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# Protective Effect of Oxymatrine on Kidney Function in Sepsis Rats and its Relation with Inflammatory Response and TLR4/NF-κB Signaling Pathway

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***SUMMARY*. This study investigated the protective effect of oxymatrine (OMT) on kidney function in sepsis rats and its relation with inflammatory response and Toll like receptor 4 (TLR4)/nuclear factor kappa-B (NF-κB) signaling pathway. The rat model of sepsis was made by cecal ligation and puncture (CLP) method. The modeled rats were divided into CLP and CLP+OMT groups. In addition, the sham-operated (SO) and SO+OMT groups were set. The SO+OMT and CLP+OMT groups were treated with 100 mg/kg OMT by intraperitoneal injection. After 4 h from the surgery, compared with CLP group, in CLP+OMT group the serum creatinine, blood urea nitrogen, neutrophil gelatinase-related lipid carrier protein and kidney injury molecule-1 levels were significantly decreased ($P < 0.05$), the serum tumor necrosis factor α, interleukin 6 and interleukin 1β levels were significantly decreased ($P < 0.05$), and the kidney tissue TLR4 and NF-κB p65 protein expression levels were significantly decreased ($P < 0.05$). In conclusion, OMT can effectively reduce the inflammatory response and down-regulate the TLR4/NF-κB signaling pathway, thus exerting the kidney protective effect in sepsis rats.**

*RESUMEN*. Este estudio investigó el efecto protector de la oximatrina (OMT) sobre la función renal en ratas con sepsis y su relación con la respuesta inflamatoria y la vía de señalización del receptor 4 Toll like (TLR4)/factor nuclear kappa-B (NF-κB). El modelo de sepsis en ratas se realizó mediante el método de ligadura y punción cecal (CLP). Las ratas modeladas se dividieron en grupos CLP y CLP+ OMT. Además, se establecieron los grupos simulados (SO) y SO+OMT. Los grupos SO+OMT y CLP+OMT fueron tratados con 100 mg/kg de OMT mediante inyección intraperitoneal. Después de 4 h de la cirugía, en comparación con el grupo CLP, en el grupo CLP+OMT la creatinina sérica, el nitrógeno ureico en sangre, la proteína transportadora de lípidos relacionada con la gelatinasa de neutrófilos y la molécula 1 de lesión renal disminuyeron significativamente ($P < 0.05$); los niveles séricos de factor de necrosis tumoral α, interleucina 6 e interleucina 1β disminuyeron significativamente ($P < 0.05$) y los niveles de expresión de la proteína TLR4 y NF-κB p65 del tejido renal disminuyeron significativamente ($P < 0.05$). En conclusión, la OMT puede reducir efectivamente la respuesta inflamatoria y regular negativamente la vía de señalización TLR4/NF-κB, ejerciendo así efecto protector renal en ratas con sepsis.

*KEY WORDS*: inflammatory response, kidney injury, NF-κB, oxymatrine, TLR4.

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