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» Journal Abstract

The effect of the physical effort on the activity of brush border enzymes and lysosomal enzymes of nephron excreted in the urine

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The lysosomal enzymes activities in the athletes urine were designated and presented in this work: N-acetyl-ß-D-glucosaminidase (NAG), ß-glucuronidase (GSR), arylsulfatase A (ASA). The brush border enzymes activities: leucyloaminopeptidase (LAP), alanine aminopeptidase (AAP), ?-glutamyltransferaze (GGT), the trypsin inhibitor activity (UTI) and the total protein and creatinine concentrations were determined as well. Values of examined parameters are presented after its conversion to mmol creatinine units. Nine athletes subjected to physical effort in the frame of the training unit with the speed endurance accent were taken under the examination. The urine was taken before, immediately after and 24 h after effort. 9-fold increase of the protein/creatinine index was observed in the postexercise urine. In the urine taken after next 24h this index decreased to over 2-fold higher value than it presented itself before effort. Almost 3-fold increase of the NAG activity and 4-fold decrease of the ASA activity were noticed in the after effort urine. The brush border enzymes values were higher for over 2-3-fold in the postexercise urine but after next 24h they went down below values observed before effort. The correlation between NAG and brush border enzymes was observes at the level of r=0.7. All changes of examined parameters point at the passing glomerular-tubular troubles of nephrons. It may also be suggested that various forms of changes in the lysosomal enzymes activity are connected with their functions in organism and not with the degree of the renal cells structure damage.

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