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## Effect of delayed post-treatment with adult-sourced adipose-derived mesenchymal stem cells on motor function and striatal medium-spiny projection neurons after neonatal rat hypoxia-ischemia

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**H**ypoxia-ischemia (HI) is a leading cause of neonatal brain injury. HI results in the loss of striatal medium-spiny projection neurons (MSPNs) and subsequent motor deficits. Adult-sourced adipose-derived mesenchymal stem cells (ADMSCs) have been shown to have neuroprotective and neuroregenerative effects. We investigated the effect of delayed post-treatment with ADMSCs on motor function and striatal MSPNs after neonatal rat HI. All animals were subjected to HI (P8-10) and then divided into four groups: HI+D<sub>1</sub> (14), HI+D<sub>2</sub> (16), HI+D<sub>3</sub> (15), and HI+D<sub>4</sub> (32). ADMSCs were injected into the striatum at 1, 2, 3, or 4 days post-HI. Motor function was assessed using the rotarod test and the open field exploration test. Striatal MSPNs were quantified using immunohistochemistry. ADMSCs significantly improved motor function and increased the number of striatal MSPNs in all groups compared to the HI+D<sub>0</sub> group. The effect of ADMSCs was most pronounced in the HI+D<sub>1</sub> group. These findings suggest that delayed post-treatment with ADMSCs may be a promising therapeutic approach for the treatment of neonatal brain injury.

### Notes: