WARM ISCHEMIA TIME ON KIDNEY FUNCTION IN EXPERIMENT

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Background. Warm ischemia to the kidneys is unavoidable during certain surgical operations, such as transplantation. In this work, we investigated dynamic changes in the function of the kidneys as a result of warm ischemia.
Methods: 78 experimental white rats were used to create warm ischemia by compressing the renal arteries for 12, 24, 36, and 48 minutes in 4 groups. Before euthanization on days 3, 7, and 14, urine was collected for 24 hours using metabolic chambers. Statistical processing of the material was carried out using the SPSS 23 program, methods of parametric and nonparametric statistics were used, and the arithmetic mean and standard error were calculated with the Mann-Whitney test. The results were considered significant at $p<0.05$.

Results: Warm ischemia lasting 12 minutes did not show any significant deviations in GFR from normal ($P<0.05$), with 24 and 36 minutes, there was a gradual decrease in GFRs on days 3 and 7 with a tendency to increase by day 14 ($P<0.05$), at 48 minutes, a sharp decrease in the GFR was observed without any signs of recovery ($P<0.05$). Analysis of daily diuresis showed a significant ($P<0.05$) increase in diuresis within the normal range on days 7 and 14 after in subgroup 12 minutes of warm ischemia. There was a decrease in diuresis on day 7 and its recovery on day 14 within subgroup 24 and 36 minutes of ischemia. Moreover, the indicators of the group of rats with 36 minutes of ischemia on the 7th day were significant ($P<0.05$). Also significant was ($P\leq0.05$) a sharp decrease in daily diuresis on days 3 and 7 down to anuria by day 14 after 48 minutes of warm ischemia.

Conclusions: 12-minute warm ischemia leads to a slight decrease in renal function on days 3 and 7, which are fully restored by day 14. 24 and 36-minute warm ischemia leads to a noticeable decrease in renal function with a tendency to recover on the 14th day. 48 minutes of warm ischemia leads to a sharp decrease in renal function without recovery.

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