The effect of age and stress of physical activity on red and white blood cells counts & indices

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ABSTRACT

Background & Aim: Investigation of the effect of age and hard endurance workouts on blood cell and RBC indexes.

Materials & Methods: Eighty seven volunteers in 3 groups, young, middle and old ages, after determination of their maximum oxygen consumption in one session, their endurance activity including 30 minutes pedaling on bicycle, with their 60-65 percent of aerobic capability, followed by a rest for 30 minutes, were evaluated. Immediately before and after their activity and during recovery period, hemodynamic factors were measured and 3 blood samples were taken for blood cell count and RBC indexes. In order to evaluate the effect of age on these parameters, and changes during activity and recovery, one way variance analysis was performed.

Results: The plasma volume, after hard endurance workouts decreased and after recovery period raised significantly. Endurance activity caused a significant increase for all measurable factors but not mean cell volume. The rate of hemoglobin, hematocrit and RBC count significantly increased in response to endurance activity, while after recovery, all factors, except mean cell volume, mean cell hemoglobin and mean cell hemoglobin concentration decreased significantly. There was no significant difference between hematological factors’ response to the endurance activity and recovery period in different age groups.

Conclusion: On the basis of this research, it is concluded that age has no effect on hematological determining responses to the hard endurance workouts and recovery period.

Keywords: Red Blood Cells Indexes, White Blood Cells Count, Platelets Count, Age, Physical Activity

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