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Anti-inflammatory effects of neurotrophic therapy in patients with amnestic type mild cognitive impairment

Elena Ponomareva[1], Gavrilova S I[1], Kolyhalov I V[1], Selezneva N D[1], Fedorova Y B[1], Malashenkova I K[2, 3], Didkovsky N A[2] and **Krynskiy S A[2, 3]**
[1]Mental Health Research Center, Russia
[2]NRC Kurchatov Institute, Russia
[3]Federal Medical-Biological Agency, Russia

Aim: The aim of the study was to assess the effect of cerebrolysin therapy on systemic inflammation factors in patients with amnestic type mild cognitive impairment (aMCI).

Materials & Methods: The pilot prospective study included 20 patients (16 women and four men, average age of 72.6±3.2 years) meeting criteria of MCI and 17 volunteers without cognitive deficiency as a control group, matched for age and sex. Patients underwent one course of therapy - 20 intravenous infusions of cerebrolysin in 30 ml with increasing dose during the first four days (5, 10, 20 and 30 ml) in 100 ml physiological saline solution. The criteria for evaluating the effectiveness were the results of neuropsychological testing on a scale CGI (Clinical Global Impression), MMSE (Mini-Mental State Examination); MoCA-test; BNT (Boston Naming Test). Levels of immunoglobulins IgA, IgM, IgG, cortisol, CRP, nerve NGF, BDNF, cytokines IL-2, IL-4, IL-8, TNFa were tested by method of solid-phase enzyme immunoassay at week 0, 6, 22 and after a year therapy in blood serum of all patients.

Results: The study showed that there was no difference in the dynamics of the studied parameters of inflammation and BDNF depending on the age after therapy. The CRP level gradually decreased after treatment and the lower level of CRP in the blood was after a year of the therapy. The level of proinflammatory cytokines TNFa, IL-8 and t-helper cytokines of type 2 IL-4 increased to the 6-week and decreased to the end of the study. The level of proinflammatory proteins decreased after therapy and these changes were maintained for a long time. The patients without the effect of therapy had higher IgA, IgM, platelets, monocytes, lymphocytes and BDNF levels, significantly higher cortisol levels, but not CRP. These data indicate a greater activation of humoral and cellular immunity and adaptation systems. Thus, it can be assumed that the response to therapy with cerebrolysin determines not the age, but the state of immunity and features of systemic inflammation. Thus, it can be assumed that the response to cerebrolysin therapy determines not the age, but the state of immunity and features of systemic inflammation.

Biography

Elena Ponomareva is currently working at Mental Health Research Center of Russian Academy of Medical Sciences, Russia.

elena-pon@hotmail.com

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