

Abstract

Cerebrospinal fluid is examined using a variety of methods, which also include determining the number and type of each cell. Now the method of the first choice to determine the cellular elements is a microscopic method. This determination, however, can also be done using the analyzer method, which is not yet so widespread. The aim of my thesis was to compare these two methods and determine whether the examination of cerebrospinal fluid on the analyzer Sysmex XE-5000 in the „Body Fluid“ mode can replace commonly used microscopic methods. To this purpose, we gathered the laboratory data measured by using both these methods. These data was compared, evaluated and statistically processed. The resulting data suggest that the values measured on the analyzer Sysmex XE-5000 are more accurate than from microscopic determination, especially at highly cell samples of cerebrospinal fluid. To this end, we came evaluation of Bland-Altman graphs and comparison graphs with marked of limits of physiological oligocytosis. For checking of the accuracy of measurements, we verified the repeatability of the analyzer for the values of leukocytes and erythrocytes, coefficients of variation corresponding to the values specified by the manufacturer's documentation. We also investigated the stability of samples of cerebrospinal fluid, depending on the storage temperature. Samples stored at 2 – 8 °C were more stable. Our work implies that the examination on the analyzer Sysmex XE-5000 in the „Body Fluid“ mode is a good alternative to the existing microscopic method and can be fully replaced with it.