Seroprevalence of HIV antibodies in the patients of sexually transmitted infection

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Abstract

**Background and Aims:** AIDS, the acquired immunodeficiency syndrome is a fatal illness caused by a virus known as a human immunodeficiency virus (HIV) which breaks down body’s immune system, leaving the victim vulnerable to a host of life threatening infection, neurological disorders or unusual malignancies. Presence of a conventional STI such as Syphilis or Chancroid increases the risk of sexual HIV transmission considerably, perhaps as much as 10 to 100 fold for a single act of intercourse.

**Methods:** One hundred and twenty three patients clinically diagnosed as cases of STI were studied for seroprevalence of HIV antibodies. History, clinical examination and lab investigations were done for all the patients so as to group them in various types of STI.

**Results:** Out of one twenty three patients of STI, 9 patients only had presence of HIV antibodies. Most of the patients of STI belonged to rural background.

**Conclusion:** While dealing with patients of STI it is imperative to take a proper history and to treat the underlying cause. Counselling is must in all cases.

**Keywords:** HIV, STI.

Introduction

India is a major epicenter of the AIDS epidemic. The predominant heterosexual mode of transmission, poor socioeconomic strata and inadequate health care system greatly contribute to this epidemic (1). Much is known about the causal microorganism, the Human Immunodeficiency Virus(HIV) than about any other virus. There are methods of proven efficiency for preventing transmission. If we can slow the sexual transmission of HIV, we can curb the AIDS pandemic. This is because
AIDS is essentially a sexually transmitted infection (STI) although, like some of the conventional STIs, it can also be transmitted through blood and perinatally. Therefore, STIs are markers of risk behavior for HIV transmission as well as co-factors in HIV transmission. Keeping this in view, a number of researchers from different parts of the world have focused their attention on this high risk group i.e. STI patients to ascertain the trends of HIV infection in the community.

Italia in his study found that seroprevalence among STI patients is the most sensitive indicator of entry of HIV infection in a community (2). In the absence of any cure, there is a prime importance of prevention of infection. One aspect of this is case detection and prevention of further infection.

The connections between HIV and STIs are three fold:

- Several STIs cause lesions or open sores which may serve as a portal of entry directly into blood stream and facilitate HIV transmission.
- Some STIs are considered to be co-factors, which assist in the immune system malfunction leading to AIDS.
- People who leave themselves open to STI infection also are at risk of eventual HIV infection (CDC, 2000).

There is two to five fold-increased risk of HIV transmission associated with sexually transmitted infections.

Materials and Methods

One hundred twenty three confirmed cases of STIs were diagnosed on the basis of detailed history, clinical examination and laboratory tests. In our study haemoglobin, total leucocyte count, differential leucocyte count, fasting blood sugar and urine analysis of each patient was done. Screening of blood samples for HIV 1 and 2 antibodies of all cases was conducted after voluntary counselling. In the present study ELISA testing for HIV 1 and 2 antibodies using indirect solid phase ELISA was done. The optical density (OD) and cut off (CO) values were computed using microwave ELISA reader at 450nm wavelength. Sera giving clear negative results were accepted as such while sera giving equivocal results were retested using ImmunoCombiTest. ImmunoComb B1-spot HIV-1 and HIV-2 kit Organics was used.

- Gram stain smear for Gonnococci and Chancroid was done
- Microscopic examination of urine to detect pus cells for urethritis.
- Urethral smears (Direct and after milking the urethra) and prostatic smears (after prostatic massage) were examined for urethritis and prostatitis where necessary Gram stained smears were examined.
- Two glass urine examination for urethritis.
- Dark ground Illumination microscopy (D.G.I.) test for Syphilis was done.
- VDRL(Qualitative and Quantitative).
- Direct examination of scrapings in 10% KOH for Candidiasis
- Examination of wet film for Trichomoniasis.
- Examination of Tzanck smear for Herpes Genitalis.

Results

Out of one twenty three patients of STI ,out of 9 HIV positive cases,55.56% were in the age group of 15 to 29 years,1 (11.11%) were in age group of 30 to 45 years and 3(33.33%) cases were in the age group more than 45 years. No HIV positive cases were detected in less than 15 years of age as shown in Table 1.
Table 1: Age wise distribution of HIV positive cases in STI group

| Age(GroupName) | HIV Positive | Percentage |
|---------------|--------------|------------|
| <15 years     | Nil          | Nil        |
| 15-29 years   | 5            | 55.56%     |
| 30-45 years   | 1            | 11.11%     |
| >45 years     | 3            | 33.33%     |
| Total         | 9            | 100%       |

Table 2: Sex wise distribution of HIV positive cases

| Sex   | HIV positive | Percentage |
|-------|--------------|------------|
| Male  | 6            | 66.67%     |
| Female| 3            | 33.33%     |
| Total | 9            | 100%       |

In STI group out of nine positive cases, six (66.66%) cases were males and three (33.33%) cases were females. Ratio of HIV positive males to HIV positive females was 2.

Table 3: Area wise distribution of patients in STI group

| Area   | Number | Percentage |
|--------|--------|------------|
| Rural  | 64     | 52.03%     |
| Urban  | 59     | 47.97%     |
| Total  | 123    | 100%       |


table

In STI group out of one hundred and twenty three cases 64(25.03%) were rural and 59(47.97%) were urban as shown in shown in table 3.Comparison of rural and urban cases in both groups is statistically not significant.

Table 4: Area wise distribution of HIV positive cases in STI group

| Area | HIV positive | Percentage |
|------|--------------|------------|
| Rural| 8            | 88.89%     |
| Urban| 1            | 11.11%     |
| Total| 9            | 100%       |

In STI group out of 9 HIV positive cases 8(88.88%) cases were rural and 1(11.11%) cases were urban as shown in table 4.

Table 5: Distribution of patients according to marital status in STI group

| Marital status | Number | Percentage |
|----------------|--------|------------|
| Married        | 74     | 60.16%     |
| Unmarried      | 46     | 37.40%     |
| Widow          | 3      | 2.44%      |
| Total          | 123    | 100%       |
In STI group out of 123 cases 74(60.16%) cases were married. 46(37.40%) cases were unmarried and 3(2.44%) were widows as shown in table 5.

Table 6: Marital status wise distribution of HIV positive cases

| Marital status | STI group | HIV positive | Percentage |
|----------------|-----------|--------------|------------|
| Married        | 8         | 8            | 88.89%     |
| Unmarried      | Nil       | Nil          | Nil        |
| Widow          | 1         |              | 11.11%     |
| Total          | 9         |              | 100%       |

In STI group out of 9 HIV positive cases 8(88.88%) cases were married and 1(11.11%) was a widow as shown in table 6.

Table 7: Incidence of HIV positive cases among STI group

| Sr.no | STI group                  | Total number | Percentage | HIV positive | percentage |
|-------|----------------------------|--------------|------------|--------------|------------|
| 1     | Condyloma accuminata       | 29           | 23.5%      | 4            | 13.79%     |
| 2     | Herpes Progenitalis        | 25           | 19.5%      | 2            | 8%         |
| 3     | Gonorrhoea                 | 10           | 8.13%      | -            | -          |
| 4     | Primary syphilis           | 14           | 11.3%      | 1            | 7.14%      |
| 5     | Secondary Syphilis         | 9            | 7.31%      | -            | -          |
| 6     | Balanoposthitis(candidial) | 8            | 6.5%       | 2            | 25%        |
| 7     | Venereal Scabies           | 8            | 6.5%       | -            | -          |
| 8     | Molluscum Contagiosum      | 5            | 4.8%       | -            | -          |
| 9     | Chancroid                  | 4            | 3.2%       | -            | -          |
| 10    | Vulvovaginitis             | 3            | 2.44%      | -            | -          |
| 11    | Non gonococcal urethritis  | 8            | 6.5%       | -            | -          |
| Total |                          | 123          | 100%       | 9            | 7.32%      |

Out of 123 cases of STI group, 29(23.5%) cases had Condyloma accuminata, 25(19.5%) cases had Herpes Progenitalis, 23(18.69%) cases had Syphilis, 10(8.13%) cases had Gonorrhoea, 8(6.5%) cases had Candidal Balanoposthitis, 8(6.5%) cases had Venereal Scabies, 8(6.5%) cases had Non Gonococcal urethritis, 5(4.8%) cases had genital Molluscum Contagiosum, 4(3.2%) cases had Chancroid and 3(2.44%) cases had Vulvovaginitis.

In STI group out of nine HIV positive cases 4(44.44%) had Condyloma accuminata, 2(22.2%) had Candidial balanoposthitis, 2(22.22%) had Herpes Progenitalis and 1(11.11%) had Primary Syphilis.
Discussion

In India, HIV seroprevalence among STI patients varied from 0%-32%. In Kanpur the HIV seropositivity among STI cases was 0%3, in Tirupati 0%4, Gorakhpur 7.9%5, Pune 23%6 and 32% in Mumbai6. Kulkarni et al7 (1992) found HIV seroprevalence varying from 20-30% in patients attending STI clinic at Mumbai. Bedi (1994)8 studied 250 cases of genital ulcer disease at Delhi and HIV seroprevalence was found to be 4.1%.

Out of total 2330 patients, 516 patients with STI i.e 22.14% were analysed9. Frequency of different STIs observed in order was Herpes Progenitalis (21.89%), Syphilis(16.27%), Chancroid (11.82%) and Granuloma inguinale (7.55%), Gonococcal urethritis and genital warts(3.87% each). LGV was found in 0.58% of cases, HIV infection in 3 cases only(0.56%). Other miscellaneous conditions like Candidiasis (13.75%), Trichomoniasis (2.7%) and Molluscum (2.14%) were responsible in 18% as a whole and non specific infection in 14%. Most of the patients were married, were from low socio economic status and there was a male preponderance with a peak age between 20 to 30 years.

In our study, in STI group the age incidence was consistent with the findings reported in similar studies where it has been observed that 56% of 89 cases at Tirupati were between 21-30 years of age10,78% of 14 HIV positive cases were between 15-25 years of age at Vellore. Sex incidence was consistent with trends observed in other countries where the male to female ratio among HIV infected persons has begun to equalize. Infected men now outnumber the infected women by 2:1 instead 6:1. In India to the epidemic continues to shift towards the women11.

In the current study rural group contributed to 88.88% of HIV positivity in STI cases. This is because the region of Punjab in which the study was conducted is primarily rural and a big percentage of population live in villages. This trend is also indicative of fact that in our country HIV infection is spreading from urban to rural areas11.

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