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脉冲磁场对脑缺血大鼠的作用及其IGF-1表达的变化 [点此下载全文](#)

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摘要:

目的: 研究脉冲磁场对脑缺血大鼠的作用及胰岛素样生长因子-1 (insulin-like growth factor-1, IGF-1) 表达的变化。方法: 48只SD大鼠随机分为3组: 假手术组、模型组和磁疗组, 每组16只。模型组和磁疗组采用线栓法制备大鼠局灶性脑缺血再灌注损伤模型, 假手术组除不插线外其余步骤同模型组。磁疗组于缺血2h再灌注2h时即刻用脉冲磁场进行处理 (0—10.5mT, 频率50Hz, 20min/次, 1次/d)。每只大鼠于再灌注后第2小时、1天、3天、7天进行神经功能评分。脑缺血再灌注第7天时, 各组取8只大鼠灌注, 在视交叉前后1-3mm之间取脑片, 光镜下观察病理改变, 免疫组化法测IGF-1阳性表达。另8只断头取脑, TTC染色测脑梗死面积。结果: 与模型组相比, 磁疗组大鼠再灌注第7天时神经功能评分减少 (0.31 ± 0.48) ($P < 0.05$); 脑梗死面积显著缩小 (11.8 ± 1.47) ($P < 0.05$); 病理损害减轻, 半暗带坏死区胶质细胞增生更加明显, 形成胶质结节; 大脑皮质IGF-1免疫反应阳性细胞计数明显增多 (32.48 ± 1.52) ($P < 0.05$)。结论: 脉冲磁场可减轻大鼠的脑缺血性损伤, 此作用可能与IGF-1的表达有关。

关键词: [脑缺血再灌注](#) [胰岛素样生长因子-1](#) [磁场](#) [大鼠](#)

Effects of pulse magnetic field on brain injury and insulin-like growth factor-1 expression in rats with cerebral ischemia-reperfusion [Download Fulltext](#)

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Abstract:

Objective: To study the effects of pulse magnetic field on brain injury and insulin-like growth factor-1 (IGF-1) expression in rats with cerebral ischemia-reperfusion. Method: Forth-eight SD rats were divided into 3 groups: sham-operation group, model group and magnetic therapy group, 16 rats were in each group. The rats in model group and magnetic therapy group were established focal cerebral ischemia-reperfusion model by thread occlusion method. After ischemia 2h and reperfusion 2h the rats in magnetic therapy group were immediately treated by pulse magnetic field (0—10.5mT, 50Hz, 20min/times, 1 times/day, everyday till the rats were decapitated). The neurological function assessment was applied for every rat after reperfusion 2h, 1d, 3d, 7d. After reperfusion 7d, the changes of pathology, infarct size in brain tissue and IGF-1 expression, were observed. Result: Compared with model group, in magnetic therapy group, at the 7th d after reperfusion the neurologic deficit scores were significantly lessen (0.31 ± 0.48) ($P < 0.05$), the injury degree of neuron greatly reduced, the infarction area markedly decreased ($P < 0.05$), and the number of IGF-1 positive neuron increased significantly ($P < 0.05$). Conclusion: Pulse magnetic field can reduce the brain injury in rats with cerebral ischemia-reperfusion, this effects might be associated with IGF-1 expression.

Keywords: [cerebral ischemia-reperfusion](#) [insulin-like growth factor-1](#) [magnetic field](#) [rat](#)

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