中国药理学与毒理学杂志 2005 19 (5): 363-367 ISSN: 1000-3002 CN: 11-1115/R

论著

雌二醇对丙酸睾酮诱导去势大鼠前列腺增生的影响

吴建辉[1], 裴晓丹[2], 曹 霖[1], 孙祖越[1*], 何桂林[1], 刘桂明[1], 蒋秀蓉[1]
(1. 中国生育调节药物毒理检测中心, 上海市计划生育科学研究所药理毒理学研究室, 上海 200032; 2. 辽宁大学环境科学系, 辽宁 沈阳 110036)

收稿日期 2004-11-1 修回日期 网络版发布日期 2008-8-14 接受日期 2005-6-29

摘要 目的 明确50 μg·kg^{-1}雌二醇对丙酸睾酮诱导的前列腺增生是否具有抑制作用。方法 ①SD雄性大鼠随机分成5组，依次为：正常对照、去势对照、丙酸睾酮对照组、雌二醇组和非那甾胺组，每组12只动物；动物去势后，除对照组外，其余3组动物sc 0.5 mg·d^{-1}丙酸睾酮，雌二醇组同时sc 50 μg·kg^{-1}·d^{-1}雌二醇，连续31 d。②30只雄性SD大鼠于去势后随机分成5组，分别sc 0, 50, 100, 200或400 μg·kg^{-1}雌二醇，同时sc 0.5 mg·d^{-1}丙酸睾酮，连续14 d。动物于最后一次给药24 h后，麻醉处死，取前列腺，测量湿重，计算前列腺指数，组织切片分析前列腺上皮高度及腺腔面积大小。结果 ①给予50 μg·kg^{-1}雌二醇31 d，与丙酸睾酮对照组相比，雌二醇组平均前列腺体积、湿重、前列腺指数、腺上皮高度和腺腔面积无缩小趋势，而非那甾胺组平均前列腺体积、湿重、前列腺指数、腺上皮高度和腺腔面积均明显减小(P<0.01)。 ②给予系列雌二醇2周，前列腺湿重增加，其中400 μg·kg^{-1}组较对照组增加明显（P<0.01）；前列腺指数增大，400 μg·kg^{-1}组较丙酸睾酮对照组明显增大（P<0.01）；腺上皮高度随雌二醇剂量增大而增高（P<0.01）；腺腔面积亦随雌二醇剂量增加而增大，其中，400 μg·kg^{-1}组较对照组增大明显（P<0.01）。结论 50 μg·kg^{-1}以上剂量的雌二醇不能抑制丙酸睾酮诱发的前列腺增生，相反，具有促进前列腺增生的作用。

关键词 雌二醇 前列腺 增生 大鼠 模型 动物
分类号 R977.1+2

Effects of estradiol on prostate hypeplasia in castrated rats

WU Jian-Hui[1], PEI Xiao-Dan[2], CAO Lin[1], SUN Zu-Yue[1*], HE Gui-Lin[1], LIU Gui-Ming[1], JIANG Xiu-Rong[1]

(1. Department of Pharmacology and Toxicology, SIPPR, National Evaluation Centre for the Toxicology of Fertility Regulating Drugs, Shanghai 200032, China; 2. Department of Environmental Science of Liaoning University, Shenyang 110036, China)

Abstract

AIM To investigate whether 50 μg·kg^{-1} estradiol can inhibit the proliferation of hyperplastic prostate induced by testosterone propionate(TP). **METHODS** ① 60 male Sprague-Dawley(SD) rats divided into five groups at random. One as normal control group, the other groups were negative control group, TP control group, estradiol group and finasteride group. Except the normal control group, the rats of other groups were castrated. One week after castration, the rats of TP control group were treated with 0.5 mg·d^{-1} TP, the estradiol group was treated with 0.5 mg·d^{-1} TP and 50 μg·kg^{-1} estradiol, the animal of finasteride group were treated with 0.5 mg·d^{-1} TP and 10 mg·kg^{-1} finasteride for 31 d. ② 30 male SD rats divided into five groups and were castrated, one week later, four groups were treated with 50, 100, 200 or 400 μg·kg^{-1} estradiol respectively for 14 d, meanwhile, all animal were treated with 0.5 mg·d^{-1} TP. Animals were anesthetized to death, the prostate was dissected and their weights were measured and their prostate index(PI) was calculated. The height of epithelial cell and acinar luminal area were measured with micro image analysis software. **RESULTS** ① After being treated with 50 μg·kg^{-1} estradiol for 31 d, between TP control group and estradiol group, there were no differences in these indexes, including the mean prostate volume, mean prostate wet weight, prostate index, mean height of epithelial cell and mean gland lumen area of prostate. While in finasteride group, the values of all indexes were smaller than that of TP group(P<0.01). ② In 400 μg·kg^{-1} group, the mean prostate wet weight was increased, the mean PI increased, the mean height of epithelial cell and the mean gland lumen area of prostate were signicantly increased as compared with that of control group（P<0.01）. **CONCLUSION** 50 μg·kg^{-1} and more estradiol can not inhibit the proliferation of hyperplasia prostate that induced by TP, on the contrary, they promote the prostate to proliferate.

Key words estradiol prostate proliferation rats model animal

DOI:

通讯作者　孙祖越 Sunzy64@163.com