COMPARISON OF ELLIPTIC EQUATION – ABC/2 WITH COMPUTER-ASSISTED SEMIAUTHOMATIC METHODS FOR MEASURING THE VOLUME OF INTRACEREBRAL HEMORRHAGE

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Hemorrhage volume, level of consciousness and ventricular extension and expansion of the hematoma are prognostic factors for clinical outcome of intracerebral hemorrhage (ICH). Volumetric measurement of ICH has an important clinical and prognostic meaning.

The aim of this study was to compare the methods which are being used to measure ICH volume: the ABC/2 method and semiautomated method with computer volumetric program.

Our study represents a retrospective analisys of 54 patients (61.11% male and 38.89% female patients with mean age 67.20±10.30 years) who underwent computed tomography (CT) scan of endocranium. Volumetric measurements were performed by ABC/2 method and computer semiautomated method with volumetric program on Advantage Windows 3D Workstation 4.1.

Mean value and standard deviation obtained by ABC/2 method were 41.98±35.47, while mean value and standard deviation obtained by computer semiautomated method with volumetric program were 52.12±45.61. There is a statistically significant difference between the values obtained by these two methods (p=0.03). The absolute difference was 10.14 cm^3. The values acquired by computer method were by 19.46% higher than those acquired by formula. There is a statstically strong positive correlation between these two methods (r=0.852, p<0.05).

Both methods are very useful in determining ICH volume. Our results show that values obtained by computer semiauthomatic method were by 19.46% higher than those obtained by the elliptic equation. Elliptic equation-ABC/2 method is better for measuring regular ICH shapes and fast orientation, while semiautomated computer method is more accurate and more selective. *Acta Medica Medianae 2015;54(3):34-38.*

Key words: *intracerebral hemorrhage,* computed tomography (CT)*, volumetric measurement*