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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