

Neurobiology of performance anxiety: a new approach

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The aim of this study is to investigate the neurobiology of stress/emotionality, creating a multidisciplinary assessment model, which can help to provide psychological and physiological responses depending on the genetic background related to sport performances, social closeness and performance anxiety management in team sports.

We enrolled 20 female volleyball players aged 13 ± 1 years old played in two different teams during a regional championship final. Saliva collection was carried out before and after the match. In order to evaluate the neuroendocrine effectors involved in stress and performance, we analyzed cortisol and progesterone levels through Elisa standard kit as well as HSP70 and amylase activity as stress-induced markers. As concern the psychometric assessment, we administered the CSAI-2 test, Closeness Generating Procedure and STAI test. Genomic DNA was isolated from saliva cells using a QIAamp saliva kit according to the manufacturer's protocols. The SNP of the 5-HTTLPR, BDNF, DRD4 were analyzed.

The results of the T-test performed on the total results showed a statistically significant relationship ($p < 0.05$) in cortisol levels pre and post match, as well between amylase and HP70 according to the genetic background. The analysis performed using just post match samples show a negative correlation between social closeness, cortisol and progesterone levels, with $p < 0.010$ for progesterone vs social closeness and $p < 0.012$ for cortisol vs social closeness. About the winner teams and the loser teams, there is a negative correlation between pre match cortisol levels and performance anxiety ($p < 0.042$).

Bibliography

Dr. Patrizia Proia has completed his PhD in Neuroscienze at the age of 34 years from Palermo University and postdoctoral studies on performing enhancing of anabolic androgenic steroids from University of Maryland. She is an assistant professor in biochemistry and she has published more than 20 papers in reputed journals and has been serving as a reviewer of repute. She now start a new multidisciplinary approach in order to analyze the effect of the exercise in pathological and healthy people investigating the neurobiology response (on neurotrophines, hormones and protein stress related), genetic background and psychological assessment.