

Transimmunization in the treatment of Multiple Sclerosis

Olga Petrovna Sidorova, Kildyushevsky A V, Kotov S V and Borodin AV

M F Vladimirovskiy Moscow Regional Research Clinical Institute, Russia

Introduction: Despite advances in the treatment of multiple sclerosis, it is not always effective. Therefore, the development of new methods of treatment is relevant. Extracorporeal photochemotherapy (ECFT) or photopheresis (FF) is a method of ultraviolet irradiation (UV) of peripheral blood mononuclear cells outside the body. To increase the sensitivity of blood cells to UV, 8-methoxypsoralen is used. When ECFT mononuclear cells after irradiation immediately reinfused patient without additional incubation. Translational cellular immunotherapy (transimmunization) is a modified ECFT method. Mononuclear cells (lymphocytes and monocytes) of peripheral blood are subjected to UV-A irradiation for 90 minutes and then incubated for 20 hours at 37 °C. The ECFT method was first used by Richard Edelson in T-cell lymphoma at the University of Elles in the USA in 1984. In 2018, in the United States, the American Council for Extracorporeal Photochemotherapy was created. The directions of ECFT application were determined: 1) treatment of neoplastic diseases (lymphomas, ovarian cancer), 2) treatment of graft-versus-host disease, 3) treatment of autoimmune diseases. The ECFT method is used for psoriasis, lupus erythematosus, urogenital reactive arthritis (Reiter's disease), myasthenia gravis and multiple sclerosis. In Russia, we developed and developed our own device for conducting ECFT.

Material and Methods: 15 adult patients with relapsing course of multiple sclerosis were examined monthly for six months during translational immunotherapy (transimmunization). Clinical evaluation of the effectiveness of treatment was performed using the EDSS scale over time after each course of treatment and finally after 6 courses, i.e. 6 months. For the treatment used transimmunization - a modified method of FF. 2 hours prior to the procedure, patients were given orally amifurine (8-methoxypsoralen) and then, on a Haemonetics MCS + cell separator, mononuclear cells were isolated using the PBSC protocol. Next, mononuclear cells were subjected to UV irradiation for 90 min and incubation for 20 hours at 37 °C. The next day, the cells were reinfused to the patient. Clinical evaluation of the effectiveness of treatment was performed using the EDSS scale in dynamics after each course of treatment. The procedure was performed 2 times a week every month for 6 months. Then 1 time in 4 months.

Results: A positive clinical effect was obtained in 87% (in 47% - improvement and in 40% - stabilization of standing) for six months. In younger patients, the best results were obtained. With a shorter duration of the disease, the best effect from the treatment was noted. In 3% of cases there was no improvement and stabilization of the process.

Conclusion: Thus, transimmunization has a positive effect in adult patients with remittent course of multiple sclerosis. The shorter duration of the disease and the lighter condition of the patients is a factor in determining a more pronounced positive effect of transimmunization in multiple sclerosis.

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Biography

Olga Petrovna Sidorova graduated from Russian National Research Medical University named after N.I. Pirogov in Moscow, residency and graduate school in Neurology. She defended her doctoral dissertation in the specialty of Neurology. She works as a Professor in the Department of Neurology of the Faculty of Advanced Medical Doctors of the Moscow Regional Clinical Research Institute. The chief of Neurological Department is Professor Sergey Kotov. Her research interests - Mitochondrial disorders in neurological diseases, hereditary neurological diseases, myasthenia gravis, photopheresis (extracorporeal photochemotherapy) in autoimmune neurological diseases and porphyria in neurology (acute, chronic and latent course). Together with Hanns Lochmuller, a new mutation has been identified in the gene responsible for one of the forms of congenital myasthenic syndrome. Studies mitochondrial disorders using A.G.E. Pearse in patients with various neurological pathologies.

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