

论文

高原低氧环境对大鼠肺组织影响

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摘要:

目的 观察高原低氧对大鼠肺组织超微结构影响及其低氧诱导因子1 $\alpha$ (HIF-1 $\alpha$ )表达变化。方法 将SD大鼠分别进行高原低氧干预1、2、3和30 d,并设置对照组;4个高原低氧组由海拔5 m的西安地区途中耗时1d带到海拔2 700 m青海格尔木地区、途中耗时2 d带到海拔5 000 m唐古拉地区,途中耗时3d带到海拔4 500 m的西藏那曲地区,并饲养30 d。结果 光镜及电镜观察显示,急性高原低氧2 d组肺组织出现明显高原肺水肿,高原低氧30 d组HIF-1 $\alpha$ mRNA条带积分吸光度值(0.874 $\pm$ 0.075)明显高于对照组(0.225 $\pm$ 0.026)( $P$ <0.01),高原肺水肿现象则明显减轻。结论 低氧习服后肺组织低氧诱导因子1 $\alpha$ mRNA表达升高,有利于减轻高原肺水肿。

关键词: 低氧诱导因子1 $\alpha$  高原习服 超微结构

Lung tissue ultrastructure and hypoxia-inducible factor 1 alpha expression of lung tissue in rats exposed to high altitude hypoxia

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Abstract:

Objective To examine the effects of high altitude hypoxia on ultrastructure and hypoxia-inducible factor 1 $\alpha$ (HIF-1 $\alpha$ )expression of lung tissue in the rats with high altitude hypoxia exposure. Methods Forty SD rats were exposed to high altitude hypoxia for 1,2,3,and 30 days,respectively,and a control group(10 rats)was set.The 4 altitude hypoxia groups were transported from the place of 5 m above sea level to the place of 2 700 m above sea level within one hour,to the place of 5 000 m above sea level within 2 hours,and to the place of 4 500 within 3 hours and raised at the place for 30 days. Results Light microscopy and electron microscopy showed that in 2 days acute high altitude hypoxia group there was apparent high altitude pulmonary edema.For the rats with high altitude hypoxia of 30 days,HIF-1 $\alpha$  mRNA band integral absorbance values(0.874 $\pm$ 0.075)was significantly higher compared with the control group (0.225 $\pm$ 0.026, $P$ <0.01)and high-altitude pulmonary edema was significantly reduced. Conclusion Hypoxic acclimatization could increase the expression of hypoxia-inducible factor 1 $\alpha$ mRNA and reduce the high altitude pulmonary edema of lung tissue in rats.

Keywords: hypoxia-inducible factor 1 $\alpha$  plateau acclimatization ultrastructure

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