

论著

己酮可可碱和咯利普兰对淀粉样 β 蛋白诱导脑损伤后学习记忆功能的影响

徐永祥, 汪海涛, 徐江平*

(南方医科大学药学院药理学系, 广东 广州 510515)

收稿日期 2007-10-15 修回日期 网络版发布日期 2008-6-12 接受日期 2008-1-16

摘要 目的 探讨磷酸二酯酶抑制剂对淀粉样 β 蛋白($A\beta$)诱导的脑损伤大鼠学习记忆功能的改善作用及可能机制。方法 SD大鼠分为假手术对照组、模型组、己酮可可碱(PTX)16.5 mg·kg⁻¹组和咯利普兰1 mg·kg⁻¹组。模型组及给药组大鼠两侧海马内分别注射 $A\beta_{25-35}$ 5 μ L, 术后24 h给药组ip给药, 每日1次, 连续14 d。给药7 d后进行避暗实验, 14 d后进行Morris水迷宫实验观察行为学变化。之后处死大鼠, 用放射免疫法测定海马组织cAMP含量。结果 与模型组比较, PTX组和咯利普兰组大鼠在避暗实验中潜伏期明显延长, 在水迷宫实验中寻台时间明显缩短, 海马组织cAMP水平显著升高。结论 升高脑内cAMP水平可能是磷酸二酯酶抑制剂PTX和咯利普兰增强 $A\beta$ 脑损伤大鼠学习记忆功能的机制之一。

关键词 [磷酸二酯酶抑制剂](#) [己酮可可碱](#) [咯利普兰](#) [淀粉样 \$\beta\$ 蛋白](#) [环AMP](#) [学习](#) [记忆](#)

分类号 [R971](#)

Effects of pentoxifylline and rolipram on learning and memory abilities after brain impairment induced by amyloid β -protein

XU Yong-Xiang, WANG Hai-Tao, XU Jiang-Ping*

(Department of Pharmacology, School of Pharmacy, Southern Medical University, Guangzhou 510515, China)

Abstract

AIM To investigate the effects of phosphodiesterase inhibitors on learning and memory impairment induced by amyloid β -protein ($A\beta$) and the possible underlying mechanisms. **METHODS** SD rats were randomly divided into 4 groups: sham operated group, model group, pentoxifylline (PTX, 16.5 mg·kg⁻¹) group and rolipram (1 mg·kg⁻¹) group. The rats in model and drug treatment groups were injected with $A\beta_{25-35}$ 5 μ L into each side of hippocampus. PTX or rolipram was given (ip) 24 h after the operation, once a day for 14 d. Step through test was done after administration for 7 d, and Morris water maze test was done after administration for 14 d. Hippocampal cAMP content was measured by radioimmunoassay after the behavior tests. **RESULTS** Compared with model group, the latency in step through test was significantly longer, and the time of finding platform in Morris water maze test was significantly shorter in PTX and rolipram groups, and the hippocampal cAMP content was higher. **CONCLUSION** Phosphodiesterase inhibitors PTX and rolipram may enhance learning and memory abilities, and one of mechanisms may be related with increasing hippocampal cAMP level.

Key words [phosphodiesterase inhibitors](#) [pentoxifylline](#) [rolipram](#) [amyloid beta-protein](#) [cyclic AMP](#) [learning](#) [memory](#)

DOI: 10.3867/j.issn.1000-3002.2008.03.001

通讯作者 徐江平 jpx@fimmu.com

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(384KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“磷酸二酯酶抑制剂”的相关文章](#)
- ▶ [本文作者相关文章](#)

- [徐永祥](#)
- [汪海涛](#)
- [徐江平](#)