miR 200

miR 16, miR 143, and miR 200 showed statically significant higher expression among cases with cerebral aneurysms in comparison to controls. Thus, these preliminary results of miRNAs biomarkers are promising future tool to be used for aneurysmal screening [1)]

Spinal cord injury (SCI) is a common disease with high incidence, disability rate, and treatment cost. microRNA (miR)-200a is reported to inhibit Keap1 to activate Nrf2 signaling. This study aimed to explore the effects of lentivirus-mediated miR-200a gene-modified bone marrow mesenchymal stem cells (BMSCs) transplantation on the repair of SCI in a rat model. BMSCs were isolated from the bone marrow of Sprague-Dawley rats. miR-200a targeting to Keap1 was identified by luciferase-reporter gene assay. The expressions of Keap1, Nrf2, NQO-1, HO-1 and GCLC were detected by Western blotting in SCI rats. The locomotor capacity of the rats was evaluated using the Basso, Beattie and Bresnahan scale. The levels of malondialdehyde (MDA) and activities of superoxide dismutase (SOD) and catalase (CAT) were measured. miR-200a inhibited Keap-1 3' UTR activity in BMSCs. Transplantation of BMSCs with overexpression of miR-200a or si-Keap1increased locomotor function recovery of rats after SCI, while decreased MDA level, increased SOD, CAT activities and Nrf2 expression together with its downstream HO-1, NQO1, GCLC protein expressions in SCI rat. These results indicated that overexpressed miR-200a in BMSCs promoted SCI repair, which may be through regulating anti-oxidative signaling pathway [2)].

1)
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2)
Wang X, Ye L, Zhang K, Gao L, Xiao J, Zhang Y. Upregulation of microRNA-200a in bone marrow mesenchymal stem cells enhances the repair of spinal cord injury in rats by reducing oxidative stress and regulating Keap1/Nrf2 pathway. Artif Organs. 2020 Jan 29. doi: 10.1111/aor.13656. [Epub ahead of print] PubMed PMID: 31995644.