr.V.K.Deshmukh are, “*The device is very portable and easy to use single step-device*”. There are many techniques used for detecting Hemoglobin in blood, but a process which is quick, easy to operate and gives accurate result is most effectively and widely used. Mokshit Hemoglobin meter is very useful and easy to use device for detecting Hemoglobin in just 3 seconds. However, care must be taken while using it like sample must be taken properly through cuvette, the sample must not be touched by bare hands, the device and cuvette must be clean, first drop of sample is wiped out and the next drop is taken as sample.

IV. CONCLUSION

By comparing the results between Mokshit Digital Hemoglobin meter and KT6400 Hematology Analyzer, it is found that Mokshit Digital Hemoglobinometer is comparatively more effective and useful as it is portable and single step process makes it very easy to use as stated by Mr.V.K. Deshmukh (Main Lab Technician, Civil Hospital, Supela) and Mrs. Megha (Lab Technician, Civil Hospital, Supela), after testing of 115 samples and gives results in just 3 seconds. Therefore, Mokshit Digital Hemoglobin meter is very useful for detecting Hemoglobin.

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