Immunohistopathology Study Of Collagen XVIII/Endostatin In Experimental Endotoxemic Acute Renal Failure

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Acute renal failure(ARF) is a frequent complication of gram-negative sepsis and presents a high risk of mortality. LPS-induced ARF is associated with hemodynamic changes that are strongly influenced by the overproduction of nitric oxide(NO) through the cytokine-mediated upregulation of inducible NO synthase(iNOS). LPS-induced reductions in systemic vascular resistance paradoxically culminate in renal vasoconstriction. CollagenXVIII is an important component of the extracellular matrix and is expressed in basement membranes. Its degradation, by matrix metalloproteases, cathepsins, and elastases, results in the generation of endostatin(ES), claimed to have antiangiogenic activity and to be a prominent vasorelaxing agent. The aim of this study was to evaluate the expression of endostatin in an endotoxemic ARF model. ARF was induced in C57BL6J mice by intraperitoneal injection of LPS(10mg/Kg). Mice were sacrificed 4 and 12hour later, blood for biochemical and tissue for histological analysis. As early as 4h after LPS administration, blood urea, creatinine and NO levels were significantly increased compared to the control group($p < 0.05$).The immunohistological examination revealed that acute injury caused by LPS leads to an increase of endostatin and a decrease of CD31 staining. The results indicated that in the early phase of endotoxemic ARF endostatin may play a role in the reduction of renal capillary density and, consequently, in alterations of the intrarenal hemodynamics.

Keywords: Acute Renal Failure, Lipopolysaccharide, Endostatin.

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