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论著

舒肝解郁胶囊对抑郁模型大鼠海马神经元凋亡及脑组织caspase-3蛋白表达的影响

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摘要： 目的：研究舒肝解郁胶囊对抑郁模型大鼠海马神经元凋亡及脑组织caspase-3蛋白表达的影响,探讨其治疗抑郁症的作用机制.方法：将雄性SD大鼠随机分为正常对照组、模型组、舒肝解郁组和氟西汀组四组;采用慢性轻度不可预见性应激(CUMS)结合孤养建立抑郁大鼠模型,并用旷场、糖水消耗和强迫游泳试验评价大鼠的行为学改变,观察海马CA3区神经元的形态结构及凋亡,应用蛋白印记分析检测脑组织caspase-3蛋白的表达.结果：与模型组比较,舒肝解郁组大鼠自发活动显著增加;糖水消耗量、糖水偏爱率显著升高;强迫游泳不动时间显著缩短;大鼠海马CA3区细胞结构破坏显著改善,凋亡细胞数及脑组织caspase-3 蛋白表达显著减少($P < 0.05$或0.01);氟西汀组与舒肝解郁组比较,差异无统计学意义($P > 0.05$).结论：舒肝解郁胶囊能显著改善抑郁模型大鼠的抑郁症状,促进抑郁大鼠海马CA3区神经细胞损伤的修复和/或新生;减少大鼠脑组织caspase-3蛋白表达,阻止脑神经细胞的凋亡;疗效与氟西汀相当.

关键词： 舒肝解郁胶囊 抑郁 caspase-3 细胞凋亡 蛋白印迹

Effect of Shuganjieyu capsules on neuronal apoptosis in hippocampal CA3 area and the expression of caspase-3 in the brain of rat depression model

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Abstract: Objective: To evaluate the effect of “Shuganjieyu” (SGJY) capsules on neuronal apoptosis in hippocampal CA3 area and the expression of caspase-3 in the brain of rat depression model, and to investigate its pharmacological mechanisms in depression treatment. Methods: Adult male SD rats were randomly divided into 4 groups: a control, a model, a SGJY and a fluoxetine group. The rat depression model was established under chronic unpredictable mild stress (CUMS) and separate feeding. The behaviors were measured by open-field test, sucrose consumption and forced swimming test. We observed the neuronal morphology structure and neuronal apoptosis in the hippocampal CA3 area. We detected the rat caspase-3 expression level of medial prefrontal cortex (mPFC) and hippocampal CA3 area by Western blot. Results: After 21-day stress, compared with the model group, spontaneous activity and sucrose consumption and preference percentage of the rats in the SGJY group significantly increased, while the immobility time in forced swimming test, the number of apoptotic cells and the protein levels of caspase-3 significantly reduced ($P < 0.01$ or 0.05). There was no significant difference between the SGJY group and the fluoxetine group ($P > 0.05$). Conclusion: SGJY capsules can reduce the depression symptoms of CUMS and help to increase hippocampal neuron generation, survival and neogenesis, reduce the protein levels of caspase-3, and reverse neurocyte apoptosis in the rat depression model with the same efficacy as fluoxetine.

Keywords: SGJY capsule depression caspase-3 apoptosis Western blot

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