

Original Research Article

A clinico-epidemiological study of herpes genitalis in a tertiary care institution in Northern Kerala

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ABSTRACT

Background: Herpes genitalis, has assumed greater importance, being the most common genital ulcer disease nowadays. Hence we aimed to study and analyse the epidemiology of herpes genitalis among STI clinic attendees of our institution during the three year study period.

Methods: Previous case records of those who attended the STI clinic of our tertiary care institution with herpes genitalis from 2009 January to 2011 December were reviewed, data collected and studied.

Results: 87 of the 530 patients (16.4%) who attended our STI clinic during the three year study period were diagnosed to have herpes genitalis. Females (57) outnumbered males (30) and majority of the affected belonged to the 20-39 age group (58/87, 66.7%). The common clinical types noted were primary herpes genitalis in females (38/57, 66.7%) and recurrent herpes genitalis (15/30, 50%) in males.

Conclusions: The facts that all female patients except one were married, only 7.7 % of female patients had either EMC or PMC and many had developed symptoms within one year of their marriage, indicated that marital contact is the commonest cause of herpes genitalis in females in this locality. Significant percentage of primary herpes occurring in pregnant females points to the necessity of pre-marital counselling regarding various STIs and their respective modes of transmission. The study also indicated that males tend to get recurrences for a more prolonged period (2 months to 30 years), compared to females (2 months to 5 years).

Keywords: Herpes genitalis, Epidemiology, Sexually transmitted infection

INTRODUCTION

History of sexually transmitted infections (STIs) which dates back to the history of mankind itself, has witnessed in the latter half of past century, a dramatic decline in bacterial STIs, with the introduction of penicillin and other antibiotics.¹ This decrease is not reflected in viral STIs. On the contrary they are on the rise.²

There has been a shift in the most common genital ulcer disease from syphilis and chancroid in early 90s to herpes genitalis in recent years which is caused by herpes

simplex virus (HSV), mainly HSV 2 and occasionally HSV 1.³

The genital ulcer disease has assumed added significance with the emergence of human immunodeficiency virus (HIV) epidemic.³ The two most important factors determining the spread of HIV are coexisting genital ulcers and high HIV load in plasma.⁴

Simultaneous infection with HSV and HIV accelerates progression of HIV infection to fatal AIDS by activating T lymphocytes as HIV multiplies rapidly in activated T cells. Co-existing HIV infection in turn increases HSV

shedding and impairs response to treatment leading to prolonged duration of herpes genitalis in the affected.³ Thus control of HSV infection has an important role to play in preventing the spread of HIV.

Understanding the epidemiology of an infection is important in designing effective control measures. Here we have made an earnest effort to study and analyse the epidemiology of herpes genitalis among STI clinic attendees of our institution during the three year study period.

METHODS

This is a retrospective data analysis. Case records of patients who were diagnosed with herpes genitalis among the STI clinic attendees of our tertiary care centre from January 2009 to December 2011 were reviewed.

In our institution, dark ground microscopic examination, Tzanck smear, gram staining and tissue smear analysis were performed in each genital ulcer disease patient. Biopsy was performed in doubtful cases only. All patients were screened for HIV and HBs Ag infections and venereal disease research laboratory (VDRL) titre was determined to detect co-existing syphilis. Serology for HSV 2 and HSV 1 were not performed as most of the patients could not afford these tests.

A diagnosis of herpes genitalis was made whenever a patient presented with typical clinical features, i.e., multiple vesicles over genitalia that ruptured to form erosions or ulcers with polycyclic borders. Response to empirical treatment with acyclovir was taken as evidence of herpes genitalis, in patients presenting with ulcerative STIs with clinical features and laboratory investigations (including dark ground microscopy, Tzanck smear, gram staining and tissue smear) not consistent with the diagnosis of any of the common genital ulcer disease (chancere, donovanosis, chancroid and herpes genitalis) and who were not willing to undergo biopsy.

Herpes simplex patients without history of similar episodes in the past, who had constitutional symptoms or tender inguinal lymphadenopathy or severe local manifestations, were diagnosed as having primary herpes genitalis. If a patient without past history of similar illness presented without constitutional symptoms or tender inguinal lymphadenopathy or severe local manifestations, he or she was diagnosed to have non-primary first episode herpes genitalis. Those who had similar illness in the past were diagnosed as recurrent herpes genitalis.

Exclusion criteria

Patients with genital ulcers showing evidence of chancere, chancroid, lymphogranuloma venerum or donovanosis clinically or after analysis of tissue smear or gram stain

and without any clinical features or Tzanck smear report to suggest herpes genitalis were excluded from the study.

A pre-set proforma was used to collect data from previous case records, regarding age, sex, sexual behaviour, marital status, history of STIs in the self or in the partner. Socioeconomic status of individual study subject was determined on the basis of Kuppuswami's socioeconomic status scale revised for the year 2010.^{5,6} Clinical features and investigation details of individual patient was carefully documented and study subjects were classified into primary, non-primary first episode and recurrent herpes genitalis. Treatment response and co-existing STIs were carefully noted. Clinical and laboratory evaluation details of sexual contacts and treatment given to them were also collected from case records. The data was analysed.

RESULTS

During the three year study period 87 of the 530 patients who attended the outpatient Department of our tertiary care institution with sexually transmitted infections were diagnosed to have herpes genitalis (16.4%). This constituted 97.8% (87/89) of the total genital ulcer diseases during the same interval. A clear female predilection (57 females and 30 males, male to female ratio = 1:1.9) was observed in the study group (Table 1). Age of the affected ranged from 18 to 90 years with majority belonging to the 20-39 age groups (66.7%). All those affected with the disease in the below 20 age group were females.

Table 1: Herpes genitalis cases (n=87).

	Female	Male
Number of cases	57	30
Married	56 (98.2%)	21 (70%)
Heterosexuals	57 (100%)	21 (70%)
Homosexuals	0	4 (13.3%)
Bisexuals	0	4 (13.3%)
EMC/PMC	4 (7.7 %)	25(83.3 %)
Co-existing HIV infection	6 (10.5%)	4(13.3%)
Period for which recurrences occur	2 months to 5 years	2 months to 30 years
Upper socioeconomic class	0	1(3.3%)
Lower middle socioeconomic class	19 (33.3%)	14 (46.7%)
Upper lower socioeconomic class	38 (66.7%)	15 (50%)

EMC- Extramarital contact, PMC- Premarital contact.

All the affected females were heterosexuals and all except one were married. Four females (7.7%) gave

history of extra marital contact (EMC) or pre-marital contact (PMC). They gave history of unprotected contacts with acquaintances. None had multiple partners. The remaining 53 denied EMC/PMC. Twelve of the forty five female patients (26.7%) who presented with the first clinical episode of herpes genitalis (both primary and non-primary first episode) manifested the disease within the first one year of their marriage. Twelve of the fifty seven (21.1%) females were pregnant (three each developed the disease in the 1st and 3rd trimester respectively and six in the second trimester). Three of them had recurrent herpes genitalis and one patient gave history of herpes labialis in the past.

Among males four were homosexuals, four bisexuals and twenty one were heterosexuals. One unmarried male denied any previous sexual experience. Among males two were divorced and seven were unmarried.

25/30 males (83.3%) gave history of EMC/ PMC and only one of them used barrier contraception. Two of the males (one of them homosexual) had multiple sex partners. Four had contact with commercial sex workers.

Most of the affected females belonged to the upper lower socio economic strata (38/57, 66.7%) and the rest were of lower middle class. Whereas in males, one patient (3.3%) belonged to the upper, 14 to lower middle (46.7%) and 15 (50%) to upper lower socioeconomic strata.

49/87 (56.3%) were clinically diagnosed as primary, 27/87 (31%) were diagnosed as recurrent and the rest (11/87, 12.6%) as non-primary first episode herpes genitalis. In females, majority (66.7%) had clinical features consistent with the diagnosis of primary herpes whereas in males recurrent herpes genitalis predominated (50%). Duration of recurrent herpes genitalis varied from 2 months to 5 years in females. Duration of the same ranged in males from 2 months to 30 years.

The most common site of involvement in females were labia majora (53/57, 93%). In males majority had lesions on glans penis (14/30, 46.7%). Tzanck smear examination in female patients revealed multinucleated giant cells (MNG) in 15/38 (39.5%) primary, 4/7 (57.1%) non-primary first episode and 3/12 (25%) recurrent herpes genitalis cases.

Males revealed MNG in 3/11 (27.3%) primary and 5/15 (33.3%) recurrent herpes genitalis cases.

Commonest co-existing STI noted in the study population was HIV infection (in four males and six females). In all ten, the diagnosis of HIV infection preceded the diagnosis of herpes genitalis. Four of them were suffering from stage 2 and six from stage 4 HIV diseases. In 7/10 herpes genitalis appeared for the first time between 3 months and 18 months after the introduction of highly active anti-retroviral therapy (HAART). In one patient who manifested primary herpes before starting HAART,

introduction of HAART 6 months later precipitated frequent recurrences necessitating suppressive treatment.

There were two cases of syphilis, both of them HIV positive. One of them had syphilis of unknown duration and primary herpes while the other had chancre (primary syphilis) and recurrent herpes genitalis. None among the study group was diagnosed with HBsAg infection.

Partner evaluation was possible in only 17/57 (29.8%) females. 9/17 spouses of the affected females had either EMC/ PMC (all unprotected) and three of them engaged in homosexual practices as well. Contacts of the four females who had EMC/PMC could not be assessed as the patients refused to divulge their details.

Partner evaluation was possible in only one of the thirty males. This was the wife of one of the male patients and she was brought to us as she manifested primary herpes genitalis. She denied any EMC or PMC while her husband gave history of both.

Except for those already diagnosed, there were no new cases of HIV, HBsAg and syphilis diagnosed as part of patient or partner evaluation.

DISCUSSION

In concordance with the previous reports, the most common STI producing genital ulcer in our patients was herpes genitalis.³ The female predilection observed in our study subjects was as reported in another study.⁷ Females are known to be at high risk for contracting the infection, as greater mucosal area is exposed during sexual contact in them. More severe clinical manifestations in females during active infection prevent them from taking part in sexual activities at the peak of viral shedding; reducing the rate of transmission to their sexual partners.³ Moreover those with severe disease usually seek aid in a tertiary care institution. All these might have contributed to the female preponderance noted in this study.

Similar to previous reports, most of the affected belonged to the sexually active age group (20-39).³ Earlier age of disease onset documented in females could be explained by the early sexual debut among females, probably due to earlier marriage, in the studied population. This is supported by the fact that unlike males, most of the female patients were married.

More than 90% females had only their spouse as the source of infection whereas more than 80% males had EMC/ PMC/ homosexual contacts. This was consistent with the findings of previous Indian studies and reflects the social and cultural factors granting more sexual freedom to males.^{8,9} The fact that all female patients except one were married, only 7.7 % of female patients had either EMC or PMC and many had developed symptoms within one year of their marriage, indicates that marital contact is the commonest cause of herpes

genitalis in females in this locality. Contrary to this, 83.3 % of males had history of either EMC or PMC, which may be their major root of acquisition.

Herpes genitalis in one male patient who had no prior sexual experience could be explained as genital herpes induced by HSV-1. HSV-1 is commonly associated with herpes labialis, but can occasionally produce genital infection as well.^{3,7,10}

28 out of the 29 (96.6%) engaged in EMC/ PMC did not use barrier protection. This lack of awareness of safe sex practices or refusal to adopt them even in this era of HIV infection was a disturbing finding. This underscores the need to incorporate proper sex education with special reference to safe sex practices in the basic education programme itself.

The scarcity of patients in the upper and upper middle socioeconomic classes and the abundance in lower middle and upper lower classes, in both sexes with only minor differences, indicates that being lower in socioeconomic class is an important predisposing factor for acquiring sexually transmitted infections. This may be due to lower awareness about safe sex practices in the lower socioeconomic classes.

Another significant observation was the fact that nearly 20% of the affected females were pregnant. The absence of similar episodes in the past in most of those who manifested the disease in pregnancy points to the lack of protective antibodies, placing them at increased risk for transmitting the infection to the foetus. This clearly highlights the importance of pre-marital counselling with proper sex education and creating awareness regarding various STIs. The need to abstain from contact at the time of active STIs need to be impressed upon the individuals. With the added risk of herpes induced teratogenicity in pregnancy, we need to consider options like suppressive treatment in males with history of herpes genitalis who are planning to start family, especially in view of the fact that most married females started having symptoms within one year of marriage.

The study indicates that males tend to get recurrences for a more prolonged period (2 months to 30 years), compared to females (2 months to 5 years). High percentage of females presenting with primary and males presenting with recurrent herpes genitalis during the study period may be due to this prolonged period for males during which recurrences can occur. It could also be explained by the characteristics of the population seeking treatment in a tertiary referral unit. Those with severe manifestations or disease refractory to treatment usually attend a higher centre. Primary herpes in females often manifest severe symptoms, whereas in males most initial infections are either subclinical or mild.

Demonstration of MNG in only 34.5% (30/87) of the study population could be attributed to the fact that most

of our patients were referred cases that had received treatment elsewhere and came to us when there was lack of response. Often there was a delay between the onset of the disease and the time of presentation to our centre.

Co-existence of herpes genitalis, syphilis and HIV in two of our patients points to the higher chance of spread of all these infections along with the risk of developing florid manifestations in each of them. 70% of patients with coexisting HIV infection and herpes genitalis developing the latter for the first time after initiating HAART is a significant finding. Five of these seven developed primary herpes within nine months of onset of HAART, suggestive of herpes occurring as an immune reconstitution inflammatory syndrome (IRIS) as observed in another study.³

The frequent recurrences (two patients) and inadequate treatment response (one patient) respectively observed in certain HIV positive study subjects have been reported earlier.² A slow treatment response documented in one of the pregnant females could be attributed to the depressed immunity associated with pregnancy.

Our inability to evaluate and treat the partners of most cases highlights the inherent social inhibition which exists about STIs and also points towards the need to increase the efficacy of the existing contact tracing.

The observations in this study do not reflect the status of the infection in the general population, as it was conducted in a referral unit. Lack of serological analysis in individual case might have resulted in misclassification of genital herpes (as primary, non-primary first episode and recurrent disease) in at least some cases. Despite these, we were able to have an overall view on the demography and the disease manifestations of this common STI among patients seeking treatment in a tertiary referral centre which caters to the needs of northern Kerala.

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