CHAPTER IV
DISCUSSION

The prevalence of sexually transmitted diseases in any community is an index of socioeconomic status, moral outlook and practice, presence of efficient machinery for early diagnosis, available treatment facilities and mass awareness of preventive measures. The present study was undertaken to study the demographic profile, sexual behaviour and pattern of various sexually transmitted diseases including HIV.

In the present study of 1870 patients with various sexually transmitted diseases majority of the patients 1560 were males (83.42%) and 310 patients were females (16.58%). Male to female ratio was 5.03:1. This is in accordance with various studies carried out in different STD clinics in India. In a study by Ranganayakulu et al. (1998) from Kurnool, male to female ratio was 5.15:1 which is similar to our study. In a study by Aggarwal et al. (2002) from Rohtak there were 87.7% males and 12.22% females with male to female ratio of 7.2:1 and in study by Mehta et al. (1998) it was 7:1. Both these studies have higher ratio than the present study.

Some of the studies revealed lower male to female ratio than the present one. Reddy et al. (1993) reported a ratio of 3.3:1, Murugesh et al. (2004) 3.08:1 and Narayanan (2005) 2.8:1. In general all the studies carried out in India at different places showed that more number of male patients seek advice for STDs. Due to social and moral inhibitions, less number of females usually attend STD clinic. Moreover, genitoulcerative diseases (GUDs) might occur on cervix or vagina and remained unnoticed.
Majority of the patients in the present study were in the young age group of 15-34 (75.61%) which is similar to the study by Grover et al (1993), Shendre and Tiwari (2002) and Aggarwal (2003) who reported 81%, 80.43% and 76% respectively. Study by Majumdar et al. (1997) reported 92% of cases in the young age group of 15-34 years with highest sexual activity. STDs most commonly affect people in the age group of 15-44 years (Camaroni and Gerbase, 2005).

In the present study, 34.97% of the patients had completed high school education followed by those who had completed primary education in 32.35% cases. Illiteracy was found in 19.14% of cases. Similar studies by Mehta et al. (1998) and Subramaniam et al (2003) reported high school education in 35% and 33.3% respectively. Illiteracy was seen more in females (40.64%) compared to male patients (14.87%).

Occupation wise majority of patients were labourers (18.45%), followed by service class (17.06%), housewives/housekeeping (12.09%), skilled workers (10.11%), drivers (7.70%), unemployed (6.74%), factory workers (6.52%), business (5.45%), students (2.57%), diamond polishers (2.51%), farmers (2.19%), security / army / police (2.14%), commercial female sex workers (1.87%), fruit vendors (1.55%), prison inmates (1.34%), restaurant workers (0.91%) and servants (0.80%).

In the present study majority of cases (18.45%) were labourers which is similar to the study by Gupta et al. (1997) and Khandpur et al. (2002) who reported 18.06% and 19.08% labourers respectively. Studies by Mehta et al. (1998), Subramaniam et al (2003) and Murugesh et al. (2004) reported 23%, 25.05% and 28.9% respectively which is higher than present study.
In the present study, housewives accounted for 226 (12.09%) of the cases. It is high, compared to the study by Mehta et al. (1998) who reported 9% of cases and lower compared to the study of Murugesh et al. (2004) who reported housewives in 14.95% of the cases. Similar studies by Gupta et al. (1997) reported housewives in 10.77% of the cases while Aggarwal et al. (2002) reported in 11.24% of cases.

In our study 7.70% of the cases were drivers which is high compared to study by Subramanian et al. (2003) who reported drivers in 5% of cases. Studies by Mehta et al. (1998) reported drivers in 10% of cases while Aggarwal (2003) reported drivers in 9.67% of cases. Factory workers were observed in 6.52% of cases which is lower compared to the study by Gupta et al. (1997) who documented in 11.78% of cases.

STDs were seen in 5.45% of the cases doing one or another kind of business. Similar studies by Murugesh et al. (2004) reported business in 7.06% of the cases. Farmers accounted for 2.19% of cases which is in stark contrast to study by Murugesh et al. (2004) who reported agriculturists in 26.92% of cases.

In the present study 2.57% cases were students. Murugesh et al. (2004) reported students in 4.67% of the cases while Aggarwal et al. (2002) reported students in 7.06% of cases.

Categories like diamond polisher (2.51%), security/army/police (2.14%), commercial female sex workers (CFSWs) (1.87%), fruit vendors (1.55%), prison inmates (1.34%), restaurant workers (0.91%) and servants (0.11%) together accounted for 11.12% of the cases.

Majority of patients in the present study were married (58.07%), followed by 36.1% of unmarried, 2.19% widows or widowers and 1.55% of the patients were staying
away from their spouse due to traveling job at other places or due to conflicts. Only 1.34% cases were divorced and the remaining 0.75% were remarried persons.

Married patients in the present study constituted 58.07% of the cases, which is similar to the studies by Khandpur et al. (2001) and Narayanan. (2005) who reported 54.56% and 55.1% respectively. In other studies Rajanarayan et al. (1996) reported in 67% of the cases, whereas Mehta (1998) documented in 82% of cases, Subramaniam et al. (2003) in 63.7% of cases and Murugesh et al. (2004) obtained in 72.87% of cases in married patients.

Genderwise, 53.46% of males were married in our study. A study by Aggarwal et al. (2002) reported STDs in 65.5% of married males. Majority of females in the present study were married (81.3%). It is similar to the study by Murugesh et al. (2004) who reported STD cases in 77.24% of married females, while Subramanium et al. (2003) reported in 70.1% of married females. A study by Aggarwal et al. (2002) reported as high as 92.03% of cases of married females. Various studies including the present study point to the fact that married females are at a particular risk of contracting various STDs from their spouses and also from extramarital relations.

In males the most common route of acquisition of STDs is by contact with commercial female sex workers in 47.69% of cases. This is similar to the study by Solanki et al. (2003) from Jamnagar who reported exposure with commercial female sex workers in 46% of cases. Aggarwal (2003) reported exposure with CFSW in 83.70% of males. Thus commercial female sex workers still remain the major source of infection.
In the present study 204 patients (13.08%) reported of having exposure with a known person (i.e. either a neighbour or girlfriend). Study by Aggarwal (2003) also reported exposure with known person in 12% of cases. Hundred and ninety two (12.31%) of the patients reported of having exposure with an unknown person.

In the present study of 1560 male patients, seventy four patients (4.74%) reported history of homosexual exposure. These were all males who were unmarried and never in their lifetime had a contact with the opposite sex. A study by Khandpur et al. (2001) reported homosexual contact in 6.16% of the cases. Similar studies by Thappa et al. (2001) from Pondicherry and Narayanan (2005) from Kottayam reported homosexual contact in 2.9% and 2.8% of cases respectively.

Studies have shown that bisexuality tends to be practiced by men irrespective of their marital status (Khan, 1994; Tripathi and Malhotra, 2003). In the present study bisexuality was observed both in the married (3.27%) as well as in the unmarried (3.01%) which justifies with the above studies.

Fifteen (0.96%) male patients had multiple and bisexual exposure along with exposure with eunuchs who are also known as ‘hijras’. Although literature regarding exposure with eunuchs is scanty, studies have shown that in most parts of India they are known to depend at least partly for their livelihood on working as male prostitutes (Tripathi and Malhotra 2003). Studies have shown that Hijras engage themselves in sexual activity with men for money or for satisfying their own homosexual desires (Nag, 1994). Hijras are often believed to be passive partners in anal intercourse without the use of condoms, making them vulnerable to HIV and other STDs (Tripathi and Malhotra, 2003).
Combining homosexual, bisexual and those with multiple (HM+HT+Eunuchs) contacts 193 (12.37%) of the patients had a very high risk behaviour with multiple partners. It is a serious cause of concern and steps must be undertaken to concentrate particularly at this group of vulnerable individuals because many of them as in case of bisexuals may be married individuals which in turn increase the risk of transmission of STDs including HIV to their spouses and also to their children by mother to child transmission.

Eight cases (0.51%) in the present study were reported cases of abuse of whom seven were of paediatric age group, while one was a twenty year old male who was a case of forcible abuse.

Eighty six females (27.74%) were those whose spouse had history of high risk behaviour with multiple partners along with a past or present complaint of STDs (including HIV in some cases) and in turn infected their wives.

A history of exposure with a known person was reported in 53 (17.1%) of the cases. Out of them 33 (10.65%) were married females who had exposure with a known person. Thirty -five females (11.3%) were commercial female sex workers. Out of them, 26 (8.39%) were married females working as CFSWs.

Four females (1.29%) in the paediatric age group were cases of forcible child sex abuse, while one female of one and half year of age was a case of perinatal mother to child transmission. The patient had congenital syphilis. The child’s mother had history of secondary syphilis at the time of pregnancy.

In this study of 1870 patients with various sexually transmitted diseases, herpes progenitalis (HP) was the commonest STD accounting for 37.49% of the cases followed
by primary and secondary syphilis together accounting 15.19% of the cases, condyloma acuminata (10.43%), mixed VDs (9.95%), gonorrhoea (9.79%), chancroid (7.91%), molluscum 5.51%, non gonococcal urethritis (1.76%), balanopsthitis (1.34%), granuloma inguinale (0.48%) and lymphogranuma venereum (0.16%).

Herpes Progenitalis

In the recent years there has been an increase in the number of cases of genital herpes in both developed and in developing countries. In the present study herpes genitalis topped the list of STDs cases with 37.49% of cases.

In Ahmedabad the incidence of herpes has increased from 8.23% in 1993-94 to 27.9% in 1998-1999 (Arora et al., 2002). In a study by Risbud et al. (1999) from Pune reported 26% of patients having herpes etiology in patients with GUDs by multiplex-PCR technique. This is similar to the study of Narayanan (2005) who reported HP in 24.4% of cases. Khandpur et al (2001) who reported genital herpes in 11.79% of the cases, Aggarwal et al. (2002) in 16.92% of cases, Ranganayakulu et al. (1998) in 14 % of cases, Murugesh et al. (2004) in 13.04% of the cases and Jaiswai and Singh et al. (1998) in 21% of the cases which is lower when compared to the present study.

Globally also genital herpes is on the rise. In Singapore, the seroprevalence of herpes infection has increased from 17% in 1980 to 72% in 1993 (Chua and Cheong 1995). In USA the seroprevalence of herpes in STD clinic attendees varies from 30% to 70% (Koutsky et al. 1992). Among STD attendees in UK from 1995-1999, 62% of males and 77% of females were found to have HSV-1 isolate in their genital lesions (Vyse et al. 2000).
Syphilis

The second commonest STD in the present study was Syphilis accounting for 284 (15.19%) of the cases. Out of 284 cases, 79 (4.22%) were cases of primary syphilis, 204 (10.91%) were cases of secondary syphilis and only 1 case (0.05%) was of congenital syphilis. Similar studies by Ranganayakulu et al. (1998) reported syphilis in 15% of the cases and Chopra et al. (1999) reported syphilis in 17.20% of cases. Khandpur et al. (2001) and Murugesh et al. (2004) had reported syphilis in 15.56% and 15.95% of cases respectively which is similar to the present study. The incidence in the present study is low compared to the study carried out by Jaiswal et al. (2003) who reported syphilis in 37% of the cases and Gupta and Jain (1995) who reported syphilis in 30.20% of the cases.

A previous study from Ahmedabad by Parmar et al. (2001) reported syphilis to be the commonest STD present in 28.90% of the STD patients. But in the recent years the top position of syphilis has been taken by genital herpes. One of the reason may be due to increase availability of antibiotics for curable bacterial STD, and another reason is the reactivation of latent herpes simplex virus infection.

Only one female patient (1 year old) with a case of congenital syphilis was reported in the present study. The patient had acquired the infection perinatally from her mother who had history of secondary syphilis during the time of delivery.

Various previous studies in India have shown higher incidence of secondary syphilis as compared to primary syphilis. The reasons for this may be unnoticed primary chancre in early stage of the disease, inadequate treatment for primary stage or due to poor health seeking behaviour (Kar, 2004).
In a study from Ahmedabad by Parmar et al. (2001) reported primary syphilis in 5.1% of cases and secondary syphilis in 23.7% of cases. A study from Manipur by Zamzachin et al. (2003) reported primary syphilis in 2.5% of cases and secondary syphilis in 3.5% of cases. Aggarwal et al. (2002) from Rohtak reported primary syphilis in 7.46% of cases and secondary syphilis in 16.54% of cases. Study from Patiala by Chopra et al. (1999) reported primary syphilis in 4.9% of cases and secondary syphilis in 8.4% of cases. A study from Delhi by Kar (2004) reported primary syphilis in 5.5% of cases and secondary syphilis in 8.7% of cases.

All patients in our report who were clinically diagnosed syphilis (either primary or secondary) were subjected to rapid plasma reagin (RPR) test to rule out syphilis. Out of 79 clinically diagnosed cases of primary syphilis 30 cases were RPR positive. Thus the positivity of RPR test for primary syphilis in the present study was 37.97%. Out of 204 patients clinically diagnosed with secondary syphilis 163 patients were RPR positive. Thus the positivity for secondary syphilis was 79.90% in the present study.

One case in the present study was a one year old female with congenital syphilis. She had acquired infection from her mother during pregnancy. She was confirmed positive by RPR test.

Out of total 284 cases of syphilis, 194 cases were confirmed positive by RPR method. The RPR positivity in the present study was 68.30 percent.

**Condyloma acuminata**

Condyloma acuminata (CA) accounted for 195 (10.43%) of the cases. Studies by Jaiswal et al. (2003) reported CA in 10.4% of cases and Khandpur et al. (2001) in 9.30% of the cases and Jaiswal and Singh (1998) in 11.25% of cases. It is higher compared to
the study of Chatterjee and Ramadasan (2004) who reported condyloma acuminata in 6.4% of the male cases, Murugesh et al. (2004) in 5.92% of cases, Chopra et al. (1999) in 5.1% of the cases and Mehta et al. (1998) who reported CA in 3% of the cases but lower compared to the study by Gupta et al. (1997) who reported warts in 21.54% of the cases and Gill (2003) and Narayanan (2005) also reported warts in 17.5% of cases each. In a study by Arora et al. (2002) from Ahmedabad reported increased number of cases of condyloma acuminata from 7.17% in (1993-1994) to 8.80% in (1998-1999).

**Gonorrhoea**

Globally gonorrhoea is still one of the commonest bacterial sexually transmitted disease. In the present study gonorrhoea was reported in 183 (9.79%) of the cases. In study by Narayanan (2005), Murugesh et al. (2004), Khandpur et al. (2001) and Jaiswal and Singh (1998) reported gonorrhoea in 10%, 10.14% 11.57% and 11.69% of the cases respectively. Ranganayakulu et al. (1998) reported gonorrhoea in 16% of the cases, which is higher compared to present study. Chatterjee and Ramdasan (2004) documented gonorrhoea in 5.77% of the male STD patients. Mehta et al. (1998) reported gonorrhoea in 3% of cases which is lower compared to present study.

**Chancroid**

Chancroid was observed in 7.91% of the cases. Studies by Narayanan (2005) reported in 10.6% of the cases. Aggarwal et al (2002) also reported in 10.97% of the cases, Murugesh et al. (2004) in 10.45% and Khandpur et al (2001) in 11% of the cases which is higher than the present study.
Various studies have shown the incidence of chancroid to be varying from as low as 1.6% in study by Chopra et al. (1999) from Patiala to as high as 30.76% in study by Majumdar and Saha (1997) from Calcutta. A study from Jabalpur in male STD patients by Chatterjee and Ramdasan (2004) reported chancroid in 30.16% of the cases. Jaiswal et al. (2003) reported chancroid in 14.64% of the cases, while Ranganayakulu et al (1998) reported chancroid in 2.88% of cases.

The causative organism H.ducreyi is difficult to visualise on gram smears and very fastidious to grow in culture media. This results in diagnostic errors and the incidence is variable.

Granuloma inguinale (Donovanosis)

It is observed rarely particularly in the Western part of India. Although cases of donovanosis has been reported from Southern part of India. The incidence of donovanosis in the present study was only 0.48%. This is similar to the study by Khandpur et al. (2001) and Jaiswal et al. (2003) who reported donovanosis in 0.48% and 0.53% of the cases. Aggarwal et al. (2002) reported donovanosis in 0.86% of the cases. Mehta et al. (1998) reported donovanosis in 0.5% of cases and Ranganayakulu et al reported in 1.15% of the cases. A few studies like the study from Pondicherry by Reddy et al. (1993) reported donovanosis in 8.2% of cases, Jamkhedkar (1998) reported donovanosis in 8.2% of cases and Murugesh et al (2004) in 5.82% in STD clinic attendees. Except a few places in Southern India donovanosis is particularly rare in India.
Lymphogranuloma venereum (LGV)

In the present study LGV was reported in 0.16% of the cases. This is similar to the study by Chopra et al. (1999) who reported LGV in 0.15% of the cases, Aggarwal et al. (2002) in 0.21% of the cases, Khandpur et al. (2002) who reported in 0.45% of the cases. This is in contrast to the study by Jaiswal et al. (2003) from Kolkatta who obtained LGV in 5.11% of the cases. Mehta et al. (1998) reported LGV in 6% of the cases and Reddy et al. (1993) in Pondicherry reported 8% of the cases. This shows the high incidence of LGV in Eastern and Southern parts of India.

Molluscum contagiosum (MC)

The incidence of genital molluscum contagiosum was reported in 5.51% of the cases. Similar studies by Chopra et al. (1999) reported MC in 4.4% of cases. Ranganayakulu et al. (1998) reported in 2% of cases and Parmar et al. (2001) from Ahmedabad reported MC in 1% of the cases which is lower than the present study.

In the recent years there has been an increase in the number of viral STDs and MC is a viral infection that is observed most commonly in patients infected with HIV. In adults the lesions of MC are localised on the genitals and perigenital areas however in patients coinfected with HIV the lesions may spread to face, trunk and extremities. In HIV positive patients the lesions are more widely spread, multiple in number and large in size.
Mixed venereal diseases or (MVDs)

More than one infection occurs due to different incubation periods of various STDs, missed diagnosis, inadequately treated infections or immunocompromised state of the host. Mixed VDs were reported in 9.95% of the cases in the present study.

Studies by Jaiswal et al. (1998) (in all male patients) reported MVDs in 7.15% of the cases, followed by Narayanan (2005) who reported MVDs in 6.3% of the cases and Aggarwal et al. (2002) reported MVDs in 5.51% of the cases and Parmar et al. (2001) from Ahmedabad reported MVDs in 4.3% of the cases.

The increase in number of cases of Mixed VDs can be an important marker of the patient's high risk behaviour and his increased risk for acquisition or transmission of HIV.

Nongonococcal urethritis (NGU)

NGU was reported in 1.76% of the cases. All patients having discharge complaint were subjected to gram staining and patients negative for gram negative diplococci were included in this category.

Study by Aggarwal et al reported NGU in 4.75% of cases and Jaiswal et al. reported in 4.23% of cases and Narayanan reported NGU in 3.5% of the cases followed by Murugesh et al. in 8.14% of cases, Khandpur et al. in 7.44% of cases and Chatterjee and Ramdasan in 3.88% of the cases. Due to lack of facility for culture for chlamydia and PCR it is difficult to stamp chlamydia as etiological agent.
Balanoposthitis

Balanoposthitis was reported in 1.34% of the cases. Study by Arora et al. (2002) reported in 1.10% of the cases. Ranganayakulu et al. (1998) reported in 2% of cases while Jaiswal and Singh (1998) reported in 3.68% of cases and Chopra et al. (1999) from Patiala reported balanoposthitis in 8.7% of cases.

In the present study of patients with various sexually transmitted diseases, genital area was the most common site of involvement of lesion accounting for (89.8%) of the cases. Rest of the patients had involvement of either ano-genital region, only anal region or body lesions along with anogenital lesions especially in cases of secondary syphilis and a few cases of molluscum contagiosum.

HIV profile of patients with various sexually transmitted diseases

In the recent study carried out on 1870 patients with various sexually transmitted diseases 209 patients were found to be seropositive for HIV. Out of these 209 seropositive patients 162 were males (77.51%) and 47 were females (22.49) with male to female ratio being 3.45:1. This is in agreement with studies by Gharami et al (1999) who reported male to female ratio of 3.6:1 and Mendiratta et al. (2004) who also reported 3.5:1. A similar study by Khandpur et al. (2001) reported higher male to female ratio of 5.05:1. Large number of cases in males in comparison to females is explained from the fact that in females the social stigma and discrimination prevents the women to seek help of STD clinic facility, which in turn contribute higher cases in males.

Age group wise majority of HIV positive patients were in the age group of 25-34 years (51.67%), followed by 21.53% in age group of 15-24 years and 20.58% in age
group of 35-44 years. Eight patients (3.83%) were in 45-54 age group, followed by 4 (1.91%) in 55-64 age group. One male patient (0.48%) was in the age group of 0-14 years. This one male patient was a 10 year old boy who was a case of child abuse. The patient was having perianal lesions of condyloma acuminata and molluscum contagiosum. He was the only youngest patient having mixed VDs and also seropositive for HIV.

Majority of the HIV positive patients (73.20%) belonged to the age group of 15-34 year in our study. This is similar to the study by Mendiratta et al. (2004) who reported maximum patients in the range of 15-34 years. Susan et al. (1998) and Gill et al. (2003) reported maximum patients in the age group of 15-30 years. Gharami et al. (1999) and Singh et al. (2001) reported maximum patients in 21-30 years. Pattanaik et al. (2005) reported maximum HIV patients in age group of 31-40 years.

Education wise majority of the patients (34.93%) had completed high school education, followed by primary in 33.49% of cases, illiterates in 20.1% of cases, higher secondary in 7.65% of cases and graduates and above in 3.83% of cases. Genderwise illiteracy was observed more in females (42.55%) compared to males (13.58%).

Studies by Gharami et al. (1999) reported illiteracy in 33.9% and Mendritta et al. (2004) in 55.6% of the cases. Poor knowledge of patients regarding STDs including HIV, low use of condoms along with stigma and discrimination are all collectively responsible for high prevalence of HIV. It is important that both literates as well as illiterates should get proper knowledge about the cause of the disease, its mode of transmission, and finally about the high risk sexual behaviour.
Occupation wise maximum HIV seropositive patients were observed in labourers (16.27%), followed by drivers (14.35%) (majority of whom were autorickshaw drivers), skilled workers (11.48%) and service class (11%). Majority of the females were housewives (19.14%) followed by (1.91%) in commercial female sex workers. The higher percentage in housewives is probably due to transmission from males who acquire HIV by contact with either sex workers or by other high risk behaviour ie. homosexuality.

In the present study high risk groups like drivers and commercial sex workers comprised of 16.26% of the cases which is similar to the study by Gharami et al. (1999) who reported 17.6% of cases in high risk group occupations like drivers and CSWs. Categories particularly like the diamond polishers reported high seropositivity of 5.74%, followed by Factory workers 4.78%, unemployed 4.31%, business 3.83%, farmers 3.35%, security/police/army 1.44% and categories like students, prison inmates, fruit vendors, restaurant workers and servants accounting for 0.48% each.

Majority of the patients in the present study were married (59.81%). Studies by Gharami et al. (1999) also reported maximum cases (67.8%) in married patients and Mendiratta et al. (2004) in 55.5% in married patients. High HIV seroprevalence in the married patients reflects the fact that majority of the married individuals are engaged in high risk extra marital contact including bisexual behaviour. This reinforces the need to target not only the unmarried (single) population for counselling on safe sexual practices but also in married couples.

Out of 162 HIV seropositive males, 109 males had exposure with commercial female sex workers accounting for 67.28% of total cases of HIV, followed by bisexual
exposure reported in 12.96% of the cases, exposure with an unknown in 8.64% of cases, 4 patients (2.47%) reported of having exposure with known person (i.e. either a girl friend or neighbour), 3 patients (1.86%) reported of having exposures with multiple partners (i.e. bisexual and also with eunuchs), while two (1.24%) were unmarried males who had only homosexual exposure during their entire lifetime.

One male patient (0.62%) was a 10 year old boy who was a case of child abuse having Perianal (Condyloma acuminata and Molluscum contagiosum) infection along with HIV.

Majority of the HIV seropositive patients (67.28%) in the present study reported of having exposure with commercial female sex worker. A similar study by Mendiratta et al. (2004) reported exposure with CFSWs in 66.6% of the cases.

Majority of the females (46.81%) were exposed from HIV positive spouse who had high risk behaviour and history of some STDs. Recent studies by the Joint UNAIDS/WHO Programme on HIV/AIDS (2005); highlights the fact that “A significant proportion of new infections is occurring in women who are married and who have been infected by husband who (either currently or in the past) frequented sex workers.

Seventeen females (36.17%) strongly denied any history of exposure outside marital contact. They were those females in whom either the spouse was Non reactive for HIV or spouse had not turned for HIV testing or due to social stigma and discrimination associated with STD including HIV these females were unwilling to disclose the correct nature of contact.

Four females (8.51%) in the present study were commercial female sex workers who had history of multiple exposure with their clients, while three females (6.38%)
reported of having exposure with their boyfriend or known person. One female (15 years of age) patient was a case of abuse; she was the youngest HIV seropositive female patient who had secondary syphilis at the time of diagnosis.

Among HIV positive patients, herpes progenitalis topped the list with 75 cases accounting for 35.89% of cases, followed by mixed VDs with 46 (22%) of cases, syphilis (S1 and S2) together accounting for 30 (14.36%) of the cases, condyloma acuminata 23 (11%) of the cases, molluscum contagiosum 16 (7.66%) of cases, chancroid 10 (4.78%) of cases, gonorrhoea 6 (2.87%) of cases, balanoposthitis 2 (0.96%) of cases and non gonococcal urethritis (NGU) with 1 (0.48%) of cases.

No case of HIV seropositivity was observed in cases of lymphogranuloma venereum (LGV). Similarly, no cases of HIV seropositivity was observed in granuloma inguinale as a single entity alone but 3 cases of HIV seropositivity were observed in cases of mixed VDs in which one of the STD was GI. Out of these 3 cases, two were males with one male having HP+GI and another having GI+MC and one in female having HP+GI as STDs.

In the present study, herpes progenitalis was the commonest STD seen in HIV positive patients accounting for 35.89% followed by Mixed VDs accounting for 22%. Similar study by Manjula et al. (2003) from Delhi who reported herpes progenitalis as the commonest STD seen in 23.4% of the patients followed by Mixed MVDs in 15.4% of cases. While study by Baruah et al. (1998) reported syphilis in 66.6% of cases followed by herpes progenitalis in 33.3% of cases. Gharami et al. (1999) reported (30.6%) in syphilis and HP in 28.8% in HIV positive patients. Studies from various parts of the
world have reported herpes progenitalis as the commonest STD seen in patients coinfected with HIV.

The prevalence of HIV among patients with STD were found to be 11.17% with 8.66% in males and 2.51% in females.

The HIV seroprevalence in the present study was 11.17%, which is similar to the studies by Gharami et al. (1999), Pondicherry, Solanki et al. (2003) from Jamnagar and Palival et al. (2003) from Udaipur who reported 11.7%, 13% and 12.4 % respectively and Kaur and Ahuja (2003) from Amritsar reported 14% seroprevalence of HIV among STD clinic attendees which is little higher than the present study.

In a study from Kolkatta (West-Bengal) by Jaiswal et al. (2003) also found an increasing trend of HIV seropositivity amongst STD cases which increased from 1.23% in 1994 to 11.11% in 2000 which is similar to our present study of 11.17% among STD patients. Sharma et al. (2002) from Delhi reported HIV seroprevalence to increase from 1% in a period from (1993-1996) to 9.7% in 2000 onwards group, i.e. 10 times increase in number of cases.

In a study from Mumbai by Pedhambkar et al. (2001) reported HIV seroprevalence in STD patients to be 31.18%. Mumbai being the commercial capital of India there is maximum migration from other states as well as from foreign countries resulting in promiscuous behavior therefore the incidence of HIV is bound to be very high.

Gulati (2002) from Faridkot, Punjab reported a seroprevalence of 7.38% and Devi and Sanyal (2002) from Cuttack (Orissa) reported 5.67% which is lower than the present study.
Out of 209 HIV positive patients, CD⁴ count was done in 34 patients having complaint of fever, weight loss intractable diarrhea or muco cutaneous lesions. Out of 34, 6 patients had CD⁴ count below 50 cells per μL, 3 had between 51-100, 8 had between 101 to 200 while remaining 17 had more than 200 cells per μL.

The present study highlights the epidemiological synergy between STDs and HIV infection. It is a complex problem involving socio-economic, behavioural and gender issues and therefore awareness regarding safe sex practices and avoidance of high risk sexual behaviour should be created.