Electroacupuncture for subarachnoid hemorrhage

Demyelination of white matter is correlated with cognitive deficit in SAH. Electroacupuncture (EA) is a traditional Chinese medical treatment which protects against cognitive deficit in varies of neurological diseases. However, whether EA exerts protective effect on cognitive function in SAH has not been investigated. The underlying mechanism of remyelination regulated by EA remains unclear. This study aimed to investigate the protective effects of EA on cognitive deficit in a rat model of SAH. SAH was induced in SD rats (n = 72) by endovascular perforation. Rats in EA group received EA treatment (10 min per day) under isoflurane anesthesia after SAH. Rats in SAH and sham groups received the same isoflurane anesthesia with no treatment. The mortality rate, neurological score, cognitive function, cerebral blood flow (CBF), and remyelination in sham, SAH and EA groups were assessed at 21 d after SAH.EA treatment alleviated cognitive deficits and myelin injury of rats compared with that in SAH group. Moreover, EA treatment enhanced remyelination in white matter and promoted the differentiation of OPCs after SAH. EA treatment inhibited the expression of Id2 and promoted the expression of SOX10 in oligodendrocyte cells. Additionally, the cerebral blood flow (CBF) of rats was increased by EA compared with that in SAH group. EA treatment exerts protective effect against cognitive deficit in the late phase of SAH. The underlying mechanisms involve promoting oligodendrocyte progenitor cell (OPC) differentiation and remyelination in white matter via regulating the expression of Id2 and SOX10. The improvement of CBF may also account for the protective effect of EA on cognitive function. EA treatment is a potential therapy for the treatment of cognitive deficit after SAH [1)].

1)
Wang Y, Yang X, Cao Y, Li X, Xu R, Yan J, Guo Z, Sun S, Sun X, Wu Y. Electroacupuncture promotes remyelination and alleviates cognitive deficit via promoting OPC differentiation in a rat model of subarachnoid hemorrhage. Metab Brain Dis. 2022 Nov 16. doi: 10.1007/s11011-022-01102-5. Epub ahead of print. PMID: 36383326.

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Last update: **2024/06/07 02:59**