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双酚A对SD仔鼠睾丸形态学、CD117及波形蛋白表达的影响

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中文摘要：目的观察不同剂量双酚A(bisphenol A，BPA)暴露下的21日龄SD仔鼠一般发育参数，睾丸形态学变化及相关蛋白的表达,以探讨妊娠期及哺乳期BPA持续暴露对仔鼠睾丸发育的影响。方法对40只孕鼠持续饲服双酚A饲料，按每组10只随机分为低、中、高剂量组［10、50、100mg/(kg·d)］及对照组。记录分娩后第21天雄性仔鼠发育参数，对所取睾丸标本进行光镜及电镜形态学观察，免疫组化检测睾丸曲细精管上皮CD117和波形蛋白（vimentin）的表达。结果实验组低、中、高BPA剂量组雄性仔鼠体重及睾丸重量呈逐渐下降趋势，显著低于对照组（P均<0.05）。光镜及电镜形态学观察提示实验组睾丸曲细精管及精原细胞均出现受损改变。低、中、高BPA剂量组睾丸精原细胞和支持细胞相关蛋白表达逐渐下降，与对照组比较有统计学意义（P<0.05、P<0.01和P＜0.01）。结论妊娠期及哺乳期BPA染毒对雄性仔鼠睾丸发育具有一定毒性作用，可能导致睾丸精原细胞发生质和量的变化。此外，精原细胞与支持细胞间的联系受到干扰也许是BPA对睾丸毒性的重要因素。

中文关键词：双酚A　精原细胞　CD117　波形蛋白

Effect of BPA on the Morphology of the Testis and the Expression of CD117 and Vimentin in Sprague-Dawley Rat Pups

Abstract: ObjectiveTo explore the effect of the continuous exposure of bisphenol A (BPA) on the development of the testis of rat pups by observing the general developmental parameters, the testicular morphological changes and the related protein expressions of 21-day-old Sprague-Dawley rat pups exposed to different doses of bisphenol A during pregnancy and lactation. MethodsTotally 40 pregnant rats were randomized into 4 groups with 10 animals in each group, of which one group were used as controls and the other 3 groups were fed with the animal food containing bisphenol A ［10,50,100mg/(kg·d) as low, medium and high dose test group respectively］. The developmental parameters of the 21-day-old male pups born from the mother rats were recorded. The testis specimens were observed under light and electron microscopes and the expressions of CD117 and vimentin on testicular seminiferous epithelium were detected using immunohistochemistry. ResultsThe body weights and testis weights decreased with the increase of the dose given and that of the test group was significantly lower than that of the control group (P<0.05). The morphological observations by light and electron microscopy suggested some damaged changes of the seminiferous tubules and spermatogenous cells in the test groups. The expressions of related proteins of the testicular sertoli cells and spermatogenous cells decreased in the low, medium and high BPA dose groups and the differences were statistically significant (P<0.05, P<0.01 and P<0.01 respectively) compared with that of the control group. ConclusionThe exposure to BPA during pregnancy and lactation has some toxic effects on the development of the testis of male rat pup which may lead to qualitative and quantitative changes in spermatogonial cells. Moreover, the interference on the contact between sertoli cells and spermatogenous cells may be an important factor of BPA toxicity.

keywords: Bisphenol A　Spermatogonia　CD117　Vimentin

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