Leukocyte Counts in Cerebrospinal Fluid with the Automated Hematology Analyzer, Technicon H*3

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SUMMARY

Background: Presently, the counting of leukocytes in cerebrospinal fluid (CSF) is still performed manually. This requires sufficiently experienced medical technologists. At present, specific automated systems for CSF cell counting are not available. In this study, we evaluated the use of the automated hematology analyzer, Technicon H*3 in the analysis of cerebrospinal fluid (CSF). Methods: We tested the hematology analyzer, Technicon H*3, which was not designed for CSF analysis. Sixty CSF samples were analyzed by the analyzer, Technicon H*3. Then the counts obtained were compared with the manual microscopic method. Results: Linearity was tested by both plasma and normal saline solution (NSS). Concerning the NSS dilution, a good correlation can be observed at theoretical number of WBC > 30 cells/µL and so did the plasma dilution. The results of the comparison of both methods used for the determination of total leukocytes in the CSF gave a good correlation (r = 0.984). Concerning the determinations of neutrophils and lymphocytes, the correlation coefficients were 0.855 and 0.835, respectively. Conclusions: According to our study, the use of this automated analyzer for cell counting in CSF is probably feasible. The high degree of accuracy and linearity that is offered by the analyzer should prompt us and the manufacturers to remedy the interfering factors as described by improving the algorithms. Once this is done, these analyzers may be very useful for cell counts in CSF. (Clin. Lab. 2002;48:623-629)