

Our study is focused on signification of imaging methods in the diagnostics of primary traumatic brain injury with emphasis on quantification of neuroradiological findings in patients with diffuse axonal injury. It sums up recent knowledge related to traumatic brain injury and to possibilities of its visualisation according modern trends. Diagnostic approaches to diffuse axonal injury, including their limits, are described in more detail. On two groups of patients with diffuse axonal injury we demonstrate the possibilities of semi-quantitative assessment of MR – the measurement of Signal Intensity Ratio, Degree of Heterogeneity and Modes Ratio. We have proved that semi-quantitative analysis can be successfully performed not only using digital data, but also using data digitalized from films. Besides FLAIR, also FSE images can be used. Semi-quantitative analysis can define diagnostics more precisely and in this way it can make a future therapy possible. It can also help to estimate prognosis of patients with diffuse axonal injury.