

# HIV INFECTION IN HERPES ZOSTER

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## ABSTRACT

The interaction of Herpes zoster and Human Immunodeficiency Virus (HIV) was evaluated in 120 cases of herpes zoster admitted to our hospital and in 157 HIV positive cases detected in the hospital during the same period. The incidence of HIV seropositivity was 22.5 per cent in cases of herpes zoster without AIDS defining disease conditions. Whereas the incidence of Herpes zoster in cases detected to be HIV positive in the same period was 17.2 per cent. A large number of herpes zoster cases found to be HIV positive were in the sexually active age group viz. 21-30 years. Thoracic dermatomal segments were most frequently involved. None of the cases had severe complications or showed evidence of progression to symptomatic HIV disease.

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KEYWORDS : Herpes zoster; HIV infection.

## Introduction

**H**erpes zoster occurs more frequently in older persons and those with cellular immunodeficiency from various causes [1]. Herpes zoster occurs due to reactivation of dormant varicella-zoster virus when immunity is decreased from various causes. The association of Herpes zoster and Human Immunodeficiency Virus (HIV) has been confirmed in many studies, however the interaction between HIV infection and Herpes zoster is still not clear [2].

Herpes zoster is noted to be associated with Acquired Immuno-Deficiency Syndrome (AIDS) [3], causing severe disease, involving multiple dermatomes, dissemination [4] and systemic involvement [5,6]. Furthermore the incidence of Herpes zoster is observed to be higher in AIDS cases and in seropositive HIV cases [2,7] in whom recurrent attacks are common [8,9] and lesions are more persistent with unusual morphologies viz. verrucous and hyperkeratotic lesions [10,11].

Herpes zoster was found to precede AIDS in high risk groups [2,12] and when occurring in asymptomatic HIV cases, was believed to be a bad prognostic marker as far as progression to symptomatic HIV disease is concerned [2,13]. It typically precedes other symptoms such as thrush and oral leucoplakia by an average of 1.5 years which in turn precedes other AIDS defining opportunistic infections by 2-3 years

[14]. This association however, was not observed in some studies [2,8,15]. The relationship of Herpes zoster to duration of HIV infection is not clear, some studies observing it to be an early manifestation of the HIV disease [2,13,16], others noting that it manifests late [17] and paradoxically this may be a marker for improved prognosis [14].

We have studied the incidence of HIV positivity in cases of herpes zoster with special reference to morphology and extent of lesions and time taken for healing of lesions.

## Material and Methods

One hundred and twenty patients of herpes zoster admitted over a period of three years were included in this study. Their ages varied from 18 to 75 years, the majority of the cases were in the age group 21-30 years. The diagnosis of herpes zoster was primarily clinical and relevant investigations when indicated, were carried out to exclude immunodeficiency state.

All cases were tested for HIV by ELISA method and if found positive were confirmed by Western Blot method. All patients were treated symptomatically with non steroidal anti inflammatory drugs (NSAID), supportive therapy and topical soothing lotions and antibiotics. Few cases viz. patients more than fifty years of age, with fifth and seventh cranial nerve involvement and cases with severe and extensive cutaneous involvement were treated with oral acyclovir and some with systemic corticosteroids as well. The duration of time taken for clinical recovery i.e. crusting and falling off of crusts was noted and patients were observed for development of late sequelae.

## Results

Twenty seven (22.5%) of the one hundred and twenty cases of

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herpes zoster in our study were found to be HIV positive. The age group of patients studied varied from 18 to 75 years as shown in Table 1. Eighteen (66.7%) of the HIV positive and fifty seven (61.3%) of HIV negative cases were in the age group 21-30 years. This was the only attack of herpes zoster occurring in all cases. None of the cases were on immunosuppressive drugs or afflicted with immunocompromising diseases.

TABLE 1  
Age wise distribution of Herpes zoster cases in HIV sero-negative and HIV sero-positive cases

Age in years HIV	No. of cases HIV negative	No. of cases HIV positive	Total No. of cases
11 to 20	09	—	09
21 to 30	57	18	75
31 to 40	16	08	24
41 to 50	05	01	06
51 to 60	03	—	03
61 to 70	02	—	02
71 to 80	01	—	01
Total	93	27	120

The HIV status of all but one case was not known prior to development of herpes zoster and this was an incidental observation.

The dermatomes involved in this study group is shown in Table 2. The thoracic dermatomes were the most frequently involved i.e. in forty six (49.4%) among HIV negative cases and fifteen (55.6%) among HIV positive cases. There was more than one dermatome involved in thirty five (37.6%) of HIV negative patients and in nineteen (70.4%) of HIV positive patients. These dermatomes were adjacent to each other and not distant dermal segments.

The time taken for complete regression of skin lesions was 7 to 31 days (average 14.8 days) in HIV negative patients and between 8 to 30 days (average 18.5 days) in HIV positive cases.

Seventeen (62.9%) of the twenty seven HIV positive patients gave a history of extra marital sexual exposure, sixteen of these to commercial sex workers (CSW) and one to an amateur. All these cases gave history of peno-vaginal sex, condoms not used by any of these subjects. Two cases (7.4%) gave history of blood transfusions in the past, whereas in eight cases (29.6%) no definite history of any risk factor was elicitable. In two of these HIV positive cases there was a concomitant active sexually transmitted disease

(STD) present and in one case active scabies lesions were seen.

The total number of cases found positive for HIV on screening of high risk and other groups (STD and tuberculosis cases, blood donors, hepatitis B antigen positive cases etc.) in our hospital was 157 during the same period. Twenty seven (17.2%) of these cases had Herpes zoster.

Discussion

We have found a high percentage (22.5%) of apparently normal individuals with herpes zoster to be sero positive for HIV. This high percentage may be due to increased promiscuity in this large metropolitan city where the incidence of HIV infection is high among CSWs.

Our study has shown that the incidence of herpes zoster was highest in the age group 21-30 years (66.7% in HIV positive and 61.3% in HIV negative patients). Some studies show a rising incidence with increasing age [2], others show age incidence closer to our study [18]. It has been found that the incidence of HIV positivity in cases of tuberculosis in the absence of symptomatic HIV infection is 3-63 per cent [19,20] and it is suggested that all cases of tuberculosis be tested for HIV. This coincidence could also be extrapolated in herpes zoster and all cases of herpes zoster be screened for HIV.

Melbye et al reported a progression rate to AIDS of 34.8 per cent after herpes zoster [17]. This has not been observed in our study as no case progressed to AIDS among the study group, most cases being followed up for three years. This is in keeping with many recent studies showing that herpes zoster is not an independent predictor of AIDS [15] as are other clinical markers such as oral candidiasis [2] and constitutional symptoms [2,15] that are associated with more rapid progression to AIDS. Hence progression to AIDS is not associated with herpes zoster [9].

Reactivation of varicella-zoster virus is very common in adults with HIV infection [14]. Although not

TABLE 2  
Dermatomes involved in Herpes zoster cases in HIV sero-positive and HIV sero negative patients

Dermatomes	No of cases								Total (A + B)
	No. of segments - HIV negative				No. of segments - HIV positive				
	One	Two	Three	Total(A)	One	Two	Three	Total(B)	
Cranial	07	—	03	10	02	—	—	02	12
Cervical	14	05	01	20	01	05	—	06	26
Thoracic	28	18	—	46	05	10	—	15	61
Lumbar	09	04	01	14	—	01	01	02	16
Multiple (Adjacent Seg.)	—	03	—	03	—	02	—	02	05
Total	58	30	05	93	08	18	01	27	120

life threatening it can be extremely painful. No particular dermatomes are involved but ophthalmic zoster may be more frequent in hospitalised cases. Extensive necrosis can develop and keloidal scarring occurs in black patients [8]. These findings have not been observed in our present study. Generalised disseminated infection was not seen in our present study which is in keeping with other studies [8].

Higher immunity in our patients is perhaps responsible for the small number of complicated herpes zoster infections. Good diet and better living environment are probably factors responsible for delayed progression to AIDS in this study group.

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