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论文

FK506对癫痫大鼠凋亡细胞数及MMP和AIF表达的影响

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摘要：

目的 观察免疫抑制剂他克莫司（FK506）对癫痫大鼠海马凋亡神经元、线粒体膜电位、凋亡诱导因子(AIF)表达的影响。方法 随机将108只成年健康雄性Wistar大鼠分为对照组、癫痫组和脑保护组，每组36只，建立氯化锂-匹鲁卡品癫痫模型。脑保护组在注射匹鲁卡品之前24、1h分别腹腔注射FK506，对照组注射等体积生理盐水。应用TUNEL技术检测凋亡细胞，流式细胞仪测定线粒体内罗丹明123的荧光强度和线粒体的大小，免疫组化法检测AIF的表达。结果 与对照组相比,癫痫组海马神经元凋亡阳性百分比、AIF的表达量显著增高(P＜0.05），线粒体膜电位显著降低(P＜0.05），应用FK506后，神经元凋亡阳性百分比、AIF的表达量明显降低，线粒体膜电位显著升高(P＞0.05)。结论 FK506可逆转线粒体膜电位的改变，稳定细胞膜电位，抑制神经元的凋亡，具有脑保护作用。

关键词： 癫痫；他克莫司；细胞凋亡；膜电位；凋亡诱导因子

Effect of tacrolimus (FK506) on apoptosis cells and MMP and AIF expressions in rats with epilepsy

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Abstract:

Objective To observe the effect of immunosuppressant tacrolimus (FK506) on neuronal apoptosis in the hippocampus, mitochondrial membrane potential (MMP) and apoptosis-inducing factor (AIF) expression so as to provide a theoretical basis of cerebral protection after epilepsy. Methods 108 healthy adult male Wistar rats were randomly divided into the epilepsy group, the tacrolimus group and the control group. The epilepsy group and the tacrolimus group were intraperitoneally injected with pilocarpine to establish status epilepitcus models.The tacrolimus guoup was pre-treated with tacrolimus 24h and 1h before pilocarpine injection, while the control group only received an injection of an equal amount of saline. The number of apoptotic cells was detected by TUNEL technique, fluorescence intensity of rhodamine 123 and size of mitochondria by flow cytometry, and expression of AIF by immunohistochemical analysis. Results Compared with the tacrolimus group and the control group, the number of apoptotic cells and expression of AIF in the epilepsy group were higher and the mitochondrial membrane potential was increased(P＜0.05)，and the cerebral protection group and the control group had no significant difference(P＞0.05).Conclusion FK506 plays an important role in neuro-protection by reducing neuronal apoptosis and inhibiting MMP changes.

Keywords: Epilepsy; Tacrolimus(FK506); Apoptosis; Membrane potentials; Apoptosisinducing factor

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