中国药理学与毒理学杂志 2011 25 (3): 258-263 ISSN: 1000-3002 CN: 11-1115/R

论著

贝那替秦对最大电休克发作模型和戊四氮惊厥发作阈模型小鼠的抗惊厥作用

陈小飞[2], 李建雄[3], 王永安[1]

（1. 军事医学科学院毒物药物研究所, 北京 100850; 2. 解放军总参谋部总医院药剂科, 北京 100091; 3. 解放军总医院肿瘤内科, 北京 100853)

收稿日期 2011-1-8 **修回日期** **网络版发布日期** 2011-5-31 **接受日期** 2011-5-18

摘要 **目的** 评价贝那替秦等抗胆碱药在不同惊厥模型的抗惊厥疗效，探讨其可能的作用机制。**方法** 通过ig给予贝那替秦2~40 mg·kg^{-1}记录最大电休克发作模型（ MES）及戊四氮惊厥发作阈模型（MST）模型小鼠的未出现惊厥数。制备新生Wistar小鼠海马神经元细胞，加入贝那替秦1~100 μmol·L^{-1}，MTT检测细胞存活率。**结果** 贝那替秦2~40 mg·kg^{-1}在MES模型未出现惊厥数为2/10~7/10，在MST模型上未出现惊厥数为1/10~9/10均明显高于模型组（*P* <0.05, *P*<0.01），2个模型的ED_{50}分别为12.2(4.7~53.6)mg·kg^{-1}和12.5(7.0~25.9)mg·kg^{-1}。贝那替秦1~100 μmol·L^{-1}能明显对抗*N*-甲基-*D*-天冬氨酸(NMDA)对海马神经元的损伤作用，细胞存活率明显增加（*P*<0.05)。**结论** 贝那替秦在MES及MST惊厥模型均具明显抗惊厥作用，其作用机制可能与其对NMDA受体的拮抗作用有关。

关键词 贝那替秦 N-甲基-D-天冬氨酸 惊厥

分类号 R971.92

Anticonvulsant effects of benactyzine on maximal electroshock seizure and pentetrazole seizure threshold test model mice

CHEN Xiao-fei[2], LI Jian-xiong[3], WANG Yong-an[1]

(1. Institute of Pharmacology and Toxicology, Academy of Military Medical Sciences, Beijing 100850, China; 2. Department of Pharmacy, General Hospital of General Staff of Chinese People's Liberation Army, Beijing 100850; 3. Department of Oncology, General Hospital of PLA, Beijing 100853, China)

Abstract

OBJECTIVE To evaluate the anticonvulsant effect of benactyzine and other anticholinergic drugs on different seizure models and investigate their anti-seizure mechanism. **METHODS** Benactyzine 2-40 mg·kg^{-1} were given ig to mice. The number of mice without convulsant appearance was recorded in the maximal electroshock seizure (MES) and pentetrazole(Metrazol) seizure threshold test (MST) model. Benactyzine 1-100 μmol·L^{-1} was added to primary cultured hippocampus neurons, and the cell survival was detected by MTT assay. **RESULTS** The number of mice without convulsant appearance was 2/10-7/10 in the MES model *vs* 1/10-9/10 in MST model. The ED_{50} of benactyzine in MES model was 12.2(4.7-53.6)mg·kg^{-1} *vs* 12.5(7.5-25.9)mg·kg^{-1} in the MST model. The cell survival in benactyzine 1-100 μmol·L^{-1} group was significantly higher than that of *N*-methyl-*D*-aspartic acid (NMDA) model group (*P*<0.05). **CONCLUSION** Benactyzine shows significant anti-seizure effect on both MES and MST. The anticonvulsant mechanism might be related to its antagonism against NMDA receptors.

Key words benactyzine N-methyl-D-aspartic acid seizure

DOI: 10.3867/j.issn.1000-3002.2011.03.008

通讯作者 王永安 yonganw908@yahoo.com.cn