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摘要:

**摘要目的:** 观察运动对自发性高血压大鼠 (SHR) 主动脉一氧化氮合酶 (NOS)、一氧化氮 (NO)、胱硫醚- $\gamma$ -裂解酶 (CSE) 和硫化氢 (H<sub>2</sub>S) 的影响, 探讨运动干预后SHR大鼠内源性NO的变化对主动脉CSE/H<sub>2</sub>S体系的调节作用。**方法:** 选用雄性SHR大鼠16只, 随机分为高血压对照组 (SC组) 和高血压运动组 (ST组), 每组8只。同时选用雄性Wistar大鼠8只, 为正常对照组 (WC组)。ST组大鼠进行8周、每周6次、每次90min中等强度的无负重游泳运动。**结果:** 8周90min游泳运动后, SC组大鼠血压较实验前显著升高 ( $P < 0.01$ ), ST组大鼠血压较SC组大鼠血压显著下降 ( $P < 0.01$ ), 且与实验前相比无显著性差异 ( $P > 0.05$ ); ST组大鼠较SC组大鼠主动脉NOS、NO、CSE和H<sub>2</sub>S水平显著升高 ( $P < 0.05$ )。**结论:** 运动可抑制SHR的血压上升, 增加SHR主动脉NOS和NO的含量, 内源性NO对SHR主动脉CSE/H<sub>2</sub>S体系在运动缓解血压上升中呈促进作用, 这一过程参与了运动降压的调控机制。

**关键词:** [高血压](#) [运动](#) [一氧化氮](#) [胱硫醚- \$\gamma\$ -裂解酶](#) [硫化氢](#)

Effects of swimming exercise on nitric oxide and CSE/H<sub>2</sub>S in spontaneously hypertensive rats [Download Fulltext](#)

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Abstract:

**Abstract Objective:** To study the effects of exercises on blood pressure and aorta nitric oxide synthase (NOS), nitric oxide (NO), cystathionine- $\gamma$ -lyase (CSE) and hydrogen sulfide in spontaneously hypertensive rats (SHR), then to explore the regulation effects of exercise on endogenous NO and aorta CSE/H<sub>2</sub>S in SHR. **Method:** Sixteen male SHR were randomly divided into the SHR control group (SC) and SHR training group (ST); 8 rats in each group. Eight male Wistar rats were the normal matched control group (WC). ST group carries on 90 min moderate swimming, without load, 6 times a week. All rats feed normal feedstuff for 8 weeks. And then the rats' blood pressure (BP) were measured each week during experimental period, the contents of aorta NOS, NO, CSE and H<sub>2</sub>S were examined. **Result:** After 8-weeks swimming exercise, the BP in SHR training group was little higher than before, but no significant difference. However, in SHR control group it was just opposite ( $P < 0.01$ ); the levels of aorta NOS, NO, CSE and H<sub>2</sub>S in SHR training group were significantly elevated ( $P < 0.05$ ). **Conclusion:** Swimming exercise can inhibit the elevation of BP, increase the levels of aorta NOS and NO in SHR, and endogenous NO can promote the aorta CSE/H<sub>2</sub>S system in the process of exercise depressing the blood pressure elevation.

**Keywords:** [hypertension](#) [exercise](#) [nitric oxide](#) [cystathionine- \$\gamma\$ -lyase](#) [H<sub>2</sub>S](#)

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