

Traumatic brain injury represents serious medical problem. Besides various types of complications, endocrine dysfunction of hypothalamo-pituitary units can occur. Aim of our work was to determine whether chronic subdural haematoma, as specific type of traumatic brain injury, is associated with a risk of developing hypopituitarism as well. In a prospective study, pituitary functions in a cohort of 49 patients after surgery for chronic subdural haematoma, were evaluated. Patients were tested for hormonal deficits including dynamic tests, soon after surgery, in 3 and 12 months thereafter. 10 patients were tested retrospectively 12 months after surgery.

Gonadotropic axis was impaired in 9 patients (25,7 %) in acute phase and remained impaired in 3 (12 %) after 12 months. Growth hormone deficiency was present in 23 (46,9 %) patients during the acute phase and in 15 (46,9 %) patients in evaluation 12 months after the surgery. Serious hormonal deficiencies due to impairment of the most important axes (HPA and thyrotropic) were not proved in our patients.

The second part of this work is devoted to the novel methods in diagnostic assessment of hypothalamo-pituitary-adrenocortical axis. Aim of our work was to evaluate and compare reliability of cortisol measurements in serum and saliva simultaneously during the stimulation test with ACTH. We evaluated the accuracy and reliability of both methods. Serum cortisol proved to be more reliable due to its significantly higher variability in comparison to the salivary cortisol. Regardless of the statistical significance of the difference the salivary cortisol measurement is an acceptable method and for certain situations is irreplaceable. That is in situations where free cortisol needs to be evaluated, like in situations with elevated (effect of estrogens) or reduced (critical states) cortisol binding globulin which distorts serum cortisol levels.