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水中运动训练对恢复期脑卒中患者下肢肌肉力量和步行能力的影响 [点此下载全文](#)

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摘要:

**摘要目的:** 探讨水中运动训练对恢复期脑卒中患者下肢肌肉力量、痉挛程度和步行能力的影响。**方法:** 初次发病的恢复期脑卒中患者(n=20, 年龄 $41.5 \pm 16.5$ 岁), 随机分为两组, 每组10例。一组为对照组, 只进行常规康复训练, 另一组为水疗组, 每周进行3—4次水中运动训练, 其他时间做常规康复训练。两组治疗总时间相同, 观察4周, 水疗共14次。于训练前后评价患侧膝和踝屈伸肌的最大等长收缩(MIVC)肌力、下肢痉挛状况、运动功能和步行能力的改变, 用t检验进行分析比较。**结果:** 经过4周训练, 水疗组患者踝跖屈时腓肠肌等长收缩力矩显著提高( $3.6 \pm 0.3$  vs  $0.6 \pm 0.2$ ,  $P < 0.05$ ), 患者步行能力( $3.5 \pm 1.5$  vs  $2.7 \pm 1.2$ )、下肢运动功能( $29.7 \pm 3.5$  vs  $27.8 \pm 2.6$ )及平衡功能评分( $11.5 \pm 3.3$  vs  $9.3 \pm 2.9$ )显著提高( $P < 0.05$ ); 在训练前后患者股直肌与腓肠肌痉挛并无显著性改变( $P > 0.05$ )。**结论:** 短期水中运动训练可以增强恢复期脑卒中患者患侧踝跖屈肌力, 且不强化痉挛, 有利于提高患者下肢功能和步行能力。

**关键词:** [水中运动](#) [脑卒中](#) [肌肉力量](#) [痉挛](#)

The effects of underwater exercise on lower limb muscle strength and walking ability of stroke patients during recovering stage [Download Fulltext](#)

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Abstract:

**Abstract Objective:** To investigate the effects of underwater exercise on lower limb muscle strength, spasticity and walking ability of stroke patients during recovering stage. **Method:** The patients [n=20, age: ( $41.5 \pm 16.5$ ) years], who suffered from stroke during recovering stage, were randomly allocated into two groups: hydrotherapy group and control group, each group 10 patients. Routine rehabilitation exercises were performed in control group. The 25min underwater exercise, three or four sessions a week, were performed in hydrotherapy group in addition to routine rehabilitation exercise. Both groups took the same therapeutic time for each session, 45min, 5 times a week, 14 times, for four weeks. The strength of maximum isometric voluntary contraction(MIVC) of flexion and extension of paretic knee and ankle, lower limb spasticity, motor function and walking ability of patients were assessed before and after exercises. t-test statistical analyses was used to compare the differences. **Result:** In hydrotherapy group after 4 weeks exercise the gastrocnemius isometric contraction torque during ankle plantation demonstrated significant increase( $3.6 \pm 0.3$  vs  $0.6 \pm 0.2$ ,  $P < 0.05$ ). The significant increase of lower limb motor function ( $3.5 \pm 1.5$  vs  $2.7 \pm 1.2$ ), walking ability ( $29.7 \pm 3.5$  vs  $27.8 \pm 2.6$ ) and equilibrium function ( $11.5 \pm 3.3$  vs  $9.3 \pm 2.9$ ) were found( $P < 0.05$ ). There was no significant change of spasticity of rectus femoris and gastrocnemius pre- and post-exercises ( $P > 0.05$ ). **Conclusion:** The short period underwater exercise could enhance the muscular strength of paretic ankle flexion without increasing spasticity of stroke patients during recovering stage. It is beneficial for improving lower limb motor function and walking ability of stroke patients.

**Keywords:** [underwater exercise](#) [stroke](#) [muscle strength](#) [spasticity](#)

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