World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:12, No:09, 2018

Pitch Processing in Autistic Mandarin-Speaking Children with Hypersensitivityand Hypo-Sensitivity: An Event-Related Potential Study

Authors : Kaiying Lai, Suiping Wang, Luodi Yu, Yang Zhang, Pengmin Qin

Abstract : Abnormalities in auditory processing are one of the most commonly reported sensory processing impairments in children with Autism Spectrum Disorder (ASD). Tonal language speaker with autism has enhanced neural sensitivity to pitch changes in pure tone. However, not all children with ASD exhibit the same performance in pitch processing due to different auditory sensitivity. The current study aimed to examine auditory change detection in ASD with different auditory sensitivity. K-means clustering method was adopted to classify ASD participants into two groups according to the auditory processing scores of the Sensory Profile, 11 autism with hypersensitivity (mean age = 11.36 ; SD = 1.46) and 18 with hypo-sensitivity (mean age = 10.64; SD = 1.89) participated in a passive auditory oddball paradigm designed for eliciting mismatch negativity (MMN) under the pure tone condition. Results revealed that compared to hypersensitive autism, the children with hypo-sensitivity showed smaller MMN responses to pure tone stimuli. These results suggest that ASD with auditory hypersensitivity and hypo-sensitivity performed differently in processing pure tone, so neural responses to pure tone hold promise for predicting the auditory sensitivity of ASD and targeted treatment in children with ASD.

Keywords : ASD, sensory profile, pitch processing, mismatch negativity, MMN
Conference Title : ICA 2018 : International Conference on Autism
Conference Location : London, United Kingdom
Conference Dates : September 27-28, 2018

Open Science Index, Medical and Health Sciences Vol:12, No:09, 2018 publications.waset.org/abstracts/87043.pdf