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论著

氯沙坦对糖尿病大鼠肾皮质血管紧张素Ⅱ2型受体及诱生型一氧化氮合酶基因表达的影响

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摘要 目的 研究氯沙坦对糖尿病大鼠肾组织血管紧张素系统与一氧化氮系统的影响及其二者之间的关系。方法 SD大鼠随机分成3组：对照组、糖尿病组和氯沙坦（30 mg·kg^{-1}·d^{-1}×8周，ig）治疗组。应用RT-PCR技术检测大鼠肾皮质血管紧张素Ⅱ2型受体(AT_2)、Ⅳ型胶原及诱生型一氧化氮合酶（iNOS）mRNA表达。并同时检测大鼠肾皮质血管紧张素Ⅱ(AngⅡ)、NO含量及一氧化氮合酶（NOS）活性。结果 糖尿病组大鼠尿蛋白排泄率、肾皮质AngII含量、Ⅳ型胶原mRNA及iNOS mRNA表达较对照组明显升高；糖尿病大鼠肾皮质NOS活性也较对照组明显增强；然而糖尿病大鼠肾皮质NO含量及AT_2 mRNA水平却较对照组大鼠明显降低；氯沙坦治疗能显著降低糖尿病大鼠尿蛋白排泄率及肾皮质Ⅳ型胶原mRNA表达；并能明显增加肾皮质AT_2及iNOS mRNA表达及总NOS活性及NO含量。结论 AT_2的激活与氯沙坦的肾脏保护作用有关，并可能参与了对肾脏iNOS mRNA表达的上调。

关键词 糖尿病肾病 氯沙坦 一氧化氮 一氧化氮合酶 受体, 血管紧张素

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Effect of losartan on gene expression of type 2 angiotensinⅡ receptor and inducible nitric oxide synthase in diabetic rat renal cortex

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Abstract

AIM To investigate effect of losartan on angiotensin and nitric oxide system in diabetic rats kidney, and to elucidate the relation between them. **METHODS** Rats were randomly divided into 3 groups: control group, diabetic model group and losartan(30 mg·kg^{-1}·d^{-1}×8 weeks, ig) group. mRNA expressions of type 2 angiotensinⅡ receptor (AT_2), collagen Ⅳ and inducible nitric oxide synthase(iNOS) in renal cortex were measured by semi-quantitative reverse transcription polymerase chain reaction (RT-PCR) respectively. In addition, nitric oxide synthase(NOS) activity, the level of angiotensin Ⅱ and NO in renal cortex were also determined. **RESULTS** In diabetic model group, urine protein excretion, renal angiotensinⅡ level, collagen Ⅳ mRNA and iNOS mRNA expression were increased obviously as compared to control group. Activity of NOS in diabetic model group was increased, too. However, NO level and AT_2 mRNA expression showed a significant decrease as compared to control group. Administration of losartan markedly ameliorated urine protein excretion and collagen Ⅳ mRNA expressions, but increased NOS activity, NO level, AT_2 mRNA expression and iNOS mRNA expression in renal cortex obviously as compared to diabetes group. **CONCLUSION** Activation of AT_2 is related to the renal protective roles of losartan, and may involve in the up-regulation of iNOS mRNA expression in kidney.

Key words diabetic nephropathies losartan nitric oxide nitric-oxide synthase receptors angiotensin

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