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CELLULAR THERAPIES AND NEURAL PRECURSORS IN THE ADULT BRAIN

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Summary

Modern medicine can treat relatively well many acquired and congenital diseases but still an effective and durable repair of the most of central nervous system disorders is beyond our capabilities. Therefore, comprehensive basic and preclinical studies are being carried out which would allow a better understanding of the reasons of these limits. They can potentially provide new strategies for neurodegenerative disorders, stroke, traumatic brain and spinal cord injury, and other diseases.

Some of the most promising approaches are cell therapies with the use of endogenous repair mechanisms, but also another direction might be provided with new exogenous cell therapies.

The article outlines the general reasons for the difficulties in the brain repair and discusses the phenomenon of new neurons in the brain of adult animals and humans, in the context of physiology and the brain injury. Promising strategies with neural precursors in the Central Nervous System repair are presented. Finally, promising state-of-the-art approaches with not typical cell subtypes of neuronal and glial precursors from the brain transplantation therapies are presented.