

The Effect of Wrestling Exercise in Morning and Afternoon on Some Leukocytes, Thrombocytes and Erythrocytes Indices

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Abstract

Introduction: Hematological parameters are very vital and crucial in sport medicine for diagnosing, controlling and preventing purposes. The effect of exercise on homeostasis system depends on factors such as intensity, duration and the initial state. The aim of this study was to investigate the effect of wrestling exercise in morning and afternoon on some leukocytes, thrombocytes and erythrocytes indices.

Materials and Methods: The semi-experimental study was conducted. The study subjects consisted of wrestlers from Neyshabur 19 wrestler volunteer were randomly assigned to two experimental (n =12) and control (n =7) groups. Experimental group participated in similar wrestling exercises in the morning and afternoon. Blood sampling was performed before and immediately after morning and afternoon exercise to determine the hematological characteristics. To compare the two groups, multivariate test was used and the significant level was determined at $P < 0/05$.

Results: The results showed that wrestling exercise led to significant increase in PLT in the morning ($P = 0/003$) and afternoon ($P = 0/013$). Increase in PLT was higher in the morning than afternoon with Eta squared 0/45 and 0/35 respectively. Furthermore, the RDW and MPV significantly decreased ($P = 0/01$) in the afternoon than morning session in the experimental group although was not significant compared to the control group.

Conclusion: It should be considered that in high-risk individuals the blood platelets during heavy exercise may increase so these people should be provided with the proper recovery. Furthermore, positive changes of hematological indices were higher in the afternoon than morning and require less effort. However, doing further research on the exercise time seems necessary.

Key words: wrestling exercise, leukocytes, thrombocytes, morning, afternoon