中国医学科学院学报 2007 29 (4): 478-483 ISSN: 1000-503x CN: 11-2237/R

论著

血必净注射液对烫伤大鼠肾组织高迁移率族蛋白B1和急性肾损伤的干预效果

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收稿日期 2007-1-18 修回日期 网络版发布日期 2007-9-3 接受日期

摘要 摘要：目的 探讨烫伤大鼠肾组织高迁移率族蛋白B1（HMGB1）表达的变化规律, 并观察血必净注射液（简称血必净）对烫伤大鼠肾脏HMGB1及急性肾损伤的可能干预效果。方法 采用大鼠30%总体表面积III度烫伤模型, 78只动物随机分为假伤组（n=18）、烫伤组（n=30）和血必净组（n=30）, 分别于伤后8、24、72h活杀取材。采用逆转录聚合酶链反应检测肾组织HMGB1 mRNA表达、蛋白免疫印迹及免疫组织化学法检测肾组织HMGB1蛋白表达; 同时用全自动生化分析仪测定血清肌酐（Cr）水平, 采用苏木素-伊红（HE）染色、光镜下观察肾组织病理改变。结果 与假伤组比较, 烫伤组肾组织HMGB1基因和蛋白表达于伤后8、24、72h显著增强（P<0.05, P<0.01）, 血清Cr水平于伤后24、72h显著增高（P<0.05, P<0.01）。给予血必净治疗后24、72h动物肾组织HMGB1基因和蛋白表达均显著抑制（P<0.05, P<0.01）, 血清Cr水平亦显著降低（P<0.05）。光镜下观察烫伤组肾组织大量炎细胞浸润, 其中以24h最重, 血必净组24、72h病理形态改变则明显减轻。结论 HMGB1作为晚期炎症因子参与严重烫伤后肾脏炎症反应及组织损害的病理生理过程, 血必净治疗可显著下调肾组织HMGB1合成与释放, 并减轻烫伤所致急性肾损伤。

关键词 烫伤 血必净注射液 高迁移率族蛋白B1 急性肾损伤

分类号

Effect of Xuebijing Injection on Renal High Mobility Group Box-1 Protein Expression and Acute Kidney Injury in Rats after Scald Injury

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Abstract ABSTRACT:Objective To investigate the change in renal high mobility group box-1 protein (HMGB1) levels, and the effect of Chinese traditional medicine-Xuebijing injection on HMGB1 expression as well as acute kidney injury in rats after scald injury. Methods Wistar rats were subjected to 30% full-thickness scald injury followed with delayed resuscitation. Totally 78 animals were divided into sham scald group (n=18), scald injury group (n=30), and Xuebijing injection treatment group (n=30). All animals were sacrificed at 8, 24, and 72 hours postburn. Renal tissue and blood samples were harvested to determine HMGB1 mRNA as well as protein expression and organ functional parameters. HMGB1 mRNA level was semi-quantitatively measured by the reverse transcription polymerase chain reaction taking GAPDH as an internal standard, and protein expressions of HMGB1 were detected by both Western blot and immunohistochemistry. Serum crea- tinine (Cr) contents were measured by automatic biochemistry analyzer. In addition, pathological lesions in kidney were observed under light microscope using HE staining. Results Compared with sham scald group, both mRNA and protein expressions of HMGB1 were significantly enhanced in the kidney at 8, 24, and 72 hours after scald injury (P<0.05, P<0.01), meanwhile serum Cr contents were markedly increased following acute insults (P<0.05, P<0.01). Treatment with Xuebijing injection could markedly down-regulated renal HMGB1 mRNA expression and protein release at 24 hours and 72 hours (P<0.05, P<0.01), and significantly reduced serum Cr content following scald injury (P<0.05). Many inflammatory cells in renal ti- ssues were observed using light microscope following scald. The histological morphology of kidney lesions was ameliorated after treatment with Xuebijing injection. Conclusions HMGB1, a late mediator, appears to be involved in the pathogenesis of excessive inflammatory response and acute kidney damage. Treatment with Xuebijing injection can inhibit HMGB1 synthesis and release in renal tissues, and may prevent the development of acute kidney injury induced by serious scald injury.

Key words scald injury Xuebijing injection high mobility group box-1 protein acute kidney injury

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