Viruses as possible determinant factors for Schizophrenia

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Schizophrenia is been considered as the fourth disease which cause disability by the World Health Organization. It is distributed worldwide, and it has a life prevalence of 1% in general population (1). Some studies have pointed out the existence of genetic susceptibility in where environmental factors would be acting up. These environmental factors which could lead to the development and onset of the illness have not been truly identified yet (2).

In the 80’s with the availability of DNA markers, investigators started to search susceptibility genes to schizophrenia, accepting that one of the principal factors of risk is heredity (3). It has been suggested, that 70% of the chromosomes would have regions involved in that susceptibility, but no study have identified yet in an unambiguous way some gene (1). Studies in monozygotic twins indicate that there is a 40-50% of concordance; this supports the important role of environmental factors in the onset and the course of schizophrenia. (2). Among the environmental factors which are thought to confer major risks for the development of the disease are included the birth season, birth place, pre- and perinatal complications, and viral infections (1), being the last one objective of our discussion.

The hypothesis that schizophrenia is caused by infectious agents was originated in the middle of XIX century, when many investigators associated this disease with some viral epidemics (1). Since then, there have been numerous studies indicating that infectious agents may be one of the principal environmental factors contributing to the etiopathogenesis of schizophrenia. A number of agents including Toxoplasma gondii (8), retroviruses (9) and influenza viruses (10) have been associated to schizophrenia. Nevertheless, a number of recent studies indicate that human herpesviruses are potential viral determinants of schizophrenia.

One crucial issue in the studies on infections and schizophrenia is that there have been few studies of large numbers of individuals undergoing their first episode of schizophrenia. The study of individuals with schizophrenia near the time of the onset of symptoms offers the highest likelihood of defining meaningful associations between exposure to infectious agents and disease etiology. Also, the study of a large sample of cases allows for the analysis of the additive effects of exposure to the identified agents.
For these reasons, our group has designed a matched case-control study to measure the association of seropositivity to potentially neurotropic human herpesviruses in a large group of individuals with first episode of schizophrenia.