

---

**Pathogenic Role of Proinflammatory Cytokines in the Development of Chronic Cerebral Ischemia**

D. Usmanova<sup>1</sup>

<sup>1</sup>Neurology, Tashkent institute for postgraduate medical education, Tashkent, Uzbekistan

---

**Background.** Cerebral ischemia is the most frequent cause of the brain functions disorders accompanied by immune changes. The multiple studies show participation of the inflammation process in the atherogenesis and development of the chronic cerebral ischemia (CCI).

**Purpose.** To study characteristics of the proinflammatory cytokines (TNF- $\alpha$ , IL-1 $\beta$ , IL-6) in the patients with CCI with regard to the genesis of the development.

**Material and methods.** There were studied 133 patients who were divided into 2 groups in relation to the pathogenesis of the CCI development. Group 1 included 65 (42,5%) patients with CCI developed predominantly on the basis of arterial hypertension (AH). Group 2 consisted of 68 (44,5%) patients with CCI, developed mainly in cerebral atherosclerosis. The control group of 20 (13,0%) healthy subjects was made for comparison of immunological examinations. The measurement of the cytokine contents (TNF-  $\alpha$ , IL-1 $\beta$ , IL-6) in the peripheral blood serum was performed with IFA method with use of commercial tests – systems "Vector – Best", Novosibirsk, RF, 2013.

**Results.** The level of TNF- $\alpha$  in the blood serum in the patients of group 1 and 2 was increased 2,9 (6,3 $\pm$ 0,76 pg/ml) and 2,12 times (4,6 $\pm$ 0,48 pg/ml), respectively, in the control group only 2,15 $\pm$ 0,23 pg/ml. In group 1 IL-1 $\beta$  was increased 1,8 times (11,4 $\pm$ 1,10 pg/ml), in group 2 – 1,4 times (8,9 $\pm$ 0,64 pg/ml). IL-6 in group 1 was 7,4 $\pm$ 0,86 pg/ml, while in group 2 was 6,5 $\pm$ 0,62 pg/ml.

**Conclusion:** In the pathogenesis of CCI of the hypertonic and atherosclerotic genesis the proinflammatory cytokines have important role.