Response to Letter to the Editor, “Some errors in the measurement of neutrophil-to-lymphocyte ratio”

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To the Editor,

Thank you to the author for his valuable remark concerning the effect of the method used for leukocyte differential for the measurement of neutrophil-to-lymphocyte ratio (NLR). Certainly, leukocytes can be evaluated through several techniques of varying complexity and sophistication. White blood cell (WBC) can be counted manually in specially designed chambers (Neubauer) or with automated counters. The counters are widely used, offering the advantage of higher accuracy and speed over manual techniques. Several machines have been developed to perform automated differential counts, but they are still inferior to manual techniques as far as reliability and ability to discover morphologic abnormalities. The absolute number of each type of WBC, often more informative than its proportion, can be calculated if the differential and the total number of leukocytes per volume unit are known [1]. It has been known that errors in manual WBC counting are mostly caused by the variance in the sample dilution and the distribution of cells in the counting chamber (the small number of WBCs may be counted). For electronic WBC counts and differentials, interference may be due to small fibrin clots, nucleated or unlysed red blood cells, immature WBCs and platelet aggregation. Automated cell counters are not recommended for counting WBCs in other body fluids, especially when WBC number is less than 1000/μL or when other nucleated cell types are present. Author has reported that WBC counting varies according to the methods/devices measuring leukocyte differential in the market [2]. ReferRed study was conducted to evaluate the efficacy of WBC differential counts in severely leukopenic samples by the hematoflow method and by automated hematology analyzers and compared the results with manual counts. Study showed that hematoflow counts of severely leukopenic samples were reproducible and showed a good correlation with manual counts, but did not showed that the methods used in the study caused a false result in NLR measurements. However, it should be taken into account the possible effect of the method for leukocyte differential on NLR measurement. In our study, hematocrit, hemoglobin, WBC and neutrophil measurements were performed on a Coulter Gen-S automated hematology instruments using original reagents (Beckman Coulter LH 780 Gen-S System; Miami, FL, USA; original reagents) [3].

With regards.

References


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