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CONCURRENT MULTIPLE STIS IN HIV INFECTED PATIENTS

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ABSTRACT

Background: HIV and other sexually transmitted infections (STIs) synergize to aggravate the associated morbidity of each other in the human body. Various studies have established the epidemiologic synergy between STIs and HIV. Presence of STIs increases the risk of either the acquisition or transmission of HIV by 3-5 times (especially in ulcerative diseases & diseases associated with discharges).[1] However there are few studies on individuals with more than one concurrent STI. The aim of our study is to determine the number of HIV positive patients with more than one concurrent STI. ***Materials and Methods:*** The present study comprised of 100 consecutive cases of HIV positive patients with STIs attending the outpatient department of DVL, Gandhi Hospital, Secunderabad, from January 2015 to June 2016. Detailed history, demographical data, and clinical features were recorded. All the patients were screened for common STIs. ***Results:*** Of the 100 patients included in the study, 72% (72) were males and 28% (28) were females. Maximum number of patients were in the age group 27-36 years (43%). Out of 100 patients 18(18%) had concurrent multiple STIs. Of these 18 patients with concurrent multiple STIs, 22.2% had genital herpes and genital candidiasis. Other multiple STIs were genital herpes and genital warts (11.1%), genital candidiasis and molluscumcontagiosum (11.1%),genital herpes and syphilis (11.1%), genital warts and syphilis (11.1%), genital candidiasis and syphilis (11.1%), hepatitis-B with genital warts (5.5%), hepatitis-B with genital candidiasis (5.5%), hepatitis-B with genital herpes (5.5%) and genital herpes with gonorrhoea (5.5%). ***Conclusion*** The pattern of multiple STI HIV co-infection and the clinical severity of such co-infection may serve as an indicator of the type of host–pathogen interaction determining the outcome of infection. Such multiple STI associations may not simply reflect an epidemiological association based on prevalent strain/agents in a particular setting. It may be an indicator to an evolutionary principle of parasite interactions using the susceptible host as a milieu.

KEYWORDS: Concurrent STIs, co-infection, HIV.

INTRODUCTION

The interrelationships between HIV infection and other STIs are unique, complex and intriguing. STIs will have atypical presentation in the presence of HIV & there can be increased morbidity and complications of STIs. STIs increase the risk of progression of HIV into AIDS and increase its transmission.

There is a strong association between the occurrence of HIV infection and the presence of other STIs.[2] Kalichman SC et al have reported that the average STI prevalence among HIV infected people is 14%.[3] Both ulcerative and non-ulcerative STIs promote HIV transmission, augmenting HIV infectiousness and HIV susceptibility via different biologicalmechanisms.[4] The interaction of the many STDs with HIV is potentially complex, with the possibility of reciprocal influences on susceptibility, infectiousness, and the natural history of infections.[5] Many studies have been done to examine the inter-relationship between different STIs.[6,7] There are, however, a few studies on patients with more than one concurrent STI at the time of presentation.

The aim of our study is to determine the number of HIV positive patients attending the STI clinic of a tertiary care hospital with more than one concurrent STI. Such information is useful for the clinician to recognize HIV seropositive individuals who are at higher risk of acquiring multiple STIs and this inturn helps to focus education more effectively on target groups and for instituting effective intervention.

MATERIALS AND METHODS

The present study comprised of 100 consecutive cases of HIV positive patients with sexually transmitted infections (STIs) attending the outpatient department of DVL, Gandhi Hospital,Secunderabad, from January 2015 to June 2016. Patients having HIV/AIDS, both recently diagnosed and old cases aged >16years, of both sexes are included in the study. Patients diagnosed to have HIV infection, which is proven by ELISA for HIV 1 and 2 by two different kits, with symptoms suggestive of STI were first asked written consent to be a part of the study.

A questionnaire was used to record the patient's name, age, sex, marital status,educational status, occupation, sexual behaviour, monthly cycles / pregnancy status (infemale patients). Patients were questioned about their sexual orientation (homosexual,heterosexual or bisexual). The number of sexual partners during the previous 6 monthswas recorded. The frequency of condom use or failure during the previous 6 months wasasked. Sexualcontact was defined as insertive genital contact with prostitutes or local population.

A thorough clinical history was elicited. Patients were asked about their symptoms,duration of their symptoms. History relevant to appropriate genital symptoms was elicited.Patients were asked about the presence of joint pain, conjunctival irritation, fever and extragenital lesions. Particulars of the HIV status whether the patient was on antiretroviral therapy and treatment if any, taken so far for the current STI was elicited. Pasthistory of systemic illness and STI were elicited. History regarding sexual partners was also elicited.

Clinical examination included general physical examination followed by a meticulous examination of the external genitalia and anal region. The inguinal region was inspected and then palpated for evidence of lymphadenopathy. The group of lymph nodes involved the consistency, tenderness, and fixation to overlying skin, abscess and sinus ifany were noted. The pubic region and the surrounding skin were closely inspected forevidence of pediculosis, folliculitis and/or other skin lesions.

In male patients, the scrotum was inspected for asymmetry and for the presence of any primary or secondary skin lesions. The penis was inspected from base to the tip,noting any abnormalities. Note about circumcision was made. The prepuce was retracted as far as possible, and the region inspected for any genital ulcers, genital warts, and the subpreputial area inspected for evidence of balanitis, balanoposthitis. The number ofgenital ulcers, their location, size, floor, edges, presence or absence of tenderness, consistency, discharge and vesicles if any were noted. Entire circumference of thecoronal sulcus was visualized. In patients with phimosis a careful palpation to revealtenderness or induration was carried out. In case of discharge, the origin of the discharge,whether urethral or subpreputial was noted. The external urinary meatus was inspected for evidence of meatitis, urethral lesions or discharge and congenital abnormalities. If no discharge was immediately apparent, then the urethra was milked out to note any discharge. Perianal region and anus are also examined.

Female patients were examined in lithotomy position; in the presence of a female assistant. The perineum, vulva, labia majora and labia minora were examined for any discharge, redness, swelling, excoriation, ulcers, warts, molluscum lesions and any other skin lesions. With the help of a bivalved Cusco speculum, the vagina was examined for evidence of vaginitis. If there was vaginal discharge, the colour, consistency and odour ofthe discharge was noted. The cervical os was examined for any discharge. Bimanualexamination was done to detect any tenderness. The approach to genital ulcer was sameas in men. The anal and perianal region was examined in left lateral or knee-elbowposition. The presence of any ulcers, warty growth, fissures and discharge was made. Perianal region and anus are also examined.

The sexual contact (partner) of the patient if available, was examined in a similar and appropriate manner.

Following investigations were carried out

1. Smear from the urethral discharge and from the genital ulcer was taken on a clean glass slide. The slide was stained with Gram's stain and examined for the presence of polymorphonuclear leukocytes and the organisms withtheir staining characteristics.
2. One swab was taken and inoculated on to the modified Thayer Martin medium and plated. It was kept in candle extinction jar and sent to the microbiology department for incubation. Results were analyzed by the microbiologist.
3. Subpreputial discharge and vaginal discharge was dissolved in 10% potassium hydroxide and examined for candida.
4. Hanging drop preparation (Wet mount) from the vaginal discharge to rule out the presence of trichomonasvaginalis.
5. Tissue smear from the genital ulcer edge for the presence of Donovan bodies was done in relevant cases.
6. Tzanck smear was done to detect multinucleated giant cells in genital ulcers.
7. Venereal Disease Research Laboratory (VDRL) testing was done in all cases. VDRL was done in serial dilutions, every month for three consecutive months. Titre of more than 1:8 was taken as positive to avoid errors due false positivity.

RESULTS

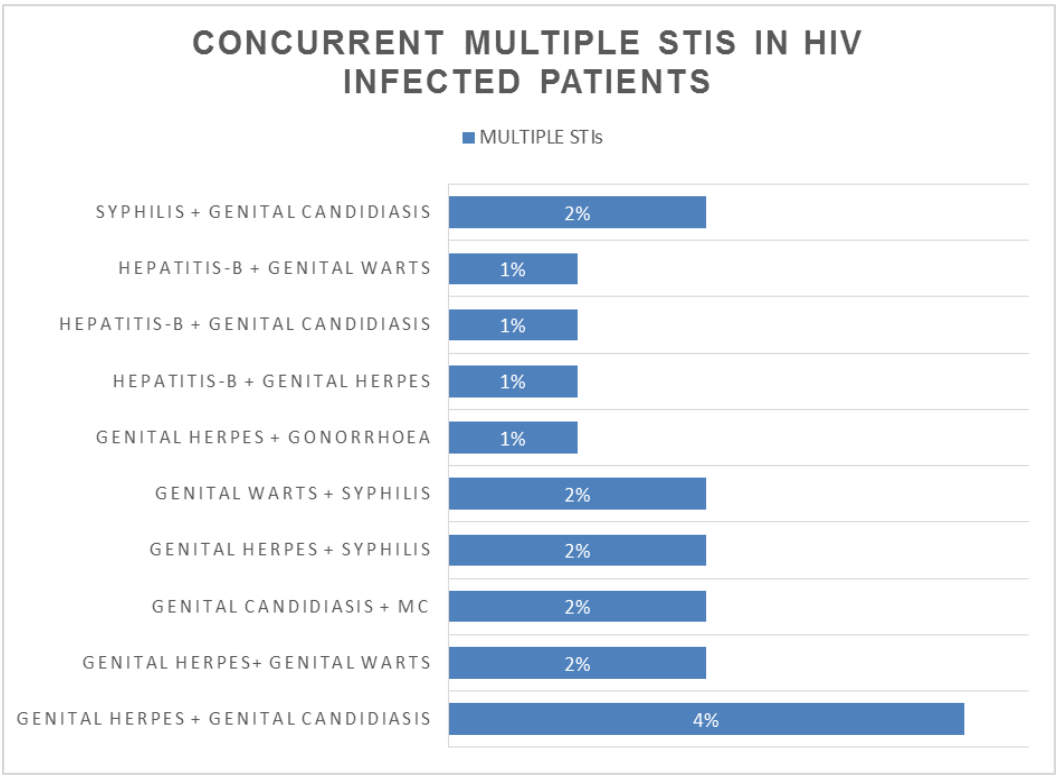
A total of 100 HIV positive patients, with one or more STIs were included in the study. Of these, 18 (18%) patients were identified as having two or more STIs concurrently. Amongst patients having multiple

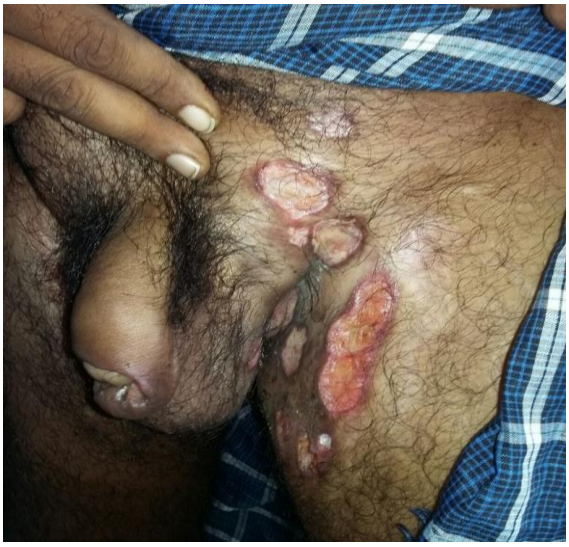
infections,11 (61.1%) patients were male and 7(38.8%) were females male and male tofemale ratio was 1.5 : 1.

Out of 18 of concurrent multiple STIs in HIV infected patients in the study, 4(22.2%) had genital herpes and genital candidiasis. Other multiple STIs were genital herpes and genital warts (11.1%), genital candidiasis and molluscumcontagiosum (11.1%),genital herpes and syphilis (11.1%), genital warts and syphilis (11.1%), genital candidiasis and syphilis (11.1%), hepatitis-B with genital warts (5.5%), hepatitis-B with genital candidiasis (5.5%), hepatitis-B with genital herpes (5.5%) and genital herpes with gonorrhoea (5.5%).

Table: Concurrent Multiple Stis In Hiv Infected Patients.

Disease	Male (%)	Female (%)	Total (%)
Genital herpes + genital candidiasis	01 (1%)	03 (3%)	04 (4%)
Genital herpes+ Genital warts	02 (2%)	-	02 (2%)
Genital candidiasis + MC	-	02 (2%)	02 (2%)
Genital herpes + Syphilis	02 (2%)	-	02 (2%)
Genital warts + Syphilis	02 (2%)	-	02 (2%)
Genital herpes + Gonorrhoea	01 (1%)	-	01 (1%)
Hepatitis-B + Genital herpes	01 (1%)	-	01 (1%)
Hepatitis-B + Genital candidiasis	01 (1%)	-	01 (1%)
Hepatitis-B + Genital warts	-	01 (1%)	01 (1%)
Syphilis + Genital candidiasis	01 (1%)	01 (1%)	02 (2%)
Total	11(11%)	07(7%)	18(18%)





GENITAL HERPES WITH LARGE ULCERS IN HIV INFECTED PATIENT

Multiple STIs are common in patients who attend STI clinics. In our study, 18 percent of HIV positive patients attending STI clinic had more than one concurrent STI. Therefore it is important to screen individuals for multiple STIs who present to STI clinic irrespective of their presenting complaints.

The presence of one STI may increase an individual's chance of acquiring another STI.[8] In HIV infected individuals, symptomatic and asymptomatic STIs enhance sexual transmission of HIV-1 by increasing virus shedding from the genital tract[9,10] and at the same time HIV infection itself increases susceptibility to STI.[11]

It is worth noting that in patients presenting with anogenital wart, other associated STIs were syphilis, HSV-2, Hepatitis B. In patients with HPV–HIV co-infection, the warts were multiple, diffuse, and larger in size. HPV–HIV association resulted in quantitative and qualitative deviations in clinical disease that can be attributed to the host–pathogen interaction

To conclude, pattern of co-infection and the clinical severity of such co-infection may serve as an indicator of the type of host–pathogen interaction determining the outcome of infection. In the present study, HSV-2 co-infection was observed withHPV, HBV, syphilis, candida and gonorrhoea. Such associations may not simply reflect an epidemiological association based on prevalentstrain/agents in a particular setting but may be a pointer to an evolutionary principle of parasite interactions using the susceptible host as a milieu. Evidence for such notion may have to await long-term studies.

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