The protective effects of erdosteine and reduced L-glutathione on renal ischemia-reperfusion injury in the pig

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Objective: To evaluate the effects of erdosteine and reduced L-glutathione on the oxidant/antioxidant status, renal function, and microscopy of renal tissues in pigs undergoing unilateral renal ischaemia-reperfusion(I/R).

Materials and methods: Landrace and Yorkshire mixed pigs were randomly assigned to one of the four group: control (n=4, untreated pigs), reduced L-glutathione (n=4, 4 mg/kg IV), erdostein (n=4, 20 mg/kg/day for 2 days before experiment) or combination (n=4, reduced L-glutathione + erdostein). Pigswere unilaterally nephrectomized and subject to 30 min of renal pedicle occlusion followed by 1, 3, 5, 7, 14 day of reperfusion. Renal I/R injury was evaluated by the oxidant/antioxidant status, renal function, and microscopy of renal tissues

Results: The elevation of creatine and BUN levels was lower in the treated groups, compared with the control group. The catalase activity and the GPx activity were higher in the erdosteine and the combination group. The erdosteine group showed lower the protein carbonyl activity and the lipid hydroperoxide activity than other groups. Histological findings, in the erodsteine group, the severity of damage was less when compared to the control and the reduced L-glutathione groups.

Conclusion: Erdosteine and reduced L-glutathionetended to be benefit for renal function during renal ischaemia-reperfusion in pigs. However only erdosteins effectively treatedpathological renal damage in IR injury.

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