

Renal pathologies development during experimental opisthorchiasis

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Motivation and Aim: Motivation and Aim: Opisthorchiasis caused by trematode *Opisthorchis felinus* (Rivolta, 1884) is the most common helminthiasis in Western Siberia. This disease is accompanied by serious liver lesions. Currently, there is indirect evidence that opisthorchiasis, like other parasitic infections, can cause damage to organs that are not related to the its direct localization and migration. Based on this, we suggested that chronic opisthorchiasis can cause structural and functional disorders of the kidneys and heart due to the components contained in the excretory-secretory product in combination with mechanical damage to the epithelium of the bile ducts by helminths [1, 2]. The aim was comprehensive study of renal and heart failure markers in experimental opisthorchiasis renal and heart failure markers in experimental opisthorchiasis.

Methods and Algorithms: Experimental opisthorchiasis *in vivo* on golden hamsters *M. auratus* (1 month to 1.5 years). Renal and heart pathological changes, including cortical tubular casts, casts in medullar tubules, mesangial matrix expansion and cardiomyocytes structure were assessed using semi- quantitative histological analysis. To assess the functionality of the kidneys, biochemical parameters in the blood serum and urine were measured.

Results: Renal tubules casts accumulation and mesangial matrix expansion are linear with the during of infection. In addition, it was found that infection with *O. felinus* was accompanied by an increase in the concentration of creatinine and KIM-1 in the blood serum; protein, KIM-1 and 8-OH-dG in the urine of experimental animals. Biochemical markers of metabolic disorders were also found: blood glucose concentration, cholesterol and triglycerides was increased. Pathomorphological changes in the kidneys correlated with changes in biochemical parameters. INo significant structural and functional changes of the heart during the opisthorchiasis inection in hamsters were revealed.

Conclusion: The mechanisms underlying renal pathology in opisthorchiasis remain unclear, we can conclude that *O. felinus* infection causes gradual progression of glomerulopathy accompanied by tubulopathy.

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References

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