

LETTER TO THE EDITOR

Automated Hematology Analyzer for Cell Counting in Body Fluid

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no doubt that the automated hematology analyzer might be useful for reducing the inaccuracy in analysis. Based on our previous experience [2], the acceptability of using an automated analyzer for body fluid cell count was shown. Nevertheless, the important consideration is on the cost. Genc et al. propose for possible cost reduction but there is no proof. Indeed, using an automated analyzer means additional costs of an automated analyzer, reagent, electricity, and maintenance of the analyzer. Those costs must be systematically assessed before the final conclusion on the cost effectiveness of using an automated hematology analyzer for cell counting in body fluid can be confirmed.

Declaration of Interest:

None.

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KEY WORDS

analyser, cell, body fluid

TO THE EDITOR

We read the recent publication by Genc et al. on “automated hematology analyzer for cell counting in body fluid” and found that it is very interesting [1]. Genc et al. proposed that “automated systems introduce standardized and accurate performances to analyze biologic fluids [1]” and “they are also beneficial for reducing turn-around time and laboratory costs [1].” In fact, it is

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RESPONSE

The Dilemma in Choosing the Best Analytical Methods: Tradition or Technology

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RESPONSE

We thank Professor Joob for his interest in our study. The aim of our study was to evaluate the performances of the XN-1000 and DxH800 analyzers to determine cell counts and WBC differentiation of body fluids and to compare the results with the manual microscopic method [1].

The accurate analysis of biological fluids provides remarkable evidence in diagnosis of several diseases. The presence of increased white blood cells (WBC) and determination of WBC differentiation have significant importance for the distinction between bacterial and viral infections. While a neutrophil predominance is mostly seen in the early stage of infectious or inflammatory diseases, a lymphocytic predominance is related with subacute or chronic diseases. Therefore, the discrimination of cell-type in WBC population may be of help for the clinician to reach the right therapeutic decision [2]. Despite some disadvantages of manual counting, the microscopic analysis of biological fluids is still accepted as the gold standard for the enumeration and differentiation of WBC [3]. Major disadvantages of manual microscopy are seen in preanalytical and postanalytical phases. It is also a time-consuming method which takes at least 30 - 40 minutes per sample. The requirement of skilled technicians who have optimum performances preparing the slides and evaluating the cells, and high imprecision due to the inter- and intra-observer variability are some drawbacks belonging to the preanalytical phase, whereas potential errors which may occur dur-

ing manual transcription of data are related with the postanalytical state [4]. Also, it has been recommended that cell counting should be performed by two experienced persons independently and the average of both results should be reported [5].

Today, automatized systems are reported to have high accuracy and precision, good linearity in addition to short turn-around time (TAT). These features outweigh the cost of equipment and rule out most disadvantages of the manual microscopic method [6,7]. The use of automated hematology systems providing faster results and good precision is a significant development for modern clinical laboratories. Rapid, reliable, and efficient results given with low cost are always preferred by clinicians and hospital and lab directors. Between these characteristics, timeliness -faster turnaround time (TAT)- is the most important for the clinician. However, an accurate analytical and diagnostic performance should be routinely evaluated before analysis, owing to the cellular interfering factors [8]. In a study of Zimmermann et al., the automated analyzer Sysmex XE-5000 was compared with a manual method regarding TAT and cost-effectiveness. Cell count analysis of the XE-5000 showed reduction in TAT and cost compared to the manual method [5].

Finally, when comparing the automatized systems and manual microscopy in the analysis of biological fluids, the cost of running experienced technicians, the loss of repetitions, faults, and delays in diagnosis due to the imprecision should be taken into account.

Declaration of Interest:

The author has no conflict of interest to declare.

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