

论文

间歇性重度低氧对大鼠学习记忆影响

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摘要:

目的 建立不同暴露时间点大鼠间歇重度低氧模型,探讨间歇重度低氧对大鼠学习记忆功能的影响。**方法** 成年雄性Wistar大鼠48只分为对照组和间歇性低氧组;采用低氧舱模拟5%间歇低氧环境。在间歇低氧2、4、6、8周采用Morris水迷宫检测学习记忆功能,苏木精-伊红(HE)染色观察海马区神经细胞形态变化。**结果** 与对照组比较,间歇性低氧组中神经细胞形态结构损伤明显,存活神经元密度(13.18 ± 2.18)随低氧时间延长降低($P < 0.05$);低氧2、4、6、8周大鼠逃避潜伏期时间分别为(49.17 ± 8.87)、(58.47 ± 6.98)、(65.15 ± 7.44)和(68.42 ± 7.91)s,随低氧时间延长动物逃避潜伏期时间延长($P < 0.5$)。**结论** 间歇性低氧可造成神经细胞损伤、学习记忆功能障碍,且随间歇性低氧时间延长而加重。

关键词: 间歇性重度低氧 学习记忆功能 Morris水迷宫

Effects of intermittent serious hypoxia on learning and memory function in rats

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Abstract:

Objective To establish a hypoxia animal model with different exposed periods and severe intermittent hypoxia and to explore effects of severe intermittent hypoxia on learning and memory function in rats. **Methods** Male Wistar rats ($n=48$) were randomly divided into chronic intermittent hypoxia group and control group. The 5% hypoxia model was made with hypoxia box. At 2, 4, 6, and 8 weeks after hypoxia, the morphologic changes of neuron were observed with HE staining. The learning and memory ability of the rats were assessed with Morris water maze. **Results** Compared with the control group, neuronal morphologic structure in the hypoxia group was damaged significantly. The survival neuronal density was decreased with prolonged hypoxia (13.18 ± 2.18). The mean of escaping latency period was 49.17 ± 8.87 , 58.47 ± 6.98 , 65.15 ± 7.44 , and 68.42 ± 7.91 seconds at 2, 4, 6, and 8 weeks in intermittent hypoxia group, which was decreased with prolonged hypoxia ($P < 0.5$). **Conclusion** Intermittent hypoxia can cause nerve cell damage and learning memory dysfunction. The damage increases with the prolonged intermittent hypoxia.

Keywords: intermittent serious hypoxia function of learning and memory Morris water maze

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