

The biochemical oxidative stress changes in athletes

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Abstract

Background. It is necessary to maintain the physical condition through exercise, which develop mechanisms of adaptation to current and future stress, mechanisms that are favourable for the mental condition, as well as specific mechanisms for increasing the physical condition.

Aims. Biochemical causes of oxidative stress were studied pre- and post training on urinary and salivary indicators in athletes.

Methods. Research was conducted on one batch of players with a mean average age of 19.44 ± 0.38 years and weight 67.70 ± 4.64 kg, during the competition. Biochemical oxidative stress was studied on balance indicators of the oxidant / antioxidant in salivate and urine, pre- and post training.

Results. In 21 pre-training (T1 initial) versus pre-training values from day 1 (T0 initial), significant decreases in MDA and a significant decreases in HD were found in urine; significant increases in MDA and a significant decreases in HD were found in saliva. On day 21 post-training (T1 final) versus post-training values from day 1 (T0 final), significant decreases in MDA and a significant decreases of HD were found in urine; significant increases of MDA and significant decreases in HD were found in saliva. A weak correlation between indicators of oxidants/antioxidants balance within the times T0 and T1 was generally evidenced.

Conclusions. Pre-training day 21 shows a significant decrease in urinary MDA and a significant increase in saliva, while a significant decrease in urinary and salivary HD were compared to pre-training values from day 1. Physical training is a physical neuromuscular and oxidative urinary eustress factor and salivary oxidative biochemical distress factor. Changes in oxidative stress, studied non-invasively in the urine and saliva in athletes, recommends these fluids for exploring the biochemistry of stress in training and monitoring effort.

Keywords: oxidative stress, athletes, oxidants/antioxidants balance.