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心肌缺血和有氧运动训练诱导VEGF表达时间规律的实验研究 [点此下载全文](#)

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摘要:

**摘要 目的:** 研究心肌缺血和有氧运动训练诱导血管内皮细胞生长因子(VEGF)表达的时间规律。**方法:** 成功建模的健康成年巴马小型猪24只, 体重 $23.7 \pm 4.0$ kg, 随机分为对照组、缺血组和运动组。将可控性气囊梗阻器安装在猪冠状动脉钝缘支处, 建立可控性猪心肌缺血模型。对照组不进行缺血刺激和有氧运动训练; 缺血组进行单纯缺血刺激, 2min/次, 2次/d, 持续缺血刺激8周; 运动组除进行缺血刺激外, 每天进行一次平板有氧运动训练, 每次30min。每两周取动脉血, 采用ELISA法检测血液VEGF。实验终点时采用Western Blot检测缺血区心肌VEGF。**结果:** 缺血组第2周血液中VEGF的表达量明显高于实验前( $P < 0.05$ ), 随后进入平台期( $P > 0.05$ )。运动组中第2-4周血液中VEGF的表达量持续增高( $P < 0.05$ ), 随后达到平台期( $P > 0.05$ )。缺血区心肌VEGF表达和血液VEGF表达呈正相关( $r = 0.826, P < 0.01$ )。**结论:** 心肌缺血和有氧运动训练诱导的血液VEGF增高分别在第2周和第4周达到高峰, 然后进入平台期。**关键词:** 心肌缺血; 有氧运动; 血管内皮细胞生长因子 **中图分类号:** R493, R541.4 **文献标识码:** A **文章编号:** 1001-1242(2008)-03-0193-05

**关键词:** [心肌缺血](#) [有氧运动](#) [血管内皮细胞生长因子](#)

Temporal phenomenon of myocardial ischemia and aerobic exercises-induced VEGF expression: an experimental study [Download Fulltext](#)

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Abstract:

**Objective:** To study the temporal phenomenon of myocardial ischemia and aerobic exercises training induced expression of vascular endothelial growth factor(VEGF) in swine. **Method:** Twenty-four miniature swines were randomly assigned to control group(CG), ischemia group(IG) and exercises group(EG). A controllable hydraulic balloon catheter was placed at the first marginal branch of left circumflex coronary artery. A model of controllable myocardial ischemia was established. Subjects in IG and EG received transient coronary occlusion for 2min repeated twice a day for 8weeks. Subjects in EG received 30 min aerobic exercises training on treadmill with intermittent high intensity 2min duration which repeated twice a session. Blood samples were obtained every 2 weeks. The ischemic area of the myocardium was also sampled after the completion of 8-week experiment. VEGF in serum were analyzed by ELISA and VEGF in myocardium was measured by Western Blot. **Result:** VEGF serum level on week 2 in IG was significantly higher than that in CG ( $P < 0.05$ ) and then reached plateau ( $P > 0.05$ ). EG demonstrated the significant increase of VEGF from baseline to week 4 ( $P < 0.05$ ), and then reached the plateau ( $P > 0.05$ ). VEGF in serum was positively correlated that in myocardium( $r = 0.826, P < 0.01$ ). **Conclusion:** Intermittent myocardial ischemia and aerobic exercises training induced VEGF expression reaches peak on week 2 and week 4 respectively, and then reaches plateau.

**Keywords:** [myocardial ischemia](#) [aerobic exercises training](#) [vascular endothelial growth factor](#)

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