

论文

氯胺酮对食蟹猴脑血管病理及NADPH氧化酶表达的影响

朱薇<sup>1, 2</sup>, 潘芳<sup>1</sup>, 江虹<sup>1</sup>, 于洪鸾<sup>1</sup>, 孙琳<sup>1</sup>, 王力<sup>1</sup>

1. 山东大学医学院心理学研究所, 济南 250012; 2. 山东医学高等专科学校, 济南 250002

摘要:

目的 探讨氯胺酮连续给药对食蟹猴大脑动脉(动脉环交通支)形态及烟酰胺腺嘌呤二核苷酸磷酸盐(NADPH)氧化酶表达的影响。方法 随机将12只雄性食蟹猴分为生理盐水组(4只)和氯胺酮组(8只, 1mg/kg), 6个月后处死动物, 采用HE染色法观察大脑动脉的形态变化, 比色法测定H<sub>2</sub>O<sub>2</sub>的水平, Western blot法和免疫组织化学染色检测血管中NADPH氧化酶的表达水平。结果 连续注射氯胺酮6个月后, NADPH氧化酶表达增加, 血清和血管组织内活性氧(ROS)水平明显升高, 大脑动脉形成血栓及炎症反应。结论 氯胺酮诱导食蟹猴脑血管疾病的发生与NADPH氧化酶表达增加具有相关性。

关键词: 氯胺酮; 成束猴; NADPH氧化酶; 活性氧

Effects of ketamine on cerebrovascular pathology and NADPH oxidase activation in cynomolgus monkeys

ZHU Wei<sup>1,2</sup>, PAN Fang<sup>1</sup>, JIANG Hong<sup>1</sup>, YU Hong-luan<sup>1</sup>, SUN Lin<sup>1</sup>, WANG Li<sup>1</sup>

1. Institute of Medical Psychology, School of Medicine, Shandong University, Jinan 250012, China;

2. Shandong Medical College, Jinan 250002, China

Abstract:

Objective To explore the effect of long-term administration of ketamine on cerebrovascular (communicating branches of the cerebral arterial circle) pathology and nicotinamide adenine dinucleotide phosphate(NADPH) oxidase activation in cynomolgus monkeys. Methods Twelve male monkeys were randomly divided into the experimental group and the control group, six in each group. Monkeys in the experimental group were injected with ketamine at 1mg/kg, while the control group received normal saline. 6 months later, the monkeys were sacrificed. Cerebrovascular pathology was observed by HE staining. Reactive oxygen species (ROS) level was expressed as the decrement of H<sub>2</sub>O<sub>2</sub> with the biochemical method. NADPH oxidase activation was observed by immunohistochemistry and Western blot. Results The experimental group showed a significant increase in NADPH oxidase activation and ROS level compared with the control group. Thrombus and inflammatory cells infiltration were observed in the cerebrovascular tissue of the experimental group. Conclusion Long-term administration of ketamine up-regulate NADPH oxidase level leading to cerebrovascular pathological changes.

Keywords: Ketamine; Macaca fascicularis; NADPH oxidase; Reactive oxygen species

收稿日期 2010-12-07 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 潘芳(1962-), 女, 教授, 主要从事医学心理学的研究。E-mail: panfang2003@hotmail.com

作者简介: 朱薇(1980-), 女, 硕士研究生, 主要从事医学心理学的研究。E-mail: vivizu@sina.com

作者Email:

参考文献:

本刊中的类似文章

扩展功能

本文信息

Supporting info

PDF(855KB)

[HTML全文]

参考文献[PDF]

参考文献

服务与反馈

把本文推荐给朋友

加入我的书架

加入引用管理器

引用本文

Email Alert

文章反馈

浏览反馈信息

本文关键词相关文章

氯胺酮; 成束猴; NADPH氧化酶; 活性氧

本文作者相关文章

PubMed