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跑台训练对大鼠脑缺血再灌注后脑组织toll样受体2、toll样受体4信号转导通路活性的影响 [点此下载全文](#)

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摘要:

摘要目的:探讨跑台训练对大鼠脑缺血再灌注神经功能恢复和脑组织toll样受体2 (TLR2)、toll样受体4 (TLR4)、核转录因子- κ B (NF- κ B)与髓样分化因子(MyD88)信号转导通路活性的影响。**方法:**用线栓法制作Wistar大鼠大脑中动脉缺血再灌注模型, 35只大鼠随机分为假手术组(SH组)、跑台训练组(O+TR组)和手术对照组(OC组)。O+TR和OC组又分为跑3d、跑7d、跑14d 3个亚组, 各亚组及SH组每组5只大鼠。O+TR组于术后第3天开始给予跑台训练, SH组及OC组不予跑台训练。于跑3d、跑7d、跑14d 3个时间点进行神经功能评估后处死大鼠。采用RT-PCR和Western-blot技术测定大鼠梗死组织TLR2、TLR4及下游因子MyD88、NF- κ B的转录活性及蛋白表达的水平。结果: O+TR组在跑3d、7d、14d神经功能评分明显优于OC组($P < 0.05$)。TLR2、TLR4、MyD88及NF- κ B表达O+TR组与OC组均较SH组高, 3d组表达最多, 之后呈逐渐下降的趋势, 但O+TR组表达均较OC低($P < 0.05$)。结论: 跑台训练通过降低大鼠脑组织缺血再灌注后上调的TLR2、TLR4及下游因子MyD88、NF- κ B的表达, 抑制脑组织炎症反应, 从而有利于脑缺血后神经功能的恢复。

关键词: [跑台训练](#) [脑梗死](#) [toll样受体](#)

Effects of treadmill training on toll-like receptor 2 and toll-like receptor 4 signaling pathway in brain ischemia-reperfusion area of rats after cerebral infarction [Download Fulltext](#)

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Abstract:

Abstract Objective: To study the effects of treadmill training on the recovery of neurological function and expressions of toll-like receptor 2 (TLR2), toll-like receptor 4 (TLR4), nuclear factor- κ B (NF- κ B) and myeloid differentiation factor 88 (MyD88) in brain ischemia-reperfusion area of rats after cerebral ischemia-reperfusion. **Method:** The brain ischemia-reperfusion rats model was made by middle cerebral artery occlusion (MCAO) with Zea Longa thread embolism method. A total of 35 male Wistar rats were randomly divided into sham operation group (SH group), operation+treadmill running group (O+TR group) and the operation control group (OC group) randomly. O+TR group and OC group were divided into three sub-groups respectively by different observation time points: 3rd, 7th and 14th 5 rats in each subgroup. O+TR group was given treadmill training after the 3rd day post-operation. Neurological function was measured before the operation, at the 3rd, 7th and 14th after the beginning of exercise respectively. After measurement the rats were sacrificed, RT-PCR and Western-blot techniques were used to detect the expressions of TLR2, TLR4, NF- κ B and MyD88 in the ischemic brain at the 3rd, 7th and 14th. **Result:** Compared with those in OC groups, the behavioral outcome in O+TR group was much better at the 3rd, 7th and 14th ($P < 0.05$). O+TR group and OC group had obvious higher expression level of TLR2, TLR4, MyD88 and NF- κ B as compared to SH group, especially in 3d subgroup ($P < 0.05$). However, after 3d, 7d and 14d of treadmill training, expression attenuation of messenger RNA of TLR2, TLR4, MyD88 and NF- κ B took place significantly in O+TR group compared to OC group ($P < 0.05$). **Conclusion:** The over-expressions of TLR2, TLR4, NF- κ B, MyD88 in brain ischemic area can be lessened through treadmill training. Movement therapy promotes recovery of neurological function maybe by reducing TLR2 and TLR4 related inflammatory reaction after cerebral ischemia injury.

Keywords: [treadmill training](#) [cerebral infarction](#) [toll-like receptor](#)

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