
Oxidative Stress in Pathogenesis of Posttraumatic Stress Disorder in a Contingent of International Operations

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Abstract

Objective: The Contingent of the International Operations (CIO) is subject to various extreme factors in action, which can cause Posttraumatic Stress Disorder (PTSD). Besides considerably growing excitotoxicity level this leads to uncompensated Oxidative stress (OS) because of the accumulation of the excess of the reactive oxygen species. Neuronal membranes phospholipids are especially vulnerable to damage by OS, the injury leads to the receptor-mediated signal transduction and, furthermore, information processing disorders. Indeed there are difficulties in rating and interpreting because of inhomogeneities in gender, race, age, nutritional and deployment factors, different stressful military experiences. **Research aim:** to assess PTSD and OS levels and their correlation in CIO.

Methods: Prospective study. Totally 143 participants: Latvian CIO, regular personnel, males, Europeans, average age of 27.4, before and after the same Peace Support Mission (PSM) were examined. Questionnaires PCL-M, the valid Latvian language "military" version were used for PTSD evaluation. Antioxidant enzyme activity - Glutathione peroxidase (GPx) and lipid peroxidation intensity - Malondialdehyde (MDA) as OS indicators in blood were determined. Data were processed using SPSS 15.0.

Results: Before PSM: response rate (RR) 97.9%, answers of study participants corresponded to PTSD diagnosis necessary criterions, constituent 1.4%, GPx level decreased in 33.0%, MDA level increased in 75.5% of samples. After PSM: RR 93.8%, PTSD 6.7%, GPx level decreased in 51.7%, MDA level increased in 80.0%.

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Conclusions: There is positive correlation between increase of OS and PTSD levels in CIO. Increased free radical level beyond excitotoxicity is a possible causal factor for clinical manifestation of PTSD.