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论文

通心络对糖尿病肾病大鼠肾脏CTGF、BMP-7的影响

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摘要：

目的 研究通心络对糖尿病肾病大鼠肾脏组织结缔组织生长因子(CTGF)及骨形态蛋白7 (BMP-7)表达的影响，并探讨其对糖尿病大鼠肾脏保护作用及机制。方法 采用链脲佐菌素(STZ) 诱导建立糖尿病大鼠模型,造模成功后随机分为糖尿病组(DM组)，通心络治疗组（TXL组），正常大鼠为对照组（C组），于24周末检测各组大鼠、24h尿微量蛋白、空腹血糖（FPG）、血清糖基化血红蛋白I (HbA1c)、晚期糖基化终末产物（AGEs）、尿素氮（BUN）、肌酐（Cr）、肾质量/体质量(KW/BW)，光镜PAS染色，采用RT-PCR及Western blot测定CTGF、BMP-7mRNA及蛋白的表达水平。结果 与C组比较, DM组大鼠24周后KW/BW、尿微量蛋白、血清AGEs、BUN、Cr、HbA1c均显著性升高(P<0.05)；TXL组较DM组KW/BW、尿微量蛋白显著降低(P<0.05)；肾脏组织学观察显示，DM组肾小球基底膜增厚，系膜区细胞外基质(ECM)沉积增多，肾小管上皮细胞水肿现象明显，经通心络治疗后，肾脏病理改变显著减轻。另外，DM组大鼠肾组织BMP 7基因和蛋白表达下降，而CTGF基因和蛋白表达升高；与DM组比较TXL组能够抑制CTGF表达，使BMP 7表达升高。结论 通心络可以减轻糖尿病大鼠尿微量蛋白、改善肾脏组织病理，对DN大鼠肾脏具有保护作用，其机制可能与抑制CTGF，上调BMP-7表达有关。

关键词： 通心络；糖尿病肾病；糖基化终末产物；结缔组织生长因子；骨形态蛋白7；大鼠,Wistar

Effects of Tongxinluo on expressions of connective tissue growth factor（CTGF） and bone morphogenetic protein-7（BMP-7） in diabetic nephropathy rats

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Abstract:

Objective To explore the effects of Tongxinluo on the expressions of connective tissue growth factor（CTGF） and bone morphogenetic protein-7（BMP-7） in diabetic nephropathy (DN) rats. Methods The diabetic (DM) rats model was established by one-dose introperitoneal injection of streptozotocin(STZ). The rats were randomly divided into diabetic group(DM group), Tongxinluo treated groups(TXL group), and the control group(C group) . The ratio of kidney weight to body weight, 24h urine microprotein and piasma AGEs, HbA1c, BUN and Cr were measured in each rat after 24 weeks. The renal pathological changes were examined with PAS staining. mRNA and protein expressions of CTGF and BMP-7 in kidney were detected by reverse transcription-polymerase chain reaction(RT-PCR) and Western blot. Results Expressions of mRNA and protein of CTGF were decreased, but expressions of mRNA and protein of BMP-7 in the kidney of the DM group were increased compared with the control group, with P<0.05 and P<0.01 respectively. The body weight was increased and urine micro-protein was decreased in TXL treated rats, and the renal pathological changes were lower than those of the DM group. Expression of CTGF was down-regulated and expression of BMP-7 was up-regulated by TXL. Conclusion TXL can reduce glomerular basement membrane thickening and urine microprotein in diabetic nephropathy rats. Renal protective effects and the mechanism of TXL are probably related to down-regulating expression of CTGF and up-regulating expression of BMP-7.

Keywords: Tongxinluo; Diabetic nephropathy; Advanced glycation end products; Connective tissue growth factor; Bone morphogenetic protein-7; Rats, Wistar

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