

论著

血浆凝血酶敏感蛋白-1在肾间质纤维化中的表达

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摘要

目的: 观察不同时间点血浆凝血酶敏感蛋白-1 (TSP-1) 在蛋白超负荷肾病大鼠中的表达, 分析其与肾小管间质纤维化的关系。方法: 45只雄性SD大鼠右肾切除后, 随机分成牛血清蛋白 (BSA) 组和对照组, BSA组大鼠予以腹腔注射牛血清白蛋白, 对照组注射生理盐水。分别在第1, 5, 9周末, 检测血常规及生化指标, 各时相尿蛋白定量; 肾组织行光镜、免疫荧光及电镜检查。采用免疫印迹法检测血浆TSP-1蛋白表达。分析血浆TSP-1表达与肾小管间质病理损害积分之间的相关性。结果: BSA组大鼠24 h尿蛋白定量和肾功能均较对照组有明显差异; 肾小管间质病理积分和肾小球硬化指数明显增高; IgG荧光强度明显高于对照组; 与对照组比较, BSA组大鼠血浆TSP-1蛋白均明显增高。BSA组血浆TSP-1的蛋白表达水平与肾小管间质病理积分呈正相关 ($r=0.836, P<0.01$)。结论: 血浆TSP-1与肾间质纤维化呈正相关, 血浆TSP-1可能是临床判断肾间质纤维化程度的重要指标。

关键词 [凝血酶敏感蛋白-1](#); [蛋白尿](#); [肾间质纤维化](#)

分类号

Expression of plasma thrombospondin-1 in renal interstitial fibrosis

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Abstract

Objective To observe the expression of plasma thrombospondin-1 (TSP-1) at different time in protein-overload rats and to analyze the relationship between plasma TSP-1 expression and renal interstitial fibrosis. Methods Forty-five male Sprague-Dawley rats were randomly divided into a bovine serum albumin (BSA) group and a control group after uninephrectomization. Rats with protein overload nephropathy induced by intraperitoneally injected BSA were used as a model (control group received saline). At the 1st, 5th, and 9th weekend, the level of 24 h proteinuria and renal function was assessed. Pathological changes were observed by electron and fluorescent microscopy. The expression of plasma TSP-1 was detected by Western blot. The relationship between plasma TSP-1 and tubulointerstitial lesions (TIL) score was analyzed. Results Twenty-four hour proteinuria and blood urea nitrogen (BUN) significantly increased in protein-overload rats compared with those in the control group. While protein-overload rats developed more severe fibrosis in the tubular and interstitium. Glomerulosclerosis index and TIL score were upregulated compared with those in the control group. The expression of TSP-1 increased significantly at the 5th and 9th weekend. The expression of TSP-1 was positively correlated with TIL score ($r=0.836, P<0.01$). Conclusion Plasma TSP-1 expression is positively correlated with renal interstitial fibrosis in protein-overload rats. Plasma TSP-1 may be used for an important biomarker of renal interstitial fibrosis.

Key words [thrombospondin-1](#) [proteinuria](#) [renal interstitial fibrosis](#)

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