Infectious agents and immune responses in schizophrenia: A case control study

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Introduction: Exact causal mechanism of schizophrenia is still unknown; however, genetic and environmental factors are implicated in disease aetiology. The aim of the study is to determine the association of infectious agents cytomegalovirus and T. gondii along with immune cytokines IL-2, IL-6 and IFN-γ with schizophrenia. Methods: Ninety subjects participated in the study, 45 were patients diagnosed with schizophrenia, and the other 45 were a healthy control group. Qualitative and quantitative enzyme immunoassays were used for detection of antibodies and quantitation of cytokines respectively in subjects’ sera. Results: Both patients and control groups had similar CMV seroprevalence of 93.3% (42/45). Prevalence of anti T. gondii IgG antibodies were 53.3% and 64.4% among schizophrenic patients and controls respectively. No statistically significant difference was observed between patients and controls (p > 0.05). A significant difference (p<0.005) between mean serum Interleukin-2 levels in patients (14.7 pg/mL) and controls (33.5 pg/mL) was observed. No statistically significant difference (p>0.05) was found between the median IQR serum Interleukin-6 levels of patients (4.3 pg/mL) and controls (3.1 pg/mL). There was a significant difference (p< 0.001) in median IQR serum IFN - γ levels between patients (0.8 pg/mL) and the control group (4.9 pg/mL). Conclusions: No significant differences between schizophrenic patients and healthy controls with regard to previous infections with cytomegalovirus or T. gondii were observed. While significantly higher levels of proinflammatory cytokines IL-6 and IFN - γ among controls than patients might be an indication of weaker than normal immune responses in schizophrenic patients.

KEYWORDS: schizophrenia, cytomegalovirus, toxoplasma, IgG, IgM, IL-6, IFN - γ