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METABOLIC PROTECTIVE EFFECT OF WOBENZYM IN AN EXPERIMENTAL MODEL OF ACUTE KIDNEY INJURY

Jabborova M.I
Tashkent medical academy,Tashkent, Uzbekistan

Irisqulov B.U
Tashkent medical academy,Tashkent, Uzbekistan

INTRODUCTION

Acute kidney injury (AKI) is a pathological condition characterized by a sharp decline in kidney function, leading to metabolic disturbances and the accumulation of toxic substances in the body. One of the key approaches in AKI treatment is metabolic protection of the kidneys. Various drugs, including Wobenzym and dopamine, are being used for this purpose. Wobenzym is a drug containing a complex of enzymes with anti-inflammatory and immunomodulatory properties. This study aimed to investigate the protective effects of Wobenzym in an experimental model of AKI.

MATERIALS AND METHODS

The study was conducted on 45 white outbred rats, in which AKI was induced using glycerol. The animals were divided into three groups:

1. Intact group – received standard food and distilled water without any additional interventions.
2. AKI model group – received a single intramuscular injection of 10 ml/kg of 50% glycerol solution.
3. Wobenzym-treated group – received oral Wobenzym at a dose of 20 mg/kg for six days, followed by a single intramuscular injection of 10 ml/kg of 50% glycerol solution on the seventh day.

All animals were housed in metal cages with free access to food and water, maintained at a temperature of 22–23°C with a 12-hour light/dark cycle. After AKI induction, hematological and biochemical blood parameters were assessed, and histological analysis of kidney tissues was performed.

RESULTS

The results demonstrated that Wobenzym significantly reduced blood levels of urea, creatinine, and cystatin C ($p<0.05$). Histological analysis revealed a decrease in necrosis and inflammation in kidney tissues of the Wobenzym-treated group compared to the AKI model group. Moreover, hematological and biochemical parameters in the Wobenzym-treated group showed improvement compared to the AKI model group.

Parameters	Intact group	AKI model group	AKI+Wobenzym group
Hemoglobin g/l	13,9±0,7	98,1±4,3	116,6±5,4
Leukocytes ($\times 10^3$/ml)	14,4±1,1	19,1±1,8	13,5±2,1
Erythrocytes ($\times 10^6$/ml)	5,6±0,5	3,72±0,73	5,57±0,42
Platelets ($\times 10^3$/ml)	606,21±40,6	517±12	565±10,5
Hematocrit (%)	39,2±1,6	30,1 ±1,6	35,4 ±2,1
Creatinine (mol/l)	94,7±5,6	128,7±5,6	112,8±1,6
Urea (mmol/l)	12±4,8	15,1±3,8	15,6±1,8
Total protein (g/l)	85,2±2,3	68,2±3,5	87±3,8
Albumin(gr/l)	40,7±2,4	33,5±1,7	38±1,3

CONCLUSION

The study demonstrated that Wobenzym exerts a protective effect in AKI by improving kidney function, reducing inflammation, and normalizing biochemical and hematological parameters. These findings suggest.

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