

论述

糖尿病大鼠肾小管骨调素和p38MAPK表达的动态研究

万昌武¹, 田陈², 肖瑛², 桂华珍², 郭兵², 张国忠²△

贵阳医学院 1 病理学教研室, 2 病理生理学教研室, 贵州 贵阳 550004

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摘要 目的:动态观察骨调素(OPN)在链脲佐菌素(STZ)诱导的糖尿病大鼠肾小管的表达,探讨它与p38丝裂原活化蛋白激酶(p38MAPK)、核转录因子-κB(NF-κB)及肾损害之间的关系。方法:雄性SD大鼠,注射STZ诱导糖尿病(DM),随机分成5组,每组分别设鼠龄匹配的正常对照组。免疫组化方法检测肾小管OPN、p38MAPK、NF-κB及纤连蛋白(FN)的表达;Western印迹法检测肾皮质OPN和p38MAPK蛋白质水平;生化方法测定血糖、血肌酐及24 h尿蛋白量;光镜检查肾组织的形态改变。结果:Western印迹和免疫组化检测发现糖尿病3 d大鼠肾组织p38MAPK和DM 7 d OPN的表达增多,并随病程发展而增加,与正常对照组比较有显著差异(P<0.01)。DM 4周,肾小管OPN的表达与p38MAPK、NF-κB、FN表达及蛋白尿呈显著正相关。结论:糖尿病大鼠肾小管OPN表达增加参与了糖尿病肾小管间质损害的发病机制;肾小管p38MAPK可能介导了DM状态时NF-κB的表达,进而调节OPN的表达增多。

关键词 [糖尿病](#); [肾病](#); [骨桥蛋白](#); [p38 MAP激酶](#); [NF-κB](#)

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Osteopontin and p38MAPK expression in renal tubules of diabetic rats

WAN Chang-wu¹, TIAN Chen², XIAO Ying², GUI Hua-zhen², GUO Bing², ZHANG Guo-zhong²

1 Department of Pathology, 2Department of Pathophysiology, Guiyang Medical College, Guiyang 550004, China. E-mail: zgz107@163.com

Abstract

AIM: To observe dynamically osteopontin (OPN) expression in renal tubules of streptozotocin (STZ)-induced diabetic rats, and to explore the relationship between OPN and p38MAPK, nuclear transcription factor-κB (NF-κB), and renal injures.
METHODS: Male SD rats were injected with STZ to induce diabetes mellitus(DM), which were divided into 5 groups randomly, and meanwhile there were other 5 age-matched normal control groups. Immunohistochemistry was employed to observe the expression of OPN, p38MAPK, NF-κB and fibronectin (FN) in renal tubules. The OPN and p38MAPK proteins in renal cortex were detected by Western blotting. Blood glucose, serum creatinine and 24 h urine protein were examined by biochemistry methods. The renal morphology was checked through light microscopy.
RESULTS: The immunohistochemistry and Western blotting results showed that the expression of p38MAPK 3 days after DM and OPN 7 days after DM in renal cortex or tubules were increased significantly compared with control groups (P<0.01), and were further increased following the course of diabetes. In DM week 4, there were positive correlations between OPN and p38MAPK, NF-κB, FN, and 24 h urine protein.
CONCLUSION: Our results suggest that an increase in OPN expression in renal tubules participates in the injury mechanisms of renal tubulo-intestitium in diabetic rats. The increased expression of p38MAPK may induce NF-κB expression in the tubules under DM condition, and then NF-κB promotes the expression of OPN.

Key words [Diabetes mellitus](#) [Nephrosis](#) [Osteopontin](#) [p38 MAP kinase](#) [NF-kappa B](#)

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