

Clinical Utility of Salivary Cytokines for Children with Attention Deficit Hyperactivity Disorder

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Abstract : The goal of this study was to examine the possibility of salivary cytokines for the screening of attention deficit hyperactivity disorder (ADHD) in children. We carried out a case-control study, including 19 children with ADHD and 17 healthy children (controls). A multiplex bead array immunoassay was used to conduct a multi-analysis of 27 different salivary cytokines. Six salivary cytokines (interleukin (IL)-1 β , IL-8, IL12p70, granulocyte colony-stimulating factor (G-CSF), interferon gamma (IFN- γ), and vascular endothelial growth factor (VEGF)) were significantly associated with the presence of ADHD ($p < 0.05$). An informative salivary cytokine panel was developed using VEGF by logistic regression analysis (odds ratio: 0.251). Receiver operating characteristic analysis revealed that assessment of a panel using VEGF showed "good" capability for discriminating between ADHD patients and controls (area under the curve: 0.778). ADHD has been hypothesized to be associated with reduced cerebral blood flow in the frontal cortex, due to reduced VEGF levels. Our study highlights the possibility of utilizing differential salivary cytokine levels for point-of-care testing (POCT) of biomarkers in children with ADHD.

Keywords : cytokine, saliva, attention deficit hyperactivity disorder, child

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