

Altered Vascular Phenotype in Autism

Correlation With Oxidative Stress

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Background Autism is a neurologic disorder characterized by impaired communication and social interaction. Results of previous studies showed biochemical evidence for abnormal platelet reactivity and altered blood flow in children with autism.

Objective To evaluate the vascular phenotype in children with autism.

Design and Main Outcome Measures Urinary levels of isoprostane $F_{2\alpha}$ -VI, a marker of lipid peroxidation; 2,3-dinor-thromboxane B_2 , which reflects platelet activation; and 6-keto-prostaglandin $F_{1\alpha}$, a marker of endothelium activation, were measured by means of gas chromatography-mass spectrometry in subjects with autism and healthy control subjects.

Setting and Subjects Children with a clinical diagnosis of autism attending the Pfeiffer Treatment Center.

Results Compared with controls, children with autism had significantly higher urinary levels of isoprostane $F_{2\alpha}$ -VI, 2,3-dinor-thromboxane B_2 , and 6-keto-prostaglandin $F_{1\alpha}$. Lipid peroxidation levels directly correlated with both vascular biomarker ratios.

Conclusion Besides enhanced oxidative stress, platelet and vascular endothelium activation also could contribute to the development and clinical manifestations of autism.

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