

论著

高脂血症对大鼠肾脏内质网应激的影响及辛伐他汀的干预作用

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摘要 目的: 探讨内质网应激在高脂血症引起的肾脏损伤中的作用及辛伐他汀的干预作用。方法: 30只雄性Wistar大鼠随机分为3组: 正常对照组(n=10)给予普通饲料喂养; 高脂组(n=10)给予高脂饲料喂养; 辛伐他汀组(n=10)在高脂饲料喂养的基础上给予辛伐他汀10 mg·kg⁻¹·d⁻¹灌胃。18周后检测大鼠24 h尿蛋白及血清胆固醇、甘油三酯水平。光镜观察大鼠肾脏组织病理改变。免疫组化方法检测大鼠肾脏GRP78、p-JNK的表达。TUNEL检测肾脏组织凋亡细胞。RT-PCR检测肾脏组织GRP78 mRNA、CHOP mRNA的表达。结果: 18周时, 高脂组大鼠24 h尿蛋白、血脂水平、GRP78及p-JNK蛋白的表达、GRP78及CHOP mRNA的表达、肾脏组织凋亡细胞均高于正常对照组(P<0.01); 辛伐他汀组上述改变显著低于高脂组(均P<0.05)。结论: 内质网应激参与了高脂血症引起的肾脏损伤, 辛伐他汀可以通过抑制肾脏的内质网应激反应而起肾脏保护作用。

关键词 [高脂血症](#) [内质网应激](#) [辛伐他汀](#)

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Effect of hyperlipidemia and influence of simvastatin on endoplasmic reticulum stress in rat kidney

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Abstract

AIM: To investigate the role of endoplasmic reticulum stress in renal injury caused by hyperlipidemia and the influence effect of simvastatin. METHODS: Thirty male Wistar rats were randomly divided into three groups: rats in control group (n=10) were fed with normal diet; rats in high fat group (n=10) were fed with high fat diet; animals in simvastatin+high fat group (n=10) were fed with high fat diet and were received simvastatin 10 mg·kg⁻¹·d⁻¹ by gastric irrigation. After 18 weeks, the quantitative urine protein in 24 h, the serum cholesterol and triglycerides levels were tested. The pathological changes of renal tissue were observed under optic microscope. The expressions of GRP78 and p-JNK in renal tissues were examined by immunohistochemistry. The apoptotic cells in the kidney were detected by TUNEL staining. The mRNA expressions of GRP78 and CHOP were examined by RT-PCR. RESULTS: The quantitative urine protein in 24 h, the serum lipid, the expressions of GRP78 and p-JNK proteins, the mRNA expressions of GRP78 and CHOP as well as the apoptotic cells in renal tissues were increased in high fat group (P<0.01). The quantitative urine protein in 24 h, the serum lipid, the expression of GRP78 and p-JNK proteins, the mRNA expressions of GRP78 and CHOP as well as the apoptotic cells in renal tissues were remarkably reduced in simvastatin+high fat group than those in high fat group (P<0.05). CONCLUSION: The endoplasmic reticulum stress is engaged in the renal injury caused by hyperlipidemia. The simvastatin play a role in renal protection by inhibiting the endoplasmic reticulum stress in the kidney.

Key words [Hyperlipidemia](#) [Endoplasmic reticulum stress](#) [Simvastatin](#)

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