

Title: Neuroimaging the Brain Function of Schizophrenia Patients on Clozapine

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Introduction: Schizophrenia, a complex psychotic disorder, is characterized by positive symptoms, like delusions, hallucinations, and paranoia. Few studies have studied the characteristics of patients who are “treatment resistant,” who do not respond to a broad range of antipsychotics. Clozapine is an antipsychotic medication used to treat patients diagnosed with schizophrenia who generally do not respond to other treatments. The relationship between treatment-resistant schizophrenia, clozapine, and brain structure and function warrants more study.

Purpose: There have been few research studies conducted in regards to the effects of clozapine on the brain. Previous literature has suggested that clozapine decreases the function of the basal ganglia. The investigators of this study are researching whether there are differences in brain structure and function of schizophrenia patients that respond to clozapine compared to those who do not respond.

Method: Our aim is to recruit about 40 patients who are stable on clozapine through the Grady Behavioral Health Unit (GBHU). In order to conduct this study, participants attend two separate visits with the researchers. The first visit is conducted at GBHU where the patients are interviewed about demographics, general functioning, cognitive insight, and symptom severity within a week of the conducted interview. The participant’s second visit is conducted at the Center for Advanced Brain Imaging (CABI). Patients are administered cognitive tests that measure components such as working memory, imagination, verbal fluency, and processing speed. After the tests are completed, the patients undergo structural and functional magnetic resonance imaging scans.

Results: This study is currently in progress. The hypothesized MRI results of the research study are that Schizophrenia patients that show more severe symptoms will show aberrant activity in brain functions while on clozapine.

Conclusion: This study will be one of few investigating differences among participants who respond to clozapine and those who do not. We hope this research will further research studies on the psychosis continuum.

Keywords: schizophrenia, MRI, psychosis, clozapine