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Diosmin as protective action against Renal Ischemia-Reperfusion Injury in rat

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Objectives: Diosmin has been identified as having antioxidant and cytoprotective action in several experiments. In the kidney transplant, Ischemia-reperfusion injury is still a major problem, and the inflammatory response to ischemia-reperfusion wound exacerbates the resulting renal injury. The current study examined whether Diosmin has randomized effects on ischemia-reperfusion-induced acute kidney injury in rats.

Methods:

In male C57BL/6 mice, renal ischemia-reperfusion injury was induced by bilateral renal pedicle occlusion over a duration of 30 minutes, followed by 48 hours of reperfusion. Diosmin (25 mg/kg oral) was given 4 days prior to injury to ischemia-reperfusion. The saline with phosphate buffer was used as controls. Blood and renal tissues were assessed at 48 hours after the injury to ischemia.

Results:

Diosmin therapy has significantly reduced blood urea, urinary creatinine and tubular kidney damage ($P < .05$). Western blot revealed that the amount of hemum oxygenase-1 and B-cell lymphoma-2 was increased significantly by diosmin at 48 hours of injury and the level of inducible nitric oxide synthase attenuated.

Conclusions: Diosmin thereby enhances acute renal ischemic reperfusion damage by reducing inflammation and apoptosis.