Laboratory Hematology 9:1-xx


#02-041-Rahman

ISLH
Official Publication

LETTER TO THE EDITOR

# A New Method for Measuring Hemoglobin

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Received March 28, 2003; received in revised form April 3, 2003; accepted April 17, 2003

Estimation of hemoglobin level is one of the most common laboratory tests. For economic reasons, Sahli's acid hematin method, although least accurate among all methods, is still being used in many laboratories, particularly in developing countries. Keeping the cost almost the same, I have developed and standardized the acid hematin method into a colorimetric (photoelectric) method that is as accurate as the cyanmethhemoglobin method.

In this new method, 200 µL 1.5% HCl (vol/vol) solution is placed in a test tube and 20 µL blood (preferably venous) is mixed with the solution, which is then left undisturbed for at least 3 minutes. Then 5 mL distilled water is added to the test tube and absorbance is taken with a photoelectric colorimeter (filter 530 nm) or autoanalyzer/spectrophotometer (547 nm) after 5 minutes against distilled water as blank. Acid hematin standard solution prepared with preservatives can be used, but is not cost effective. An alternative artificial standard with more stability also has been prepared, but the cyanmethhemoglobin standard can be used as a secondary standard.

It is interesting that absorbances for blood samples have been found to be the same in both the cyanmethhemoglobin method and my modified method. This similarity limits the use of a separate standard for the new method. Many factors affect both methods in the same way, but during my study I found a new factor, high white blood cell (WBC) count, that significantly interferes with both methods (1.2 to 1.4 gm% increase in hemoglobin level per 0.1 million/µL WBC count). To avoid this problem, supernatant solution must be used during the absorbance measurement.

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