14 e 15 de setembro de 2017

siepe 2017
PESQUISA E INTERNACIONALIZAÇÃO

ISSN 2237-6593

XXIII Seminário de Iniciação Científica
X Seminário Integrado de Ensino, Pesquisa e Extensão
VIII Mostra Universitária

EVOLUTION OF POTENTIAL BIOMARKERS OF ACUTE MUSCLE INJURY AFTER INTENSE PHYSICAL EXERCISE

Pesquisador(es): WILDNER GRANELLA, Lucilene; OTTOBELLE CHIELLE, Eduardo; STACKE MAZIERO, Jorlana; ANDRADE VIDIGAL, Tiago Mateus; KUMMER MALLMANN, Bárbara Lidiane; KARAL, Jaison

Curso: Farmácia

Área: Ciências Biológicas e da Saúde

Resumo: Background: Skeletal muscle injury is a frequent event. The diagnosis using the classical blood markers sometimes produces unsatisfactory results due to the high interindividual variability. Therefore, the identification of reliable and acute biomarkers is important. The objective was to detect biomarkers in plasma, saliva and urine in response to acute muscle damage induced by intense physical exercise.

Methods: A cross-sectional study was conducted with 27 American football players with an average age of 22.5 years old. Before the intense physical exercises (T0), 60 minutes (T1) and 24 hours (T2) after intense physical exercise, was determined the clinical, biochemical and molecular parameters, including Adenosine deaminase (ADA), TBARS, leukocytes, lymphocytes and comet assay.

Results: The serum ADA was significantly higher in T1 and T2, in the urine there was a significant increase in T1, in the saliva there was no significant differences. There was a significant increase in serum TBARS in T2, saliva and urine in T1. The leukocytes increased significantly in T1 and decreased in T2, while lymphocytes increased in T1 and T2. Through the comet assay was observed significant DNA damage in T1 and T2.

Conclusion: Taken together, the results showed that serum and urinary ADA activity, serum, urinary and salivary TBARS are robust and promising biomarkers of acute muscle injury and that the comet assay allows a quick and effective evaluation of DNA lesions induced by physical exercise and could be used to monitor athletes avoiding injuries that are more serious.

Palavras-chave: Muscle. Physical Exercise. Saliva. Biomarkers. Athletes.

E-mails: lucilene_03@hotmail.com; eduardochielle@yahoo.com.br