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Immunoglobin Reactivity in Autism and Rett's Syndrome

Audrius V. Plioplys[a, b], *Adonna Greaves*[b], *Kamyar Kazemi*[b], *Earl Silverman*[c]

[a]Mercy Hospital and Medical Center, [b]Surrey Place Centre, and [b]Divisions of Neurology and [c]Immunology/Rheumatology, [b]Departments of Pediatrics and [c]Immunology, The Hospital for Sick Children and University of Toronto, Canada

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Abstract. Blood samples were obtained from 17 patients with autism (8 – 23 years of age; 16 males and 1 female). B cell numbers as measured by anti-B1 antibodies were normal. B cell function (proliferation and in vitro IgG and IgM synthesis in response to pokeweed mitogen) was normal. Quantitative serum immunoglobulins (IgG, IgA and IgM) were normal. When tested against Western blots prepared from normal, human cerebellar tissue, there was an increased incidence of IgG anti-210K neurofilament subunit reactivity (41 vs. 7% in 348 controls; $p < 0.001$). IgM anti-210K reactivity occurred in 53% of the patients (22% in 111 controls; $p < 0.05$) with an overall incidence of anticerebellar Western blot banding of 88% (23% in controls; $p < 0.001$). IgG or IgM reactivity against front cortex Western blots was not observed. Similar investigations performed on 8 girls with Rett's syndrome failed to reveal any abnormalities.

Introduction

Autism is a syndrome characterized by social and communicative deficits of early onset accompanied by abnormal behaviors. There are many biomedical causes underlying autistic symptomatology [1], but in the majority of cases no clear etiology is ascertained.

Immune system abnormalities have been associated with autism. Lymphocyte abnormalities have included inhibition of macrophage migration in response to human myelin basic protein [2], reduced mitogen-induced lymphocyte blastogenesis [3 – 5], decreased numbers of T lymphocytes with altered ratios of helper to suppressor T cells [5], and decreased natural killer cell activity [6].

Abnormalities in the circulating immune system have also been described in autism. There have been reports of defective antibody response to rubella vaccine [7] and the presence of circulating antibodies to serotonin receptors [8] and to neurofilament axonal proteins [4].