

## **CHITOTRIOSIDASE SERUM ACTIVITY AS A POSSIBLE PROGNOSTIC MARKER IN PATIENTS WITH ACUTE STROKE**

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**Background:** Cerebrovascular disease (CD) is a long-term process that develops gradually through the action of various factors, and could result in stroke. Atherosclerosis is the most important risk factor of CD. Inflammatory factors play an important role in the pathogenesis of atherosclerosis and stroke. In the remodeling and tissue repair after stroke, a variety of factors, including functionally polarized phagocytes are involved. Polarized phagocytes secrete a large amount of the hydrolytic enzyme chitotriosidase. Increased activity of this enzyme is observed in various pathological conditions. Studies of this enzyme in CD have been rare.

**Objective and Methods:** The aim of this study was to investigate serum chitotriosidase activity in patients with acute stroke and to assess its prognostic value. The study included 56 patients divided into three groups based on the outcome of the disease: group 1 with good recovery, group 2 with moderate recovery, and group 3 with weak recovery.

**Results:** The results of chitotriosidase activity were in patients in group 1 (n=21; median 76.16 nmol/ml/h) significantly lower than in group 2 (n=15; median 106.70 nmol/ml/h) p0.005, and in group 3 (n=20; median 155.87 nmol/ml/h), p0.0001. ROC curve (area under the curve 0.869; 95% CI 0.752 to 0.954, p=0.005) indicates a good prognostic value of chitotriosidase activity determination in patients with acute stroke.

**Conclusion:** These preliminary results showed that measurement of serum chitotriosidase activity in patients with acute stroke could be a useful prognostic marker of disease outcome, but further studies should include a larger number of patients.