

## 论著 健脾清化方对5/6肾切除大鼠ATII/NADPH氧化应激通路的干预作用

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**摘要:** 目的: 研究中药复方健脾清化方对慢性肾衰竭肾纤维化大鼠ATII/NADPH氧化应激通路的影响,初步探讨其发挥疗效的作用机制。方法: 用5/6肾切除(Platt法)建立慢性肾衰竭大鼠模型,分为假手术组、模型组、健脾清化方组和氯沙坦组。治疗60d后测定血清肌酐、尿素氮水平;测定各组肾组织中SOD和MDA水平;Western印迹检测各组肾组织AT1蛋白表达;RT-PCR检测各组肾组织p47phox mRNA表达。结果: 与假手术组比较,模型组大鼠血清肌酐和尿素氮均有明显上升,肾组织匀浆中SOD活性降低,MDA含量升高,肾组织中AT1蛋白表达显著上调,p47phox mRNA表达显著增加,差异均具有统计学意义( $P<0.05$ )。与模型组比较,健脾清化方组和氯沙坦组血清肌酐和尿素氮含量降低,肾组织匀浆中SOD活性上升,MDA含量下降,肾组织中AT1蛋白表达显著下调,p47phox mRNA表达显著降低,差异均具有统计学意义( $P<0.05$ )。与氯沙坦组比较,健脾清化方组肾组织SOD活性明显升高, ( $P<0.05$ ),肾组织中AT1蛋白及p47phox mRNA表达下降趋势明显,但差异无统计学意义( $P>0.05$ ),血清BUN, SCr水平和肾组织中MDA含量两组间比较差异也无统计学意义( $P>0.05$ )。结论: 健脾清化方可通过降低ATII及NADPH氧化酶的表达,从而改善慢性肾衰竭大鼠的氧化应激反应,延缓肾纤维化进程。

**关键词:** 肾纤维化 健脾清化方 血管紧张素II NADPH氧化酶

## Effects of Jianpi Qinghua Recipe on angiotensin II /NADPH oxidase pathway in 5/6 nephrectomized rats

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**Abstract:** Objective: To study the effect of Jianpi Qinghua Recipe(JPQHR)on angiotensin II/NADPH oxidase pathway in 5/6 nephrectomized rat renal failure model and the underlying mechanisms. Methods: The animals were divided into 4 groups:the sham-operated group,the renal failure group,the JPQHR-treated group and the losartan-treated group.After 60-days therapy,serum nitrogen and creatinine were measured.The expression of angiotensin II type 1 receptor(AT1) protein and the expression of p47phox mRNA in renal tissue was determined.SOD and MDA were also examined. Results: Compared with the sham-operated group,the levels of SCr and serum BUN and the AT1 protein and p47phox mRNA expression in the renal failure group were significantly increased. The activities of SOD in renal tissue from the renal failure group was significantly down-regulated while MDA was up-regulated( $P<0.05$ ).Compared with the renal failure group,the levels of SCr and serum BUN and the AT1 protein and p47phox mRNA expression in both JPQHR-treated group and losartan-treated group were significantly decreased.The activities of SOD in renal tissue from JPQHR-treated group and losartan-treated group were significantly up-regulated whereas the content of MDA were down-regulated ( $P<0.05$ ).Compared with the losartan-treated group,the activities of SOD in renal tissue from the JPQHR-treated group was obviously increased( $P<0.05$ ), the decrease in AT1 protein and p47phox mRNA was more evident but not statistically different ( $P>0.05$ ).The level of SCr and serum BUN and the content of MDA were also not statistically different( $P>0.05$ ). Conclusion: Through decrease the expression of angiotensin II and NADPH oxidase,JPQHR can reduce the oxidative stress in chronic renal failure and delay the renal fibrosis progression.

**Keywords:** renal fibrosis Jianpi Qinghua Recipe angiotensin II NADPH oxidase

收稿日期 2012-12-06 修回日期 网络版发布日期

DOI: 10.3969/j.issn.1672-7347.2013.08.004

基金项目:

国家自然科学基金(81173219);国家“重大新药创制”专项(2009ZX09311-003);科技部中医药行业科研专项(201007005);教育部高等学校博士点专项科研基金(20093107110006);上海市科委创新行动计划项目(11DZ1973100);上海高校创新团队建设项目(第2期)

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