

范文静, 朱彤彤, 郭亚雄, 林桂渺, 赵丽娟. 人参二醇皂苷和番茄红素对寰枢椎失稳所致老龄小鼠学习记忆障碍的影响[J]. 中国康复医学杂志, 2009, (8): 731-733

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基金项目:

DOI:

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摘要:

目的: 比较人参二醇皂苷(panaxadiol saponins, PDS)、番茄红素(lycopene)对寰枢椎失稳老龄小鼠记忆的影响。方法: 小鼠寰枢椎周围注射30%乳酸溶液复制小鼠颈椎失稳致慢性脑损伤模型。水迷宫测试小鼠学习、记忆能力; 碱羟胺比色法测定脑组织乙酰胆碱(Ach)含量, 试剂盒检测脑组织胆碱酯酶(AchE)活性; 免疫组化观察小鼠海马区 β -淀粉样蛋白表达。结果: 与模型组比较, PDS组小鼠游泳全程时间缩短、错误次数减少($P < 0.01$), 而lycopene组小鼠学习、记忆能力有提高趋势; PDS组和lycopene组脑AChE活性降低($P < 0.01$), Ach含量增加($P < 0.01$), 且见海马CA1区 β -淀粉样蛋白表达减弱; 两用药组间差异不显著。结论: PDS与lycopene对长期乳酸堆积引起的老龄小鼠寰枢椎失稳所致脑损伤均具有一定的保护作用, 可改善小鼠学习记忆能力和脑的代谢。

关键词: [人参二醇皂苷](#) [番茄红素](#) [学习记忆](#) [寰枢椎关节](#) [胆碱酯酶](#) [乙酰胆碱](#) [\$\beta\$ -淀粉样蛋白](#)

Effects of panaxadiol saponins and lycopene on abilities of learning and memory of senile mice with atlanto-axial joint instability [Download Fulltext](#)

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Abstract:

Objective: To compare the effects of panaxadiol saponins(PDS) with lycopene on the abilities of learning and memory in senile mice with learning and memory disorder by atlanto-axial joint instability. Method: The atlanto-axial joint instability model was established by injection with 30% lactic acid around the atlanto and axial vertebrae, 30 μ l once weekly, three times totally. The changes of abilities of learning and memory in mice were observed with water-maze test. The activities of acetylcholine esterase (AChE) and the content of acetylcholine (ACh) in brain tissue were tested. Immunohistochemical staining with β -amyloid protein in mice hippocampus was demonstrated. Result: The model mice had longer swimming time and more errors($P < 0.05$) in water maze test compared with control group. PDS mice had significant short latency period and less errors in water-maze test($P < 0.01$), but the difference between PDS and lycopene groups was not obvious. Compared with model group, the activities of AChE reduced($P < 0.01$), and the content of ACh increased in PDS and lycopene groups ($P < 0.01$). And in the two therapy groups, expressions of β -amyloid protein in mice hippocampus were less than that in model group. Conclusion: This study indicate that PDS and lycopene can improve the learning and memory abilities of mice and the metabolism of senile mice brain, which may be the mechanism of its protective effect to cerebral damage.

Keywords: [panaxadiol saponins](#) [lycopene](#) [learning and memory](#) [atlanto-axial joint](#) [acetylcholine esterase](#) [acetylcholine](#) [\$\beta\$ -amyloid](#)

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