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运动训练对脑梗死大鼠运动功能及Nogo-A/NgR1/Rho-A表达的影响 [点此下载全文](#)

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摘要:

摘要目的:明确运动训练对脑梗死大鼠运动功能的改善及神经修复的影响,探讨轴突生长有关因子Nogo-A/NgR1/Rho-A通路在其中的作用机制。**方法:**采用电凝法建立肾血管性压大鼠的右侧大脑中动脉闭塞(MCAO)模型,随机分为3组:假手术组、运动训练组、对照组;各组分别在造模后7d、14d、28d和52d进行大鼠前肢抓握力评定,并取材进行尼氏染色形态学变化,Western blot检测Nogo-A、NgR、Rho-A蛋白表达。**结果:**梗死后7d、14d、28d及52d四个时间点,训练组较对照组大鼠抓握力改善($P<0.05$);梗死后7d开始,梗死周围皮层神经元逐渐减少,各时间点训练组较对照组存活神经元增多($P<0.05$);通过Western blot检测,运动训练7d和14d可降低Nogo-A的表达,运动训练7d、14d和28d可降低受体NgR的表达,训练14d和28d使下游信号分子Rho-A蛋白的表达减少,和对照组相比,差异均有显著性意义($P<0.05$)。**结论:**运动训练可促进脑梗死大鼠肢体运动功能的改善,对受损的神经系统具有一定的保护作用,并通过下调Nogo-A/NgR/Rho-A蛋白水平减少其对神经轴突的抑制。

关键词: [运动训练](#) [脑梗死](#) [Nogo-A](#) [NgR](#) [Rho-A](#)

Effects of exercise training on motor function and expressions of Nogo-A/NgR/Rho-A protein following cerebral infarction in rats [Download Fulltext](#)

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Abstract:

Abstract Objective: To study the effects of exercise training on recovery of motor function and neurons following cerebral infarction, and to explore the involvement of axon growth related factor Nogo-A/NgR1/Rho-A pathway. **Method:** Right middle cerebral artery occlusion(MCAO) model was replicated by electric coagulation on stroke-prone renovascular hypertensive Sprague-Dawley rats. The rats were randomly divided into three groups: sham group, exercise training group, control group; Each group was assessed for forelimb grip strength. The morphological changes by Nissl staining was observed. The expressions of Nogo-A, NgR, Rho-A proteins were detected by Western blot at 7d, 14d, 28d, and 52 days after modeling. **Result:** The grip strength was higher in training group than that in control group at 7d, 14d, 28d and 52d after cerebral infarction ($P<0.05$); The neurons in the peripheries region of infarct focus gradually reduced from 7d after cerebral infarction, and compared with control group, the training group had more neurons survived at each time point ($P<0.05$); Exercise training (7d, 14d) can reduce the expressions of Nogo-A, exercise training(7d, 14d and 28d) can reduce the expressions of receptor NgR, exercise training (14d, 28d) can down-regulate the expressions of Rho-A protein. The differences between exercise training group and control group were statistically significant ($P<0.05$). **Conclusion:** Exercise training could promote the recovery of limb function after cerebral infarction, and showed protective effect on the damaged nervous system. Through down-regulation of Nogo-A/NgR/Rho-A protein levels, exercise training might reduce inhibition on axons and improve axonal regeneration microenvironment.

Keywords: [exercise training](#) [cerebral infarction](#) [Nogo-A](#) [NgR](#) [Rho-A](#)

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