

The biochemical basis and treatment of autism: Interactions between mercury, transsulfuration, and androgens[☆]

David A. Geier^a and Mark R. Geier^b  

^aThe Institute of Chronic Illnesses, Silver Spring, MD 20905, USA

^bThe Genetic Centers of America, 14 Redgate Ct., Silver Spring, MD 20905, USA

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Abstract

Impairments in social relatedness and communication, repetitive behaviors, abnormal movement patterns, and sensory dysfunction characterizes autism spectrum disorder (ASDs). It has long been recognized that there is a genetic component to some ASDs, but recent studies have also suggested that some ASDs are triggered by environmental factors. Mercury exposure can cause immune, sensory, neurological, motor, and behavioral dysfunctions similar to traits defining or associated with ASDs, and recent studies have shown increased body-burdens of mercury in some ASDs. It has also been shown that mercury exposure can trigger a biochemical cyclical pattern of interaction to develop between the transsulfuration and androgen pathways that are directly characteristic with the biochemistry observed in some ASDs, and would be expected to correlate with the behavioral/physical traits associated with or defining ASDs. In light of potential blocks in manipulating the transsulfuration pathway in ASDs, LUPRON® therapy has been utilized for the treatment of androgen abnormalities in ASDs. The use of LUPRON® in a large cohort of ASDs of various ages has been observed to be associated with a significant clinical amelioration in hyperactivity/impulsivity, aggression, self injury, severe sexual behaviors, and irritability behaviors that frequently accompany ASDs.

Keywords: GnRH; Leuprolide acetate; Precocious puberty; Thimerosal

[☆] Potential conflict of interest: Dr. Mark R. Geier has been an expert witness and a consultant in vaccine/biologic cases before the no-fault National Vaccine Injury Compensation Program (NVICP) and in civil litigation. David Geier has been a consultant in vaccine/biologic cases before the no-fault NVICP and in civil litigation. Dr. Mark R. Geier and David Geier jointly have a patent pending for the treatment of autistic disorders.

 Corresponding author. Tel.: +1 301 989 0548; fax: +1 301 989 1543.