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Selected biochemical parameters related to detoxification mechanism as correlates to social responsiveness and severity of autism

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utism is a syndrome with a number of etiologies with differing mechanisms that lead to abnormal development. Identifying Aepigenetic biomarkers of autism in patients with different degrees of clinical presentations (i.e. mild, moderate and severe) will almost certainly yield successful initiatives that will lead to a better understanding of the pathogenesis and hence clarify concepts to design the most effective early diagnostic strategies and treatments for this disorder. In this work, lead (Pb), mercury (Hg) as two toxic heavy metals, glutathione-s-transferase (GST) and vitamin E were measured in red blood cells and/ or plasma of subgroups of autistic patients who recorded different Social Responsiveness Scale (SRS) and Childhood Autism Rating Scale (CARS) compared to age and gender matching healthy control. The obtained data proved that autistic patients recorded significantly high levels of Pb and Hg together with low GST activity and vitamin E concentration. While Hg was not correlated to the severity of the disease, Pb, GST and vitamin E were correlated with both scores (SRS and CARS). By using Reciever Operating characteristics (ROC) analysis and predictiveness curves, the four measured parameters show satisfactory sensitivity, very high specificity and excellent predictiveness which confirm the critical role of the impaired detoxification pathway in the etiology of autism. The negative correlations recorded between Hg and Pb in one hand and vitamin E and GST in the other hand could support the use of antioxidants as early intervention strategy.

Biography

Afaf El-Ansary, female, biochemist, graduated from biochemistry department, Ain Shams University, Egypt in 1974. She worked in the National Research Centre, Egypt from 1976-2000, since 2001, she is working in biochemistry department, King Saud University, KSA. She has published more than 45 papers related to metabolic integration between schistosome parasite and molluscan hosts. She recorded a patent on the "use of sublethal concentration of solanum nigrum plant for the control of schistosomiasis". She was recognized by the Marquis Who's Who in science and engineering, Eight's edition, 2005-2006. She is member in number of national and international societies and she is recorded as reviewer in many international journals. In recent year she focused on the screening of biochemical markers related to autism and she got another 40 published papers in high impact factor Journals related to this research interest. She is member in Predictive, Preventive and Personalized Medicine Society (Moscow).

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