HIV Seropositivity among Patients Presenting with Herpes Zoster Infection

Abubaker Omer Ali Abdalla1*, Isam Mohamed Elkhidir2 and Abdelgadir Ali Bashir3

1Educational Development Center, Faculty of Medicine, University of Khartoum, Khartoum, Sudan
2Department of Microbiology, Faculty of Medicine, University of Khartoum, Khartoum, Sudan
3Department of Community Medicine, Faculty of Medicine, University of Khartoum, Khartoum, Sudan

Abstract

Background: Skin manifestations are usually the first presentation in HIV infection. Most common of these manifestations is herpes zoster. This study was carried out to determine HIV seroprevalence in patients with herpes zoster and to identify factors that may affect its prevalence.

Methods: 40 patients were included in the study after clinical confirmation of herpes zoster. Every patient was interviewed privately to assess demographic, social and medical information. Data were obtained with high confidentiality. Blood samples were collected and tested for presence of antibodies against HIV.Khartoum.

Results: Out of the 40 patients screened, 6 (15%) were found HIV seropositive, with significant association in patients with previous herpes zoster attack, history of traveling to endemic areas and sexually transmitted infections.

Conclusion: We found high prevalence of HIV in patients with herpes zoster. These results may indicate the need for early screening of herpes zoster patients to facilitate better management of HIV infection.

Keywords: HIV; Seropositivity; Herpes zoster; Khartoum

Introduction

Skin manifestations are usually the first presentation in human immunodeficiency virus (HIV) infection, these manifestation may be the only sign of HIV infection in many cases [1]. Herpes zoster is the most common skin lesion in HIV patients. It results from activation of latent varicella zoster virus in dorsal root or cranial nerve ganglia after the primary infection of chickenpox. Herpes zoster presents as localized belt-like pain followed by vesicular skin rash in the affected area [2]. It is associated with depression of immunity, most importantly due HIV infection [3].

HIV infection is a global health problem that affects 33.3 million of people with 2.6 million new infections and 1.8 million deaths due to AIDS annually [4]. HIV infection has great impact on countries where it decreases life expectancy of individuals and survival rate of children. In addition it has negative economic impact that leads to exhaustion of health care systems [5]. HIV control and management is a major challenge and one of the Millennium Developmental Goals that requires multidisciplinary involvement.

We carried out this study to determine HIV seroprevalence in patients with herpes zoster infection and to identify the factor that may affect its prevalence. Results from this study may help improve screening programs for early detection and efficient control of HIV infection that leads to a decrease in its related morbidity and mortality.

Materials and Methods

This study was carried out at Khartoum Dermatology Hospital in Khartoum city.

It is the largest dermatology hospital in Sudan, and attending physicians and specialists are available at the hospital.

This is a cross-sectional analytical hospital based study to determine HIV seropositivity among patients with herpes zoster presented at the clinic between March and September 2012. Inclusion criteria included all Patients who came to the outpatient clinic complaining of herpes zoster infection during the study period. Those who refused to participate were excluded from the study. Data were collected using a specially designed pretested close-ended questionnaire. Every patient was interviewed alone by the same trained personnel after obtaining consent to participate in the study. The questionnaire included questions about the demographic and social variables, in addition to questions on past medical history. Clinical examination was done as part of the routine examination at the clinic by a senior medical member, to confirm the diagnosis and determine the distribution of the rash. Blood samples were collected at the lab using Dried Blood Spot (DBS) technique [6] and were tested for presence of antibodies against HIV using ELISA technique [7] and confirmed by Western blot [8]. Data were collected and recorded with high level of confidentiality. Ethical approval for the study was obtained from the Hospital Research and Ethics Committee.

All collected data were analyzed using Statistical Package for Social Science (SPSS) version19 and Excel programs.

Descriptive frequencies were used to describe the distribution of variables while Chi-square and Fisher's exact tests were used to determine the significance of association with 95% confidence interval (P value<0.05).

Results

A total of 40 patients were screened and 6 (15%) were seropositive

*Corresponding author: Abubaker Omer Ali Abdalla, Educational Development Centre, Faculty of Medicine, University of Khartoum, Seifeldin st., Mamora, Khartoum, Sudan, Tel: +249999000811; E-mail: abubaker.omer@gmail.com

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for HIV. Of all HIV positive patients, 5 (83%) were in the age group 25-45 years and most of them were females residing in urban areas (83%). All of them were sexually active and none of them used barrier methods during intercourse. 5 patients (83%) had history of travelling to endemic areas of HIV and only 2 patients (33%) had history of previous herpes zoster attack. Most patients had previous documented sexually transmitted diseases (67%). The head was the most affected area (67%) and only 2 cases (33%) had multi dermatomal involvement (Tables 1-3).

| Variables                                      | No. of positives | Percent |
|------------------------------------------------|------------------|---------|
| Age                                            |                  |         |
| less than 25 years                             | 0                | 0%      |
| 25 - 45 years                                  | 5                | 83%     |
| more than 45 years                             | 1                | 17%     |
| Gender                                         |                  |         |
| Male                                           | 1                | 17%     |
| Female                                         | 5                | 83%     |
| Current Residency                              |                  |         |
| outside Khartoum                               | 1                | 17%     |
| Marital Status                                 |                  |         |
| Single                                         | 0                | 0%      |
| Married                                        | 6                | 100%    |
| History of Travel to Endemic Area              |                  |         |
| Yes                                            | 5                | 83%     |
| No                                             | 1                | 17%     |
| Previous Attack                                |                  |         |
| Yes                                            | 2                | 33%     |
| No                                             | 4                | 67%     |
| Previous Sexually Transmitted Infection        |                  |         |
| Yes                                            | 4                | 67%     |
| No                                             | 2                | 33%     |
| Previous Needle Injections                     |                  |         |
| Yes                                            | 1                | 17%     |
| No                                             | 5                | 83%     |
| Extend Of Dermatomal Involvement               |                  |         |
| Single                                         | 4                | 67%     |
| Multiple                                       | 2                | 33%     |

Table 4: Frequency table showing the Socio-demographic characteristics of 6 HIV seropositive patients at Khartoum Dermatology Hospital, 2012.

Discussion

This study determined the prevalence and risk factors for HIV infection in patients with herpes zoster infection in a resource-limited setting in Sudan. The HIV prevalence was 15%, this is in agreement with the prevalence in Nigeria [9], most likely attributed to the high prevalence of HIV in Africa. In contrast, studies conducted in India reported lower prevalence rates [10,11]. Similar to other studies [11,12] most affected patients were in the age group 25-45 years, representing the most productive and sexually active individuals.

We found significant association between HIV seropositivity and patient with history of travelling to endemic areas (P=0.029), previous episode of herpes zoster infection (P=0.019), documented previous sexually transmitted infections (P=0.039) and multi-dermatomal involvement (P=0.019) as in different studies [10-12].
This study however found no statistically significant association between HIV infection and patients with multiple sexual partners ($P=0.055$). This may be due to religious and social barriers that prevent giving accurate information regarding sexual activities. In Sudan any sexual activity outside marriage is considered a crime punishable by law.

**Conclusion**

This study showed a high HIV prevalence in herpes zoster patients. Patients with herpes zoster should be counseled about risk factors for HIV infection and when appropriate, offered HIV screening test. This would facilitate better management of HIV infection that leads to a decrease in its related morbidity and improves the quality of life of HIV-infected patients.

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