EFFECT OF PHYSICAL EXERCISE ON THE SERUM AND URINARY CONCENTRATIONS OF SELECTED ADHESION MOLECULES IN ATHLETES

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Physical exercise leads to transient disturbance of systemic homeostasis and can induce inflammatory changes of various tissues and organs The aim of this study was to analyze the effect of physical exercise on the changes in the blood and urinary concentrations of selected adhesion molecules AM in athletes p MATERIAL AND METHODS The study included a group of cyclists and healthy adolescents Serum concentrations of sICAM sVCAM sP-selectin and sE-selectin were determined in all the participants along with the urinary concentrations of sICAM sVCAM sP-selectin protein and creatinine The AM of cyclists were determined twice before to and after the exercise corresponding to one glycolytic training unit

RESULTS The pre-exercise serum levels of sVCAM and sE-selectin in the cyclists did not differ significantly from the controls The serum concentration of sP-selectin in the cyclists was significantly higher and the level of sICAM- lower than in the controls In the group of cyclists physical exercise was reflected by a significant increase in the serum concentrations of all AM No significant intergroup differences were documented in the case of the urinary total protein and sP-selectin Compared to the respective pre-exercise levels a significant increase in the urinary concentrations of total protein and all analyzed AM was documented post-exercise in the cyclist group

CONCLUSIONS The increase concentrations of adhesion molecules in cyclists suggests that intensive physical exercise induces acute phase reactions associated with the involvement of adhesion molecules, probably as a result of exercise-induced mechanical and metabolic stress.