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2-甲氧基雌二醇对脊髓损伤大鼠运动功能及神经细胞凋亡的影响 [点此下载全文](#)

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摘要:

摘要目的: 探讨2-甲氧基雌二醇(2ME2)对脊髓损伤(SCI)大鼠运动功能及细胞凋亡的影响。**方法:** 将成年雄性SD大鼠72只随机分为假手术组(n=24)、脊髓损伤组(n=24)、2ME2治疗组(n=24)。采用改良的Allen法制作脊髓损伤模型,造模成功后1、3、7、14、21、28d应用BBB运动评分系统对各组大鼠运动功能进行评估,造模成功后连续7天对2ME2治疗组大鼠腹腔注射2ME2(24mg/kg),第7天应用免疫荧光技术检测各组大鼠caspase-3表达,应用TUNEL染色进行凋亡细胞计数。结果:脊髓损伤组及2ME2治疗组损伤后随时间延长BBB评分升高,其中2ME2治疗组损伤后第14、21、28天BBB评分显著高于脊髓损伤组,差异具有显著性意义(P<0.05)。与假手术组(4.583±2.234)比较,脊髓损伤组(33.417±4.274)及2ME2治疗组(22.250±4.048)免疫荧光染色caspase-3蛋白表达阳性细胞数显著增加,2ME2治疗组caspase-3蛋白表达阳性细胞数较脊髓损伤组显著减少,差异具有显著性意义(P<0.05)。与假手术组(12.25±2.67)相比,脊髓损伤组(49.17±4.75)及2ME2治疗组(38.67±4.44)凋亡细胞数显著增多,2ME2治疗组凋亡细胞数较脊髓损伤组显著减低,差异具有显著性意义(P<0.05)。结论:2ME2改善脊髓损伤大鼠模型脊髓损伤后的运动功能,具有神经保护作用;2ME2降低脊髓损伤大鼠模型脊髓损伤后caspase-3蛋白表达,抑制神经细胞凋亡。

关键词: [2-甲氧基雌二醇](#) [脊髓损伤](#) [凋亡](#) [运动功能](#)

The effect of 2-methoxyestradiol on the motor function and nerve cells apoptosis in rats with spinal cord injury [Download Fulltext](#)

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Abstract:

Abstract Objective: To investigate the effects of 2-methoxyestradiol(2ME2) on the movement function and nerve cells apoptosis in rats with spinal cord injury (SCI). **Method:** A total of 72 adult male SD rats were randomly divided into 3 groups: sham group(n=24), SCI group(SCI,n=24) and SCI+2ME2 treated group (SCI+2ME2, n=24). The rats of SCI group and SCI+2ME2 group were sacrificed after perfusion. Models of SCI were created by modified Allen's method. At 1,3,7,14,21,28 days after modeling, rats' movement function were evaluated with Basso, Beatti, Bresnahan(BBB) score. After modeling, 2ME2(24 mg/kg) were injected peritoneally for 7 days consecutively and at the 7th day were observed for expression of caspase-3 with immunofluorescence staining. The nerve cells apoptosis was counted with TUNEL staining. **Result:** After SCI and 2ME2 treatment in SCI group and SCI+2ME2 group the BBB scores were elevated gradually compared with sham group(P<0.05). BBB score in SCI+2ME2 group were higher obviously compared with SCI group(P<0.05) on the 14th, 21th, 28th days (P<0.05). After 2ME2 treatment the expression of caspase-3 and the amount of nerve cells apoptosis reduced(P<0.05). **Conclusion:** 2ME2 can offer protection for movement function in rats with SCI and maybe inhibit the expression of caspase-3, and finally reduce apoptosis of nerve cells.

Keywords: [2-methoxyestradiol](#) [spinal cord injury](#) [apoptosis](#) [motor function](#)

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