UAE International Annual Conference & Exhibition
Abu Dhabi 2023

DOI 10.14293/ACS.2023.416
Available at www.emiratesscholar.com

On the Pathological Relevance and Diagnostic Value of Alpha Synuclein as Novel Biomarker in Autism

Afaf El-Ansary, Ph.D.
Member in Autism Research and Treatment Center, KSA and
Scientific Consultant of Autism Center, Lotus Holistic Medical Center in Abu Dhabi
(Egypt, Saudi Arabia, UAE)

Abstract

Right now, there is no known treatment for autism spectrum disorders (ASD). Interventions to lessen the symptoms include behavioural and speech therapies. The synaptic activities of neurons depend on the presynaptic neurotransmitters. Neurotransmitter release, which transports impulses between neurons, is essential for healthy brain function. Although alpha synuclein's role is not fully known, research points to a critical part it may play in ensuring that presynaptic terminals have a sufficient supply of synaptic vesicles. Alpha-synuclein (α-synuclein) has been related to a number of neurological conditions known as synucleinopathies, such as Alzheimer's disease (AD), Parkinson's disease (PD), dementia with Lewy bodies, and multiple system atrophy. Levels of α-synuclein have been shown to be lower in people with ASD than in age-matched controls. The microbiota-gut-brain axis is important since dysbiosis or leaky gut have been linked to ASD and certain biomarkers related to gut leakiness have been recorded in autistic patients. Additionally, research on children with ASD have shown impaired lipid metabolism and a concurrent neuroinflammatory process in many brain regions that are implicated in microglial activation, leading to a loss of function. According to our most recent research, measuring α-synuclein level as well as its relationship to altered gut microbiota, neuroinflammation, abnormal lipid metabolism, and glutamate excitotoxicity as established etiological mechanisms in children with ASD may help us better understand ASD and its connection to metabolism, which may help with early detection and intervention. Improvement of the CARS score for behavioural patterns and a corresponding α-synuclein level, followed by probiotic or prebiotic supplements, for instance, merits additional investigation into other factors, such as the evaluation of leaky gut biomarkers and pertinent neuronal biomarkers, which is likely to shed light on novel solutions.

.