

European Autism Congress

March 14-15, 2019 | Zagreb, Croatia



Alok Sharma

NeuroGen Brain and Spine
Institute, India

Neuroimaging in autism spectrum

Autism spectrum disorder (ASD), a group of neurodevelopmental disorders, is characterized by abnormal development of brain function and connectivity. Routine magnetic resonance imaging studies have shown some volumetric changes, but inconsistently. Functional neuroimaging modalities have suggested abnormal brain function. We studied the brain function, using [18F] 2 fluoro 2 deoxy D glucose FDG Positron emission tomography – computed tomography scan, of 45 children diagnosed with ASD on the basis of DSM IV – TR criteria. It was found that children with ASD showed hypometabolism in specific regions of brain, such as, amygdala, hippocampus, parahippocampal gyrus, caudate nucleus, cerebellum, mesial temporal lobe, thalamus, superior and middle temporal pole, and higher metabolic uptake in calcarine fissure and Heschl's gyrus. The data obtained from them was compared to the previously published data of neurotypical children. The findings suggested that as compared to the control data, median SUVs in children with ASD decreased linearly as the age progressed. These findings suggest that selective, progressive hypometabolism in specific brain region could be a pathophysiological mechanism in ASD.

Biography

Alok Sharma is the Director of NeuroGen Brain & Spine Institute, Professor and Head of Department of Neurosurgery, LTMG Hospital & LTM Medical College and Consultant Neurosurgeon at Fortis Hospital, Mumbai. He completed MS and MCh from Seth G S Medical College and KEM Hospital, Mumbai and subsequently trained at the Karolinska Hospital, Stockholm, Sweden & University of Colorado Health Sciences Center, Denver, USA. He has published 137 scientific papers, authored 16 books, edited 1 book, contributed chapters in 18 books and made over 150 scientific presentations nationally and internationally. He is Founding President of the "Stem Cell Society (India)" and Vice President of International Association of Neurorestoratology (IANR). He is Founder of "The Indian Journal of Stem Cell Therapy". He has been conferred with numerous awards and honors during his career. He has extensively researched the pathophysiology of various neurodevelopmental disorders and evolved comprehensive treatment options for the disorders like Autism, Cerebral Palsy and Intellectual Disability. He has pioneered the concept of stem cell therapy for incurable neurological disorders. His other areas of special interest are Neuroendoscopy, Psychosurgery, Spinal Fixations & Revascularization for Cerebral Ischemia.

alok276@gmail.com

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