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Detection of Sero-Prevalence of Herpes Simplex Virus Among Schizophrenic Patients in Khartoum State-Sudan

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Abstract:-Schizophrenia is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. People with schizophrenia may seem like they have lost touch with reality. Some infections have been reported among schizophrenic patients; herpes simplex is one of them. Ignored symptoms of herpes is likely to be ordinary behavior in our community, so this study aimed to follow a certain population, a schizophrenic individuals, to be checked and assessed for clinical disorder that may lead to mentally one or prevalent. This a case control study conducted to assess sero-prevalence of herpes simplex infection in Khartoum state, high frequency of antibody against HSV found in both case and control groups, they were 85.7% and 92.9% respectively . Non- specific IgG kit was used, so it recommended that a target sub-type should be assessed in coming future to indicate which type of herpes simplex more spread and it may be indicator.

Keywords:-Schizophrenia. Herpes Simplex and Non-Specific.

I. INTRODUCTION

Herpes simplex virus (HSV) is an enveloped double-stranded DNA virus, belonging to the family of Herpesviridae transmitted across mucosal membranes and non-intact skin, which migrate to nerve tissues, where they persist in a latent state[(1)]. Infection with the herpes simplex virus can be due to either herpes simplex virus type 1 or herpes simplex virus type 2 [(2)]. HSV type 1 predominates in orofacial lesions, and it is typically found in the trigeminal ganglia, whereas HSV type 2 is most commonly found in the lumbosacral ganglia[1]. In some developed countries type 1 has considered the prominent causative agent in genital lesions. Changes in sexual behaviors of young adults may partly explain its higher incidence[(3-4)].Both oral herpes infections and genital herpes infections are asymptomatic but can cause mild symptoms or ulcers at where siteinfected[(2)].

HSV-1 is a highly infectious virus; it is common and endemic around the globe. HSV-1 is acquired during childhood and it considered that has lifelong infection, high rate of its spread was found in Africa with 87% and lower infection among American with 40-50%. Oral herpes infection is mostly asymptomatic, and the majority of people with HSV-1 infection, and can be accidentally detected. Symptoms of oral herpes can be presented as ulcer and painful blisters around the mouth present after sensing tingling, itching or burning sensation. The recurrence of infection varies from person to person[2]. Also HSV-1 can cause gentile herpes, which can be asymptomatic or with mild symptoms that could be missed. If symptoms present genital or anal ulcer would be signs [(2)].

HSV-2 Herpes simplex virus type 2 (HSV-2) infections is considered sexually transmitted, causing genital herpes. Laboratory detection of HSV-2 by measuring of Ig G antibodies against HSV-2[(5)]. Genital herpes caused by HSV-2 is a global issue, highly finding is in sub-Saharan African, then Americans. It was increased with age, though the high incidence of new infection among adolescents. Symptoms include genital ulcer, fever, body aches and enlargement of lymph nodes. During sexual contact, contact with infected skin or fluids with someone infected HSV-2 can be transmitted as well. Rarely during delivery, a mother can infect her child with HSV-2. [(2)].

Schizophrenia is a pervasive neuropsychiatric disorder of unknown etiology [(8)]. Cognitive deficits are a major feature of schizophrenia. As a group, individuals with schizophrenia perform more poorly on a broad range of cognitive tasks than do age-matched control subjects from the general population [(9)]. The degree of cognitive dysfunction varies among affected individuals and is generally persistent during the course of the schizophrenia illness [(10)]. The extent of the cognitive deficits has little correlation with the severity of characteristic schizophrenia symptoms such as hallucinations and delusions[(11)]. It is a chronic and disabling illness, with the majority of patients experiencing multiple relapses during the course of the illness[(12)]. Relapse, characterized by acute psychotic exacerbation, may have serious implications, as there is a risk of patients harming themselves or others, of jeopardizing personal relationships, education or employment status[(13)], and of further stigmatization of the illness. Additionally, relapse may carry a biological risk.[(14-15)].

II. MATERIAL AND METHOD

In this case control study professionally diagnosed patients with schizophrenia were targeted as case group, they were attended to Eltijani Elmahi neuro and psychological hospital-Omdurman, where formal consent from the hospital administration and patients guardians was obtained to involve that group of psychotic patients in this study, 42 patients were recruited for blood withdrawn under hygienic condition, whole blood collected without additive anticoagulant for consequence serum obtaining, same number of un mentally ill subjects were involved in blood collection as control group. Serum later screened for IgG anti-herpes antibody by means of enzyme linked immunoassay (ELISA), via BTS350 analyzer and ELISA kit Euroimmun trade mark, with regular sandwich ELISA protocol, laboratory analysis performed at Elgaily Khalid Musa medical laboratory-Omdurman.

III. RESULT

In this study 42 schizophrenic subjects were screened for herpes simplex virus, they were 33 males and 9 females, their age mean±SD was 30.6±7.20 years, a control group contained also 33 males and 9 females with mean±SD 31.1±9.4 years for age as in table 1.

Status	Age Mean±SD	Frequency	Gender	%
Case	**30.6±7.2**	**42**	**33 males** **9 females**	**78.6%** **21.4%**
Control	**31.1±9.4**	**42**	**33 males** **9 females**	**78.6%** **21.4%**

Table1: Case and Control Group Criteria.

All 82 subjects were tested for anti-herpes antibody lgG, the case group showed positive results among 36 subjects represents 85.7%, while negative results were obtained among 6 (13.3%) subjects and control group has 39 individuals (92.9%) with positive results and 3(6.1%) negative result. And high positive results were obtained among control group than case group and vice versa for negative results, as in figure 1.

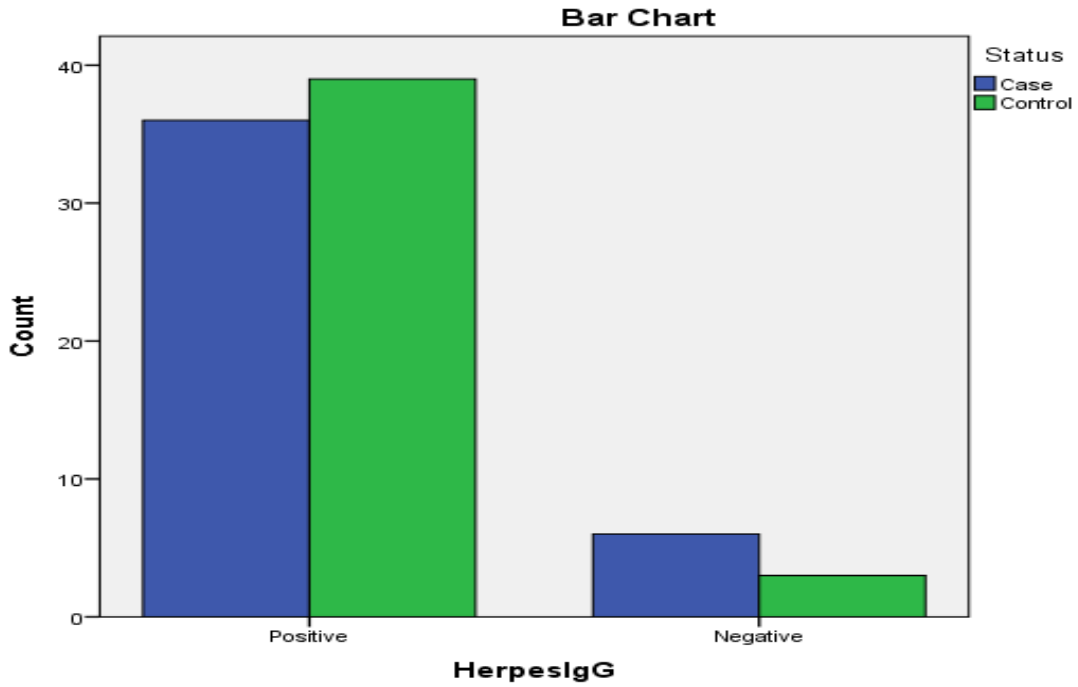

Figure 1: Positive and Negative Results Among Case and Control Groups.

Considering positive results among gender distribution, males presented with high frequency than females for case and control as well, as in table 3.

Status	Male 33		Female 9	
	frequency	%	frequency	%
Case				
Positive	**29**	**87.9%**	**7**	**77.8%**
negative	**4**	**12.1%**	**2**	**22.2%**
Control				
Positive	**30**	**90.9%**	**9**	**100%**
negative	**3**	**9.1%**	**0**	

Table 2: Distribution of Herpes Screening Results According to Gender

IV. DISCUSSION

In this study an IgG antibody against herpes simplex has been screened among well-diagnosed schizophrenic subjects and mentally healthy subjects as well. This in agreement with several studies did find the indicators for viral existence in blood of schizophrenic patients, as studies conducted at the same manner and searched about many viruses included herpes, schizophrenic subjects showed high prevalence comparing with the control group which assessed too[(15-16)], and this point differs from our finding, as this study has high positive indicator for herpes among healthy subjects which considered control group, indicating no significant relationship between the infection with HSV and the mentaldisorder and this agrees with finding of another study focused on herpes simplex to be assessed among schizophrenic patients[(17)]. In this high frequency of the antibody foundamong men more than women, this differs from the Brazilian study, which found no sex difference of HSV infection[(18)].

V. CONCLUSION

Prevalence of antibodies against HSV among schizophrenic and mentally health individual indicating that the virus has no association with mental health status in this study, and yet symptoms of HSV infection may not presented or ignored among healthy individuals. This may be explained by chronic infections or an altered immune status.

VI. RECOMMENDATION

It is needed to be used a development of type-specific serologic assays for herpes simplex virus (HSV) infection enables accurate surveys of HSV-1 and HSV-2, and studies should not focus on one single pathogen and assess the impact of different infectious agents.

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