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Oxidative Stress in Egyptian Children with Autism: Relation to Autoimmunity

D. Hewedi¹, G. Mostafa², E.M.A.N. El Hadidi³

¹Department of Psychiatry - Faculty of Medicine - Ain Shams University, Institute of Psychiatry, Cairo, Egypt

; ²Department of Pediatrics - Faculty of Medicine - Ain Shams University, Clinic of Psychiatry, Cairo, Egypt ;

³Department of Clinical Pathology - Faculty of Medicine - Ain Shams University, Immunology Laboratory, Cairo, Egypt

Introduction: Oxidative stress has been implicated in the pathogenesis of major psychiatric disorders, as the brain has comparatively greater vulnerability to oxidative damage

Objectives and Aims: We are the first to study the relationship between oxidative stress (by measuring plasma F2-isoprostane, as a marker of lipid peroxidation, and glutathione peroxidase, as an antioxidant enzyme) and autoimmunity (as indicated by serum antineuronal antibodies).

Methods: We studied these markers in a group of 44 Egyptian autistic children and 44 healthy matched-children.

Results: Our results showed that oxidative stress was found in 88.64% of autistic children. Oxidative stress, resulting from elevated plasma F2-isoprostane and/or reduced glutathione peroxidase, had significant risk for antineuronal positivity, which was found in 54.5% of autistic children, (odds ratio: 12.38 and 6.43, respectively, confidence interval: 1.37–112.10 and 1.21–34.19, respectively).

Conclusions: the strong association between oxidative stress and autoimmunity in autistic children may indicate the possible role of oxidative stress, through induction of autoimmunity, in some autistic patients. Therefore, studies considering the role of antioxidants and immunotherapy in amelioration of autistic manifestations are recommended.