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GLUTATHIONE LEVELS IN PATIENTS WITH CHRONIC AND FIST-EPISODE SCHIZOPHRENIA AND ASSOCIATION WITH NEUROLOGICAL SOFT SIGNS

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Introduction: Recent studies have suggested that the deficit of glutathione (GSH), a major antioxidant, seems to play a role in the pathophysiology of schizophrenia. Moreover, oxidative stress may contribute to the development of neurological abnormalities, including tardive dyskinesia and parkinsonism symptoms.
Objectives: To determine plasma glutathione levels and to explore their association with neurological soft signs (NSS) in patients with chronic and first-episode schizophrenia.
Methods: A case-control study carried-out on three groups: sixty clinically stable patients with chronic schizophrenia, twenty-three patients with first-episode schizophrenia and thirty matched healthy controls. Glutathione levels: total (GSHt), reduced (GSHr) and oxidized glutathione (GSSG) were determined by spectrophotometry. NSS were assessed in three groups by a standardized neurological examination (Krebs et al., 2000).
Results: Plasmatic GSHt and GSHr levels were significantly decreased in patients with chronic and first-episode schizophrenia. All NSS scores were significantly higher in two groups of patients compared to controls. No association was found between NSS scores and glutathione levels in patients with chronic schizophrenia. However, in patients with first-episode, a negative correlation was found between GSHt levels and involuntary movement sub-score (r= -0.62, p=0.008).
Conclusion: These results suggest that GSH deficit is not related to the stage of disease and may be an important indirect biomarker of oxidative stress in schizophrenia. The association between low GSHt level as a marker of oxidative stress and involuntary movements could suggest that oxidative stress may contribute to the brain damage which leads to an increased prevalence of these NSS.

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