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于方1， 拓西平1*，吕建勇1,陈海生2. 华中五味子酮对阿尔茨海默病样大鼠学习记忆功能及海马区核因子κB、诱导型一氧化氮合酶表达的影响[J]. 第二军医大学学报, 2007, 28(12):1351-1355

华中五味子酮对阿尔茨海默病样大鼠学习记忆功能及海马区核因子κB、诱导型一氧化氮合酶表达的影响

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摘要：

目的：观察华中五味子酮(Schisandrone)对阿尔茨海默病(Alzheimer's disease，AD)样大鼠学习记忆及海马区核因子κB(nuclear factor-κB)、诱导型一氧化氮合酶(inducible nitric oxide synthase，iNOS)表达的影响，探讨华中五味子酮对AD可能的防治作用。方法：30只雄性SD大鼠随机分为空白对照组、AD模型组和华中五味子酮干预组3组，每组各10只。采用侧脑室立体定向注射β淀粉样蛋白(amyloid-beta protein, Aβ)25-35的方法，建立AD的动物模型；华中五味子酮干预组采用华中五味子酮灌胃进行药物干预，空白对照组注射生理盐水。通过Morris水迷宫检测大鼠学习、记忆能力，通过免疫组化法观察大鼠海马区NF-κB及iNOS 蛋白的表达。结果：华中五味子酮干预组大鼠短期学习记忆能力较AD样大鼠有明显改善(P<0.05)，海马区NF-κB及iNOS 的表达较AD样大鼠明显减少(P<0.05)，海马区NF-κB及iNOS 的表达呈正相关关系(空白对照组、AD模型组、华中五味子酮干预组的相关系数分别为0.639、0.656、0.682,P均<0.05)。结论：华中五味子酮可能通过影响NF-κB信号转导通路而抑制Aβ诱导的氧化应激和炎性反应，在AD发病中具有保护作用。

关键词：阿尔茨海默病 核因子κB 诱导型一氧化氮合酶 华中五味子酮 迷宫学习

Schisandrone improves learning and memory abilities of Alzheimer-like rats and influences expression of NF-κB, iNOS in rat hippocampus

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Abstract:

Objective: To investigate the influence of Schisandrone on the learning and memory abilities of rats with Alzheimer-like disease and on the expression of NF-κB, iNOS in rat hippocampus, so as to study the prevention effect of Schisandrone on Alzheimer disease (AD). Methods: Totally 30 male SD rats were evenly randomized into 3 groups: blank control group, AD model group and Schisandrone intervention group. The AD animal model was established by stereotactic injection of Aβ25-35 into lateral cerebral ventricle of rats; the rats in Schisandrone intervention group were administrated with Schisandrone. The learning and memory abilities of animals were determined by Morris water maze; the expression of NF-κB, iNOS in the hippocampus was detected by immunohistochemistry. Results: The learning and memory abilities of rats in the Schisandrone intervention group were significantly improved compared with those in the AD model group ($P<0.05$). The expression of NF-κB and iNOS in the hippocampus was significantly decreased in the Schisandrone group than in the AD model group ($P<0.05$). The expression of NF-κB and iNOS in the hippocampus was positively correlated with each other. The correlation coefficients for the blank control, AD model and Schisandrone intervention groups were 0.639, 0.656 and 0.682, respectively (all $P<0.05$). Conclusion: Schisandrone can suppress the Aβ-induced oxidative stress and inflammatory reaction through influencing NF-κB signaling pathway, exerting its protective effect on AD.

Keywords: Alzheimer disease nuclear factor-kappa B inducible nitric oxide synthase schisandrone maze learning