

# Cell technologies in the treatment of patients with postcovid syndrome

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## Abstract

The long-term consequences of SARS-CoV-2 infection are of increasing concern. "Post-COVID-19 syndrome" is characterized by impaired function not only of the lungs, but affects all levels of the nervous system. A search was carried out for literary sources (scientific articles), including those published in peer-reviewed journals indexed in pubmed, Wos, scopus and RSCI. 72 articles on cell technologies and immunotherapy in neurology were analyzed, of which 63 were included in this review. The inclusion of stem cells (SC) in rehabilitation programs for patients with various injuries and diseases of the central nervous system is a new, promising direction of research. Possible mechanisms of therapy for spinal cord injury based on the use of adult-type stem cells from the bone marrow, including CD34 +, include many aspects. On the background of SC transplantation, damaged nerve cells and surrounding tissues, including neurons and glial cells, can be restored, which helps to ensure the integrity of the nerve conduction pathway and, thus, restore nerve function. SA therapy can suppress genes involved in inflammation and apoptosis, as well as activate genes with neuroprotective action, thereby protecting spinal neurons from secondary damage. The introduction of autoCD34 + SC will be performed intrathecally by spinal (lumbar) puncture performed in the L2-L3 gap, under local anesthesia with 1% lidocaine solution. The dose of autoCD34 + SC is determined by the content of CD34 + cells and is not less than  $1 \times 10^6$  CD34 + cells per 1 injection. Autologous hematopoietic stem cells (HSC) obtained from the patient himself do not cause immunological conflicts, and, accordingly, do not require immunosuppressive therapy, unlike donor (allogeneic) and xenogenic cells.

## Biography

Maxim Yurievich Rykov, born May 22, 1980, was born in Moscow. Graduated from the medical faculty of the Sechenov University. In 2010 he graduated from the residency at the Department of Oncology, in 2013 he graduated from the postgraduate course. 2014 to 2015 From 2015 to 2016, he served as a researcher at the Department of Tumors of the Musculoskeletal System of the Research Institute of Pediatric Oncology and Hematology. - Researcher of the Department of Head and Neck Tumors, from 2015 to 2016. - Senior Researcher of the Social Pediatrics Laboratory of the Scientific Center for

Children's Health, from 2017 to 2018. - Senior Researcher of the Department of Head and Neck Tumors N, from 2016 to 2019. - Associate Professor of the Department of Oncology, Sechenov University, from 2018 to 2019. - Deputy Director for Prospective Development of the Research Institute of Pediatric Oncology and Hematology, from 2019 to 2021. - Associate Professor of the Department of Oncology, Sechenov University. Since 2021 - Vice-Rector for Research and Innovation, Professor of the Department of Oncology.