



White Matter Alterations in Healthy Individuals with Auditory Verbal Hallucinations Exposed to Atypical Antipsychotics: A Pilot Study

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Pilot Study

Auditory Verbal Hallucinations (AVHs) are prevalent among diverse psychiatric patients, including patients with schizophrenia, bipolar disorder, borderline personality disorder, and anxiety; and they are also experienced by individuals in the general population [1-3]. Applying the strictest AVH criteria, some 0.7% of the general population has experienced AVHs; these people can be defined as healthy individuals with AVHs (Hi-AVHs) [1,4]. Investigating Hi-AVHs may help to clarify the precise pathological features, and thus treatment targets, of AVHs without conflation from other symptoms, such as delusions or thought disturbances [5-7]. Atypical antipsychotic (AaP) medications are known to alleviate AVHs in a variety of psychiatric patients, including patients diagnosed with schizophrenia, bipolar disorder, and borderline personality disorder [8,9-11]. To the best of our knowledge, no study has investigated the relationship between AaP pharmacotherapy and brain White Matter (WM) alterations in Hi-AVHs. In particular, we could not find study of WM alterations before versus after an extended AaP treatment period. In this pilot study, enrolled nine volunteered Hi-AVH subjects volunteered to the study, using Tract-Based Spatial Statistics (TBSS) [12] and paired t tests to explore the effects of AaP on these nine subjects. We found although AaPs alleviated AVH symptoms, WM alterations in these subjects expanded over 6 months of AaP treatment, encompassing most major WM tracts by the end of the observation period, including the corpus callosum, arcuate fasciculus, cortico-spinal tracts, anterior commissure, and posterior commissure. In light of the worsening of AaP-associated WM alterations observed in this study, we suggest that AaPs may not be a good choice for the treatment of Hi-AVHs despite the ability of AaPs to alleviate AVHs symptoms.

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