ULINASTATIN IMPROVE KIDNEY ISCHAEMIC DUE TO CARDIOPULMONARY RESUSCITATION IN RABBITS

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Objectives The purpose of the present study was to investigate the protective roles of ulinastatin (UTI) on the kidney medulla after cardiopulmonary resuscitation (CPR) in rabbits

Methods 24 male New Zealand adult rabbits were randomised into two groups (UTI vs normal saline; n=12 per group) after return of spontaneous circulation (ROSC) from 5 min ventricular fibrillation induced by alternating current. The UTI at the dose of 2.5×10⁴ U/kg was administered immediately after ROSC to the animals in UTI group, while NS was performed in the control group. The urinary output was recorded and the serum concentration of BUN and creatinine were detected at five different time points, respectively: 4 h, 8 h, 12 h, 16 h, 20 h and 24 h after ROSC. The animals were sacrificed 24 h after ROSC and the kidney medullas sections were analysed to observe the degree of inflammatory cell infiltration, the expression of TNF-α and MDA.

Results 6 rabbits in control group and 6 animals in UTI group survived to the end point of experiment. The urinary output was decreased gradually to the lowest at 8 h–12 h after ROSC and then increased in both groups. The urinary output in UTI group was significantly more than that in control group 8 h after ROSC (p<0.05). The serum concentrations of BUN and creatinine were significantly lower in UTI group than in control group 4 h after ROSC (p<0.05). The myeloperoxidase-positive cells in control group were much higher than in UTI group (p<0.05). The expression of TNF-α and MDA in the kidney medullas in UTI group were lower than in control group (p<0.05, p<0.01).

Conclusions The standard dose of UTI (2.5×10⁴ U/kg) performed in rabbits suffered from CPR may alleviate the degree of inflammatory cell infiltration, decrease the expression of TNF-α and MDA in kidney medulla. UTI had protective effects on the renal function after CPR.