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Stem cell therapy in intracerebral hemorrhage rat model

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Abstract

Intracerebral hemorrhage (ICH) is a very complex pathology, with many different not fully elucidated etiologies and prognostics. It is the most severe subtype of stroke, with high mortality and morbidity rates. Unfortunately, despite the numerous promising preclinical assays including neuroprotective, anti-hypertensive, and anti-inflammatory drugs, to this moment only symptomatic treatments are available, motivating the search for new alternatives. In this context, stem cell therapy emerged as a promising tool. However, more than a decade has passed, and there is still much to be learned not only about stem cells, but also about ICH itself, and how these two pieces come together. To date, rats have been the most widely used animal model in this research field, and there is much more to be learned from and about them. In this review, we first summarize ICH epidemiology, risk factors, and pathophysiology. We then present different methods utilized to induce ICH in rats, and examine how accurately they represent the human disease. Next, we discuss the different types of stem cells used in previous ICH studies, also taking into account the tested transplantation sites. Finally, we summarize

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