Stem cell therapy for subarachnoid hemorrhage

- Dental Pulp Stem Cells Attenuate Early Brain Injury After Subarachnoid Hemorrhage via miR-26a-5p/PTEN/AKT Pathway
- Intranasal administration of stem cell-derived exosome alleviates cognitive impairment against subarachnoid hemorrhage
- Stem Cells Treatment for Subarachnoid Hemorrhage
- Meta-Analysis of the Therapeutic Effects of Stem Cell-Derived Extracellular Vesicles in Rodent Models of Hemorrhagic Stroke
- Promise of mesenchymal stem cell-derived extracellular vesicles for alleviating subarachnoid hemorrhage-induced brain dysfunction by neuroprotective and antiinflammatory effects
- Anti-BCMA/GPRC5D bispecific CAR T cells in patients with relapsed or refractory multiple myeloma: a single-arm, single-centre, phase 1 trial
- Dental pulp mesenchymal stem cell-derived exosomes inhibit neuroinflammation and microglial pyroptosis in subarachnoid hemorrhage via the miRNA-197-3p/FOXO3 axis
- Therapeutic potential of stem cells in subarachnoid hemorrhage

stem cell (SC) therapy has gradually become a very promising therapeutic method and advanced scientific research area for SAH.

The SCs used for SAH treatment are mainly bone marrow mesenchymal stem cells (BMSCs), umbilical cord mesenchymal stem cells (hUC-MSCs), dental pulp stem cells (DPSCs), neural stem cells (NSCs)/neural progenitor cell (NPC), and endothelial progenitor cell (EPC). The mechanisms mainly included differentiation and migration of SCs for tissue repair; alleviating neuronal apoptosis; anti-inflammatory effects; and blood-brain barrier (BBB) protection. The dosage of SCs was generally 106 orders of magnitude. The administration methods included intravenous injection, nasal, occipital foramen magnum, and intraventricular administration. The administration time is generally 1 hour after SAH modeling, but it may be as late as 24 hours or 6 days. Existing studies have confirmed the neuroprotective effect of SCs in the treatment of SAH.

SC has great potential application value in SAH treatment, a few case reports have provided support for this. However, the relevant research is still insufficient and there is still a lack of clinical research on the SC treatment for SAH to further evaluate the effectiveness and safety before it can go from experiment to clinical application [1)]

1)

Wang W, Wang Y, Gao L. Stem Cells Treatment for Subarachnoid Hemorrhage. Neurologist. 2024 Oct 25. doi: 10.1097/NRL.0000000000000589. Epub ahead of print. PMID: 39450602.