

基础研究

单宁酸对糖尿病大鼠肾组织炎症因子表达的抑制作用

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摘要:

目的: 观察单宁酸(TA)对链脲佐菌素(STZ)诱发糖尿病(DM)大鼠肾脏组织炎症因子表达的抑制作用, 探讨其作用机制。方法: 70只雄性Wistar大鼠随机分为对照组、DM组、氨基胍(AG)组、TA低剂量组和TA高剂量组。处理10周后检测各组大鼠肾脏功能指标[血清肌酐(Cre)、尿素氮(BUN)及24 h尿蛋白排泄量], PAS染色观察肾脏病理改变, 免疫组织化学染色观察肾组织细胞间黏附分子1(ICAM-1)及肿瘤坏死因子α(TNF-α)的表达, RT-PCR方法检测肾组织ICAM-1 mRNA的表达。结果: 与模型组比较, TA组大鼠血清Cre、BUN及24 h尿蛋白排泄量降低(P<0.05或P<0.01), 大鼠肾小球系膜区PAS阳性物质减少, 肾组织ICAM-1及TNF-α蛋白表达水平降低, 肾组织ICAM-1 mRNA表达水平降低(P<0.05)。结论: TA能降低糖尿病大鼠肾组织ICAM-1及TNF-α的表达, 对糖尿病大鼠肾脏有保护作用。

关键词: 单宁酸; 糖尿病肾病; 细胞间黏附分子1; 肿瘤坏死因子α

Inhibitory effects of tannic acid on inflammatory factor expressions of renal tissues in diabetic rats

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Abstract:

To investigate the inhibitory effects of tannic acid(TA) on the expressions of renal inflammatory factors in streptozotocin(STZ)-induced diabetic rats and explore their mechanisms. Methods Seventy male Wistar rats were randomly divided into control group, diabetic model group (DM), aminoguanidine (AG) group, low dose TA group(TA20) and high dose TA group(TA30). After the rats were treated for 10 weeks, 24 h urinary protein excretion and the renal function parameters including serum creatinine(Cre) and blood urea nitrogen(BUN) were measured. The morphological changes of kidney tissues were observed using PAS staining. The expressions of ICAM-1 and TNF-α proteins in the kidney tissues were examined by immunohistochemistry. The ICAM-1 mRNA expression in the kidney tissues was detected by RT-PCR. Results Compared with DM group, the serum Cre, BUN and the 24 h urinary protein excretion in TA groups were reduced(P<0.05 or P<0.01); the PAS-positive substance in mesangial area was reduced; the expressions of ICAM-1 and TNF-α proteins and ICAM-1 mRNA in kidney tissues were significantly decreased(P<0.05). Conclusion TA plays a protective role in diabetic kidney and inhibits the expressions of inflammatory factor ICAM-1 and TNF-α in kidney tissues.

Keywords: tannic acid; diabetic nephropathy; intercellular adhesion molecule 1; tumor necrosis factor-α

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