

Original Research Article

Epidemiological study of syndromic diagnosis cases of HIV positive in Government General Hospital, Nizamabad

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Abstract

Sexually transmitted diseases (STD) consist of different group of endemic diseases of varying clinical presentation, characterized epidemiologically as sexually transmitted infections. Sexually transmitted diseases in individuals have far reaching health, social and economic consequences. Sexually transmitted infections are very important because of their potential complication and interaction with HIV/AIDS. Recognition of HIV/STI cases has tremendous contribution for targeted intervention in the hospital. By evaluating the HIV/STI cases it will be a signal to know the affected groups and major determinants. In this Paper, the study was conducted to evaluate the clinical, epidemiological and laboratory characteristics of the sexually transmitted diseases (STD) found in the government general Hospital, Nizamabad in the year 2013.

Key words

HIV, HIV transmission, Epidemiology, Diagnosis of HIV, Diagnosis of different diseases with HIV.

Introduction

Sexually transmitted diseases (STD) consist of a group of endemic diseases of varying clinical presentation, characterized epidemiologically as sexually transmitted infections. Sexually transmitted diseases in different individuals with

different age group may leads to Scabies, Genital Scabies, Lower abdominal Pain (LAP), Vaginal/ Cervical Discharge (VCD), Urethral Discharge (UD), Genital Ulcer Disease (GUD) - Genital Ulcer Disease Herpetic (GUDH) and Genital Ulcer Disease Non-Herpetic (GUDNH). HIV

from sexual intercourse, the latter generally occurring within the context of sexual abuse. The objective of the present study was to evaluate the epidemiological, clinical and laboratory characteristics of different age groups with HIV Positive [1-4].

Human Immunodeficiency Virus (HIV)

The human immunodeficiency virus (HIV) is the cause of one of the most destructive human pandemics in recorded history. Acquired immune deficiency syndrome (AIDS) is a set of symptoms that occur in the final stage of an infection caused by the human immunodeficiency virus (HIV). AIDS occurs when the virus has destroyed the immune system, leaving the patient highly susceptible to other life threatening infections. People who are infected with HIV are referred to as being 'HIV positive', but they do not necessarily have any symptoms of disease. With the advent of new drug regimes it is now hoped that many HIV positive people may never reach the AIDS stage. HIV is an RNA virus known as a retrovirus. The HIV virion has a central core containing two identical RNA genomes and enzymes such as reverse transcriptase, protease and integrase. There is a protein capsid covered by a lipid bilayer envelope which contains glycoprotein spikes. There are two major strains of HIV. HIV-1 causes the majority of the infections worldwide and is more easily transmitted than the other strain HIV-2 [4-8].

Retrovirus

When cells make proteins they use their DNA as a template to make another nucleic acid called RNA. This process is called transcription. The information on the RNA is then used to assemble the sequence of polypeptides that make up a particular protein. This process is called translation [9].

Reverse transcription

Retroviruses are capable of carrying out transcription in reverse. They contain an enzyme called reverse transcriptase which transcribes the viral RNA into DNA. This DNA can then be

inserted into the genome of the host cell, where it stays for the lifetime of the cell. The cell synthesizes viral RNA and proteins, allowing the virus to multiply inside the host cell [10-12].

HIV transmission

The three main routes for HIV transmission are:

- Contaminated blood (for example between injecting drug users)
- Sex: vaginal, anal (and very rarely, oral)
- From mother to child (either in pregnancy, during birth or via breast milk)
- Worldwide, approximately 60% of new HIV infections are contracted through sex between men and women. The other cases are usually due to:
 - Babies who acquire the virus from their mothers (10%).
 - Drug users sharing used needles (10%).
 - Sex between men (5-10%).

In the early stages of the epidemic, some transmission occurred in health care settings, for example via infected blood for transfusion. This is now rare due to better screening and increased awareness [12-17].

Epidemiology

Identifying and understanding the risk factors associated with HIV acquisition and transmission, and the development and progression of AIDS in men, women, and adolescents are critical aspects in the fight against this disease. Using the epidemiological methods, scientists are able to address key scientific questions by studying and comparing the effects of HIV in different human populations. Scientific findings gathered from these epidemiological studies help to provide insight on how to prevent the spread of HIV and also improve the quality of life for those already infected. The types of scientific investigation through epidemiological research include:

- Identifying the proportion of the population affected by HIV and the rate at which new infections are occurring.

- Describing the changing manifestations of the clinical and laboratory course of HIV infection, the changing frequency with which various complications occur, and the impact of therapy on HIV-related survival and clinical outcomes.
- Investigating the clinical course of HIV infection among people with other comorbidities to better understand the natural and treated history of the disease in those with other chronic conditions.
- Studying the biological, clinical, and epidemiological characteristics of people who are at high risk for HIV infection but do not become infected and those who are long-term non-Progressors.
- The cause of GUD can be related to a number of factors, such as geographical area where sexual intercourse has taken place; socio-economic factors; gender of sexual partners; number of partners; HIV status and local prevalence; drug use; commercial sex; and circumcision.
- GUD constitutes at most 5% of visits to physicians for a possible STI.
- About 70 to 80% of genital ulcers are due to HSV-1 or HSV-2.
- Genital ulcers in sexually active persons can be associated with two or more pathogens.
- Women and men with GUD are at increased risk of acquiring and transmitting HIV.
- Chancroid has been sporadically associated with focal urban epidemics, particularly among cocaine users. Sex workers are the usual reservoir.
- Co-infection with HIV and hepatitis C virus are seen at a high rate. HIV infection increases the transmission of STI genital ulcers, and the reverse is also true.
- Scabies is caused by infection with *Sarcoptes scabiei* var. *Hominis* (a mite parasitic to the horny layer of human skin). Major symptoms of this infection are skin lesions and itching arising from allergic

reactions to the body, excretion and so forth of the parasite [18-23].

Material and methods

Syndromic diagnosis of signs and symptoms of HIV were included in the study. An epidemiological study with a descriptive, exploratory approach was conducted by reviewing patients' charts and notification records, verifying the clinical, epidemiological and laboratory characteristics of sexually transmitted diseases in individuals and the patients' characteristics, including data on gender, age, race and place of birth. Etiological and syndromic diagnosis of HIV on 500 cases was included. Laboratory tests can help keep tabs on patients' health. Some of these tests were done soon after patients were HIV positive. Then depending on their immune status, whether they were on medication or not, and a variety of other factors, their provider set up a schedule for them. Whether Patients had other diseases that were associated with HIV (tests for certain infections). The most common tests:

- CD4 count: Immune system functioning condition
- HIV viral load: Rapidly HIV is replicating, or multiplying,
- Resistance test: Body functioning (tests on kidneys, liver, Cholesterol and blood cells)
- Complete blood count.
- Blood chemistry tests
- Fasting lipid profile
- Tuberculosis test
- STD screening
- Hepatitis A, B, and C

Physical examination

Genital regions

- Number of ulcers and pain:
 - Solitary and painless: chancere
 - Solitary and painful: trauma, Ca, TB, Behcet's disease.
 - Multiple and painful: primary herpes, chancroid, Behcet's disease.

- Multiple and painless: secondary syphilis, recurrent herpes
- Base of ulcer:
 - Indurated: Chancre, Carcinoma, Lymph nodes.
- Chancroid:
 - Multi dose: Erythromycin 500 mg qid x 2 weeks, Cotrimoxazole 500 mg bd x 2 weeks, Ciprofloxacin 500 mg bd x 3 days
 - Single dose: Spectinomycin 2G IMI, Ofloxacin 400 mg, Ceftriaxone 250 mg IMI

Extra-genital regions

They may give important clues to the diagnosis e.g. palms and soles secondary syphilis, lips - fixed drug eruption, finger webs – scabies.

Laboratory tests

- Dark-ground examination spirochetes – for primary and secondary syphilis.
- Serological tests - e.g. V.D.R.L., F.T.A., herpes simplex antibodies.
- Viral study.
- Biopsy - diagnostic in cancroids, Carcinoma.
- Screening for other S.T.D.S.

Management

General management

- Saline dressing
- Analgesics
- Treatment of secondary infections.

Specific treatment

It depends on the etiological agents:

- Genital herpes:
 - Antiviral agents: e.g. Acyclovir, Famciclovir, Valaciclovir
 - Counseling: male – depression is common, female – delivery screening for carcinoma of cervix
- Chancre and secondary syphilis:
 - Penicillin: Procaine penicillin 1.2 mega UIMI x 10 days, Benzathine penicillin 2.4 mega UIMI weekly x 3 weeks
 - Tetracycline: Tetracycline 500 mg quid x 2 weeks, Doxycycline 100 mg bd x 2 weeks
 - Erythromycin 500 mg qid x 2 weeks

Results

The epidemiological study of syndromic diagnosis of HIV positive was conducted on 500 cases in the year 2013 in Government General Hospital, Nizamabad. Based on the symptoms and signs, 475 patients had HIV and also affected with different diseases in different cases.

Diseases affected to the percentage of patients:

- 22% were affected with Scabies.
- 11% were affected with Genital Scabies.
- 20% were affected with GUDNH.
- 12% were affected with GUDH.
- 10% were affected with VCD.
- 10% were affected with UD.
- 10% were affected with LAP.

Based on the symptoms, signs, laboratory investigations and diagnostic techniques, the cases which were diagnosed were tabulated below (Table – 1 to 7) and also graphically represented (Graph – 1 to 7).

Discussion

This study was conducted to determine the prevalence and determinants of HIV among Diagnosis of effective cases like who had HIV and also they suffered with Scabies, Genital Scabies, Lower abdominal Pain (LAP), Vaginal/ Cervical Discharge (VCD), Urethral Discharge (UD), Genital Ulcer Disease (GUD) - Genital Ulcer Disease Herpetic (GUDH) and Genital Ulcer Disease Non-Herpetic (GUDNH) diseases in different age groups and different individuals. The total numbers of cases were 500, in which 95% were affected with HIV and also other

diseases and cases were attended by the Government General Hospital, Nizamabad.

Conclusion

Diagnosis of HIV/ STI cases in earlier stage is important. By evaluating the 500 HIV/ STI cases, 95% were affected with HIV and also other diseases. In this Paper, the study was conducted to diagnose the clinical, epidemiological characteristics of the sexually transmitted diseases (STD) and tested through laboratories, patients were suffered with HIV and also they suffered with Scabies, Genital Scabies, Lower abdominal Pain (LAP), Vaginal/ Cervical Discharge (VCD), Urethral Discharge (UD), Genital Ulcer Disease (GUD) - Genital Ulcer Disease Herpetic (GUDH) and Genital Ulcer Disease Non-Herpetic (GUDNH) diseases in the government general Hospital, Nizamabad in 2013. Furthermore, public health intervention on consistent condom use and partner notification and referral should be given due emphasis targeted to the most at risk population.

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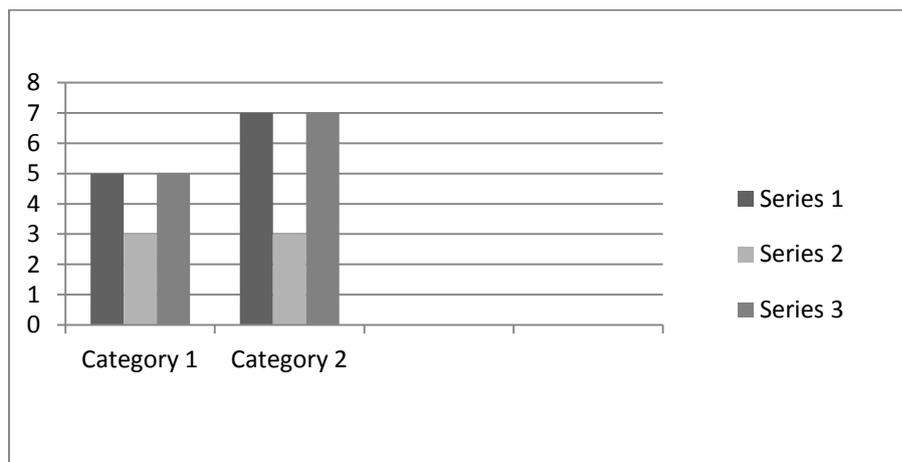
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Table - 1: The patients were affected with Scabies.

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Male	45	Positive	Negative	Scabies
2.	Female	30	Negative	Negative	Scabies
3.	Female	35	Negative	Negative	Scabies
4.	Female	28	Negative	Negative	Scabies
5.	Female	38	Negative	Negative	Scabies
6.	Male	55	Negative	Negative	Scabies
7.	Female	50	Positive	Negative	Scabies
8.	Female	32	Positive	Negative	Scabies
9.	Male	50	Negative	Negative	Scabies
10.	Female	25	Positive	Negative	Scabies
11.	Male	37	Positive	Negative	Scabies
12.	Male	32	Positive	Negative	Scabies

Graph – 1: The patients were affected with Scabies.

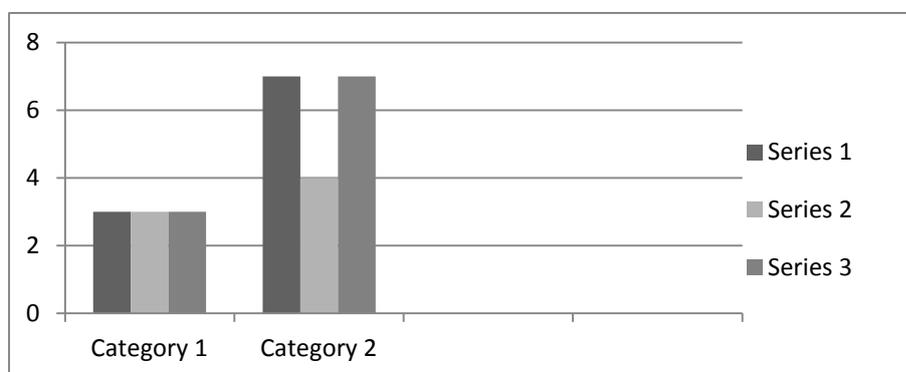


(Category 1 – Male, Category 2 – Female, Series 1 - Case, Series 2 - HIV Positive, Series 3 – Affected with Scabies)

Table - 2: The patients were affected with Genital Scabies (GS).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Male	45	Positive	Negative	GS
2.	Female	30	Negative	Negative	GS
3.	Female	35	Positive	Negative	GS
4.	Female	28	Positive	Negative	GS
5.	Female	38	Negative	Negative	GS
6.	Male	55	Positive	Negative	GS
7.	Female	50	Negative	Negative	GS
8.	Female	32	Positive	Negative	GS
9.	Male	50	Positive	Negative	GS
10.	Female	35	Positive	Negative	GS

Graph - 2: The patients were affected with Genital Scabies (GS).

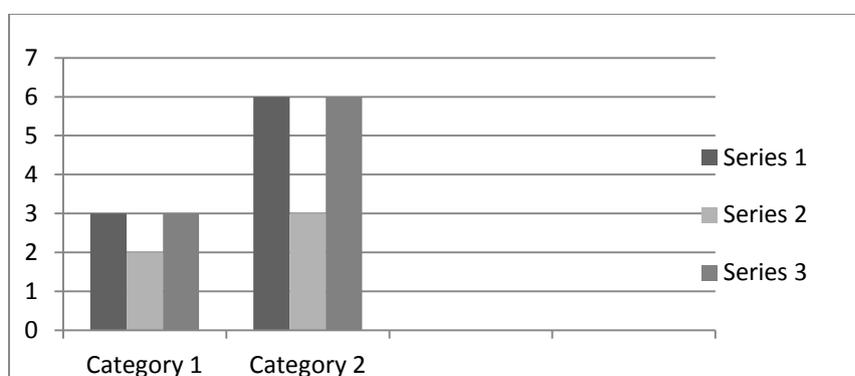


(Category 1 – Male, Category 2 – Female, Series 1 – Cases, Series 2 - HIV Positive, Series 3 – Affected with Genital Scabies)

Table - 3: The patients were affected with Genital Ulcer Disease Non-Herpetic (GUDNH).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Male	28	Positive	Negative	GUD- NH
2.	Female	38	Negative	Negative	GUD -NH
3.	Female	26	Negative	Negative	GUD -NH
4.	Female	25	Negative	Negative	GUD - NH
5.	Female	30	Negative	Negative	GUD - NH
6.	Male	35	Negative	Negative	GUD - NH
7.	Female	38	Positive	Negative	GUD - NH
8.	Female	28	Positive	Negative	GUD - NH
9.	Male	32	Positive	Negative	GUD - NH
10.	Female	35	Positive	Negative	GUD - NH

Graph - 3: The patients were affected with Genital Ulcer Disease Non-Herpetic (GUDNH).

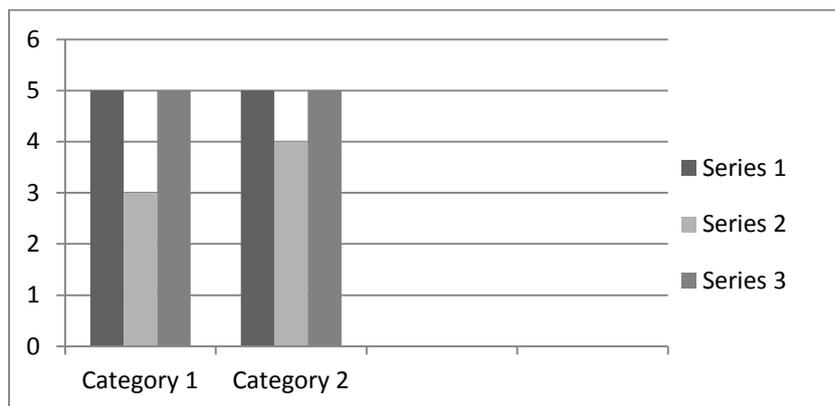


(Category 1 – Male, Category 2 – Female, Series 1 – Cases, Series 2 - HIV Positive, Series 3 - Affected with GUDNH)

Table - 4: The patients were affected with Genital Ulcer Disease Herpetic (GUDH).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Male	32	Positive	Negative	GUD - H
2.	Male	35	Negative	Negative	GUD - H
3.	Male	35	Positive	Negative	GUD - H
4.	Male	38	Positive	Negative	GUD - H
5.	Female	28	Negative	Negative	GUD - H
6.	Male	28	Negative	Negative	GUD - H
7.	Female	38	Positive	Negative	GUD - H
8.	Female	26	Positive	Negative	GUD - H
9.	Female	25	Positive	Negative	GUD - H
10.	Female	30	Positive	Negative	GUD - H

Graph - 4: The patients were affected with Genital Ulcer Disease Herpetic (GUDH).

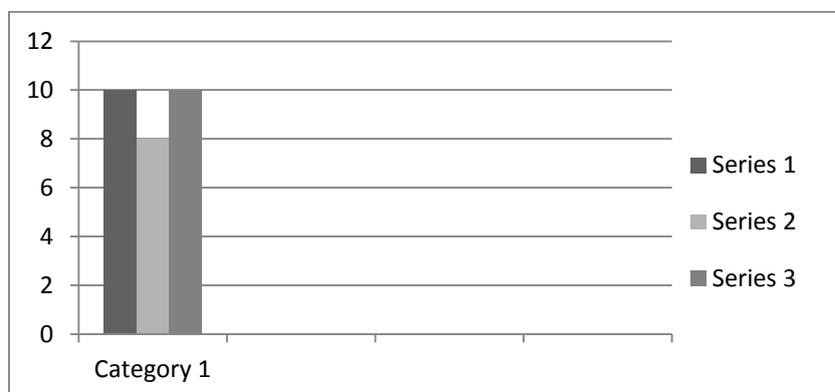


(Category 1 – Male, Category 2 – Female, Series 1 – Cases, Series 2 - HIV Positive, Series 3 - Affected with Genital Ulcer Disease Herpetic)

Table - 5: The patients were affected with Vaginal/ Cervical Discharge (VCD).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Female	30	Negative	Negative	VCD
2.	Female	32	Negative	Negative	VCD
3.	Female	58	Positive	Negative	VCD
4.	Female	45	Positive	Negative	VCD
5.	Female	40	Positive	Negative	VCD
6.	Female	28	Positive	Negative	VCD
7.	Female	26	Positive	Negative	VCD
8.	Female	38	Positive	Negative	VCD
9.	Female	26	Positive	Negative	VCD
10.	Female	35	Positive	Negative	VCD

Graph - 5: The patients were affected with Vaginal/ Cervical Discharge (VCD).



(Category 1 – Female, Series 1 – Cases, Series 2 - HIV Positive, Series 3 – Affected with Vaginal/ Cervical Discharge)

Table - 6: The patients were affected with Urethral Discharge (UD).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Male	35	Positive	Negative	UD
2.	Male	60	Positive	Negative	UD
3.	Male	48	Positive	Negative	UD
4.	Male	29	Positive	Negative	UD
5.	Male	35	Positive	Negative	UD
6.	Male	48	Positive	Negative	UD
7.	Male	60	Positive	Negative	UD
8.	Male	40	Positive	Negative	UD
9.	Male	55	Positive	Negative	UD
10.	Male	30	Positive	Negative	UD

Graph - 6: The patients were affected with Urethral Discharge (UD).

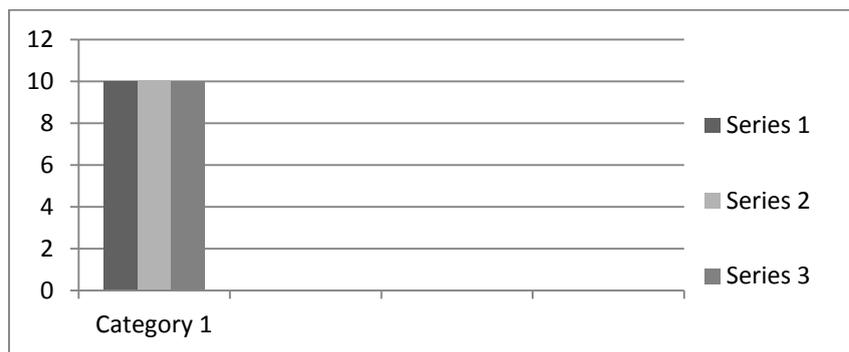


(Category 1 – Male, Series 1 – Cases, Series 2 - HIV Positive, Series 3 – Affected with Urethral Discharge)

Table - 7: The patients were affected with Lower Abdominal Pain (LAP).

Sr. No.	Sex	Age	HIV	VDRL	Diagnosis
1.	Female	35	Positive	Negative	LAP
2.	Female	25	Positive	Negative	LAP
3.	Female	45	Positive	Negative	LAP
4.	Female	40	Positive	Negative	LAP
5.	Female	28	Positive	Negative	LAP
6.	Female	26	Positive	Negative	LAP
7.	Female	38	Positive	Negative	LAP
8.	Female	26	Positive	Negative	LAP
9.	Female	35	Positive	Negative	LAP
10.	Female	32	Positive	Negative	LAP

Graph - 7: The patients were affected with Lower Abdominal Pain (LAP).



(Category 1 – Female, Series 1 – Cases, Series 2 - HIV Positive, Series 3 – Affected with Lower abdominal Pain)