



Xiayuxue decoction reduces renal injury by promoting macrophage apoptosis in hepatic cirrhotic rats

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ABSTRACT. Renal pathological changes in cirrhotic rat have not been extensively reported. The aim of this study was to investigate whether Xiayuxue decoction (XYXD) could attenuate renal injury induced by bile duct ligation (BDL), with special focus on the mechanisms promoting renal macrophage apoptosis. The rats were treated with BDL for 5 weeks and administered 0.36 g/kg XYXD intragastrically from day 1 of initiating BDL. Renal tissue was monitored by hematoxylin-eosin and Sirius red staining. Macrophage infiltration and proinflammatory cytokines such as tumor necrosis factor and chemokine ligand 2 were detected by quantitative polymerase chain reaction. Macrophage apoptosis was detected by double immunofluorescence staining. Blood urea nitrogen, creatinine, and glomerulus diameter increased significantly after a 5-week BDL treatment in XYXD (BDL-XYXD) rats. CD68 and pro-inflammatory cytokine

mRNA increased in the kidneys of control (BDL-water) rats. Fluorescence microscopy analysis showed that XYXD promoted apoptosis in renal CD68+ macrophages. Collogen1 (Col 1), pro-fibrogenic cytokines, and α -smooth muscle actin in kidneys of BDL-water rats increased significantly compared to the sham group. XYXD inhibited Col 1 and pro-fibrotic factors in BDL-XYXD rats. Our results demonstrated that XYXD significantly reduced renal injury by, at least in part, promoting macrophage apoptosis in rats with damaged renal histopathology due to BDL-induced cirrhosis.

Key words: Macrophage; Apoptosis; Renal injury; Xiayuxue decoction; Liver cirrhosis