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脑缺血再灌注对小鼠学习记忆的损伤及山茶花提取物的保护作用

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摘要：

摘要 目的：探讨山茶花提取物（ECJ）对缺血性记忆障碍的保护作用及其与炎症和血脑屏障损伤的关系。方法：小鼠分为假手术组、模型组、阳性药物对照组 （银杏叶提取物，EGB，35 mg·kg-1，ip）和山茶花提取物治疗组（ECJ，50，15，5 mg·kg-1，ip）。 山茶花提取物治疗组和阳性药物对照组分别注射山茶花提取物和银杏叶提取物，连续给药9d。给药后第7d，采用双侧颈总动脉结扎法建立重复前脑缺血再灌注模型。术后第7d用水迷宫检测小鼠学习记忆能力；用紫外分光光度计检测脑组织髓过氧化物酶（MPO）活性和伊文思蓝（EB）含量；同时测定脑组织的含水量。结果：模型组小鼠的学习记忆能力显著下降（P＜0.01），同时伴随脑内MPO活性上升（P＜0.01），脑组织EB及水分量升高（P＜0.01）。ECJ预防和治疗给药可提高缺血小鼠的学习记忆能力；并使脑组织EB含量下降（P＜0.05和P＜0.01），脑水分含量减少（P＜0.05），血脑屏障损伤程度有所减轻；同时伴随MPO活性下降（P＜0.05和P＜0.01），炎症反应减弱。结论：ECJ能减轻缺血再灌注引起的脑损伤，改善小鼠学习记忆能力，该作用可能与其提高脑组织抗血脑屏障损伤和抗炎症反应能力有关。关键词 山茶花提取物；脑缺血再灌注；学习记忆；血脑屏障；炎症反应中图分类号：R965，R743 文献标识码：A 文章编号：1001-1242(2008)-03-0245-03

关键词：山茶花提取物 脑缺血再灌注 学习记忆 血脑屏障 炎症反应

The protective effects of the extract of camellia japonica L. on learning-memory dysfunction induced by ischemia-reperfusion in mice

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Fund Project:

Abstract:

Objective: To study the protective effects of the extract of camellia japonica L. on learning-memory dysfunction induced by ischemia-reperfusion in mice. Method:On day 7 after drug treatment, repeated cerebral ischemia-reperfusion was induced by fastening bilateral common carotid artery. The 7th day following surgery, learning-memory was measured using Morris water maze. The activity of MPO and the content of EB in brain were then measured by UV-photometer analysis system. Meanwhile, the content of water in brain were detected. Result: Ischemia-reperfusion impaired learning-memory (P<0.05 and P<0.01), and increased the activity of MPO and the content of EB and water in the brain of mice(P<0.01). It was found that the extract of camellia japonica L. could remarkably decrease the content of EB (P<0.01) and water (P<0.05) in brain, and the activity of MPO (P<0.05 and P<0.01) when compared to the model group, finally dramatically improve the ability of learning-memory after ischemia-reperfusion (P<0.05, P<0.01). Conclusion:The extract of camellia japonica L. showed an improvement effect on the memory impairment in mice induced by ischemia/reperfusion. Improvement of the anti-blood-brain-barrier-damage and anti-inflammation in brain may be involved in the mechanism of this effect.

Keywords: the extract of camellia japonica L. cerebral ischemia-reperfusion learning-memory blood brain barrier inflammatory reaction

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