

Monitoring biomarkers during preseason preparation period in professional soccer players

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Aim. The present study aimed at investigating the effect of a 3-week experimental intervention on biomarkers in professional soccer players during the preseason preparation-period.

Methods. Eight participants (age 22.5 ± 2.2 yrs) were enrolled in the study. During the physical preparation period players have attended a training program (51,9 hours) planned by coaches of "Equipe-Sicilia-2009".

Results. At rest, the lipid profile, the creatine kinase (CK), the lactic-acid dehydrogenase (LDH) and the expression of nuclear receptors peroxisome-proliferator-activated receptors (PPAR α/γ) were analyzed before starting and after 3 weeks of training sessions. The plasma level of CK in our samples showed great variability already in the baseline: value was on average nearly 500 IU/l showed that a large amount of these athletes were a high responders. The CK level decreased ($p < 0.01$) after 3 weeks of training. No significant changes were found in the LDH plasma level, in the lipid profile and in the expression of mRNA of PPAR α/γ and also no significant person's correlations were found among variables.

Conclusion. We retain that those basal biomarkers, except CK, might not be an effective support for coaches to better understand training adaptations and overreaching mechanisms during a 3-week of preseason preparation-period. More studies are necessary to confirm these results.

Keywords: creatine kinase, lactic acid dehydrogenase, PPAR?, PPAR?, training period