

论著

不同间期慢性低O₂高CO₂肺动脉高压大鼠血管内皮生长因子的变化

陈彦凡¹, 陈少贤¹, 范小芳¹, 黄卡特², 王良兴¹

温州医学院附属第一医院1肺科, 2病理科, 浙江 温州 325000

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摘要 目的: 观察不同间期低O₂高CO₂大鼠肺循环中血管内皮生长因子(VEGF)水平的变化。方法: 采用ELISA法、透射电镜、免疫组化和原位杂交等方法, 观察低O₂高CO₂2周组(T组)、低O₂高CO₂4周组(F组)、低O₂高CO₂8周组(E组)大鼠肺动脉平均压(mPAP)、右心室重量比(RV/LV+S)、血清和肺组织VEGF的含量、肺细小动脉的超微结构、肺组织VEGF及VEGF mRNA表达的变化。结果: T、F、E组大鼠的mPAP、RV/LV+S、血清和肺组织VEGF的含量以及VEGF及其mRNA的表达明显高于正常对照组。随低O₂高CO₂间期的延长, 各组大鼠内皮细胞逐渐向管腔凸起, 基底变窄, 中膜平滑肌细胞、胶原纤维明显增多。结论: 低O₂高CO₂刺激肺细小动脉壁VEGF mRNA表达增加, 导致VEGF的合成和分泌增多, 后者可能参与慢性低氧性肺动脉高压的形成和肺细小动脉壁的重建。

关键词 [缺氧](#); [高碳酸血症](#); [高血压,肺性](#); [血管内皮生长因子](#)

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Changes of vascular endothelial growth factor in chronic pulmonary hypertension rats with different hypoxia and hypercapnia duration

CHEN Yan-fan¹, CHEN Shao-xian¹, FAN Xiao-fang¹, HUANG Ka-te², WANG Liang-xing¹

1Department of Lung, 2Department of Pathology, The First Affiliated Hospital of Wenzhou Medical College, Wenzhou 325000, China

Abstract

AIM: To investigate the changes of vascular endothelial growth factor (VEGF) in the pulmonary circulation of rats with different hypoxia and hypercapnia duration. METHODS: Forty SD rats were randomly divided into normol control group (N), exposed to hypoxia hypercapnia for 2 weeks group (T), for 4 weeks group (F), for 8 weeks group (E). The levels of VEGF were measured and the ultrastructure of pulmonary arterioles was observed by electron microscopy. RESULTS: Mean pulmonary arterial pressure (mPAP), weight ratio of RV to LV+S, the levels of VEGF in serum and lung tissue, the expression of VEGF and VEGF mRNA in group T, F, E were significantly higher than that in group N. With the prolong duration, base of endothelial cell was narrowed, proliferation of smooth muscle cells and collagenous fibers of pulmonary arterioles in rats were increased gradually. CONCLUSIONS: Hypoxia and hypercapnia increase the expression of VEGF mRNA and synthesis of VEGF. VEGF may play an important role in the pathogenesis of hypoxia pulmonary hypertension and reconstruction of pulmonary artery.

Key words [Anoxia](#) [Hypercapnia](#) [Hypertension](#) [pulmonary](#) [Vascular endothelial growth factors](#)

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通讯作者 陈彦凡 chenyf2605@163.com

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