

Lay Summary

BRAIN UK Ref: 15/010

Investigation of systemic and CNS INflammation in Schizophrenia and during acuTE psychosis: a clinical and post-mortem study (INSiTE)

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1% of the population suffers from schizophrenia suffering immensely distressing symptoms. The illness emerges in early adulthood, leading to a severe impact on society both economically (£12bn a year in UK) and socially. More hospital beds are occupied by persons with schizophrenia than all other psychiatric illnesses combined. Much remains unknown about the mechanisms and causes of schizophrenia. As current treatment remains insufficient, a better understanding of the underlying neurobiology is mandatory to address its challenges adequately. An interaction of genetic and environmental risk factors during pregnancy is assumed to result in brain abnormalities, providing a background of susceptibility for new insults to result in brain malfunctioning.

Recent genetic and other studies suggest abnormalities of the immune system in schizophrenia. Therefore we propose that people with schizophrenia have a more sensitive immune system which is amplified during psychosis (when the patient has distorted contact with reality) seriously impacting the person's life. We will study the immune system in the brains of schizophrenia patients who died with or without psychosis compared to control brains.

This project will generate highly novel information about the contribution of systemic and brain inflammation in schizophrenia and support future diagnostic and therapeutic developments.

Publications:

Date	Publication title
2017	Microglia and Brain Plasticity in Acute Psychosis and Schizophrenia Illness Course: A Meta-Review
2020	Microglial contribution to synaptic uptake in the prefrontal cortex in schizophrenia
2021	Immune environment of the brain in schizophrenia and during the psychotic episode: A human post-mortem study