REVIEW
OF
LITERATURE
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INTERNATIONAL EPIDEMIOLOGY

HIV infection / AIDS is a global pandemic, with cases reported from virtually every country. The current estimate of the number of cases of HIV infection among adults world wide is approximately 30 million, and among children it is approximately 1.1 million at the end of 1997. The WHO estimates that approximately 2.6 million HIV infected children have been born since the start of the HIV pandemic, and approximately half of these have developed AIDS and have died. The global projections for the total number of HIV infected individuals by the year 2000 AD ranges from 40-100 million. The HIV epidemic has occurred in “waves” in different regions of the world, each wave having somewhat different characteristics depending on the demographics of the country and region in question and the timing of introduction of HIV in to the population.

The actual reported cases of AIDS world wide are a gross under estimate of the true prevalence, mainly because the incomplete reporting system in certain developing countries.

Worldwide, the Joint United Nations Programme on HIV / AIDS ( UNAIDS) estimates that more than 30 million people are currently living with HIV/ AIDS ( JIMSA, July September 1998), which is likely to rise to 40 million, by the year 2000 AD. Every
day 16000 new HIV infections occur (including 1600 children). Approximately 1.5 million new cases of AIDS have been reported but the estimated figure may be as high as 6 million and is likely to rise to 10 million by the year 2000AD. Five million children under 10 years of age are likely to be orphaned by the year 2000 due to HIV related deaths of their mother. It is estimated that 5.8 million people have acquired HIV infection in 1977; out of these 5,90,000 are children, of the adults, over 40% were women, and over 50% of them were 15-24 years old.

While the HIV epidemic has reached its peak and has started declining in the developed countries especially the USA, in the Sub Saharan African countries it has reached a plateau and it likely to show decline by 2000 AD; and in South Asian countries including India it will continue to show an increase in its occurrence even beyond 2000 AD, Sub Saharan Africa as a whole has reached an unprecedented level of 7.4% of all adults infected with HIV. Thailand has about 7, 50,000 persons currently infected representing 2.3% of the adult population.

Currently, over 6 million people world over are through to be co-infected with HIV and TB. Through TB not associated with HIV, is still a bigger problem with 2000 million people infected than HIV associated tuberculosis, the latter is raising faster.

The major mode of transmission of HIV world wide is unquestionably heterosexual sex; this is particularly true in developing countries, where the number of infected men and women are approximately equal. Countries such as those in Sub Saharan Africa with a predominantly heterosexual mode of
transmission have been termed by W.H.O. as pattern II countries. In contrast, pattern I countries are those in which the vast majority of cases are among men who have sex with men or among intravenous drug users. Originally, the United States and Canada, most countries in South America, Western Europe, Scandinavia, Australia, and New Zealand were clearly pattern I countries. However, in most of these countries, including the United States, the pattern is gradually shifting, with a growing proportion of new cases among heterosexuals. Pattern III countries are those in which there are relatively few cases of HIV infections/ AIDS, and most of the infected individual have had contact with individuals from pattern I or II countries. A striking index of the spread of the epidemic is the fact that, just a few years ago, India and Thailand, along with other Asian countries, countries in Eastern Europe, North Africa, and the Middle East and certain countries in the Pacific were considered pattern III countries. Both India and Thailand have rapidly evolved into pattern II countries. If educational and Behaviour- modification programs fail in other pattern III countries, there is Not known doubt that many of them will evolve to patterns I or II.

NATIONAL EPIDEMIOLOGY

South Asia especially India is witnessing largest number of new AIDS cases and the epidemic is well established in this region according to a United Nations Populations Fund (UNFPA) study “the state of world population -1977”.

A total of 3,551 full blown cases of AIDS have been reported in our country till the end of May 1997 since the first
case was reported in 1986. According to NACO (National AIDS Control Programme), a total of 56,409 people have been found to be HIV positive in this country. Estimated figures for infected persons are 1.78 million with unofficial figures ranging between 3 to 5 million, projection by the year 2000 AD is of 8 million HIV infected and 1 million AIDS cases. The study of NACO reveals that the disease is no more confined to the high risk groups like sex workers, homosexuals or intravenous drug users but has spread among the general population. It has also found that 89% of the AIDS patients were in the group of 15-45. Only Arunachal Pradesh was not affected by the disease but the disease was widespread in Tamil Nadu, Manipur and Maharasthra. Accordingly it has been estimated that India is just 10 years behind an epidemic.

The first HIV seropositive individual in India was identified in 1986 among the prostitutes of Madras city. First AIDS case in India was reported in May 1986 and second case, a hemophiliac was reported a month later. Since 1985 till 31 August 1994, 803 full blown AIDS cases have been reported to the Ministry of Health & Family Welfare from 32 States / Union Territories of the county.

A survey conducted by the National AIDS Control Organization has found a prevalence rate of over 1% in five states of India – Tamil Nadu, Karnataka, Andhra Pradesh, Maharasthra and Manipur, while in the remaining states it was found to range between 0.1 and 0.5 percent. Consequently, for country as a whole, the survey has shown the prevalence rate to be less than 0.5%. The study has found the prevalence rate
to be as high as 2.4% in Maharashtra, followed by 2.3% in Karnataka, 1.58% in Andhra Pradesh and 1.4% in Tamil Nadu which is alarming to say the least.

ASSOCIATION OF TUBERCULOSIS AND HIV

INTERNATIONAL STUDIES

Pitchenik et al (1984) reported, after reviewing records of tuberculosis and AIDS cases in Dade country, Florida, 27 Tubercular cases out of 45 Haitian with the syndrome but in 1 of 37 non- Haitian with the syndrome. Among 27 Haitians with the syndrome and tuberculosis, 19 had extra pulmonary tuberculosis, whereas among 286 Haitian patients with tuberculosis, only 56 had extrapulmonary tuberculosis.

Pitchenik et al (1985) reviewed X- rays recorded of 23 adults AIDS patients with culture proved tuberculosis, 17 including 8 with DT had positive serum of bronchial culture, 10 patients (59%) had hilar and mediastinal lymph nodes, localized pulmonary infection in middle or lower field in 5 patients (29%), localized pulmonary infection involving an upper lobe in 3 patients (18%), and diffuse miliary or interstitial infiltrates in 3 patients (18%). No pulmonary infiltrates in 6 patients (35%) and No abnormality in 2 patients (12%). Pulmonary cavitation was not seen. Only 1 patient had chest X- ray typical of adults’ onset reactivation tuberculosis.

Mann j et al (1985) from Zairian Deptt. of Public Health detected 53(33%) seropositive case out of 159 confirmed pulmonary tuberculosis patients in Tuberculosis Sanatorium, Kinshasa, Zaire. Out of this 96 were men (60%) and 63(40%) women. The median age was 29 years (ranges 9- 67 years).
Lymphadenopathy on physical examination was equally common in HTLV – III LAV seropositive and seronegative pulmonary tuberculosis patients (35% Vs. 32%).

**Sundram G et al (1986)** studied 136 patients with AIDS of whom 102(75%) were intravenous drug abusers, of these 136 patients of AIDS (21.3%) were tuberculosis patients. Tuberculosis was more common among Haitian (4/8), and intravenous drug abuser (24/102) than among homosexuals who had not used drug (0/22).

**Colebunders R et al (1987)** found in a hospital in Zaire, 7 of 16 patients with proven tuberculosis (44%) and 18 of 33 with suspected TB (59) were found to be HIV seropositive.

**Chaisson RE et al (1987)** reported 35 AIDS cases, out of 287 tuberculosis cases of non - Asian Born males (15-60 years) Lung was the most frequent site of tuberculosis in both AIDS and non AIDS patient. 60% of the AIDS group had at least 1 extrapulmonary site of disease compared to 28% of non – AIDS patients. Non – significant tuberculin test were more common in AIDS patients (14 of 23 patients tested) than in non – AIDS patients (12 of 129 patients tested). Chest radiographs in AIDS patients showed predominantly, diffuse or miliary infiltrate (60%), whereas non- AIDS patients had predominantly focal infiltrates and / or caviatation 68%.

**D.T. Mcleod et al (1988)** studied prospectively 37 HIV seropositive patients (26 malé, 11 female, mean ages 27). HIV was heterosexually transmitted and pulmonary tuberculosis was the commonest disease found in almost one third of patients (12 of 37).
Kritski et al (1988) reported 13(3.1%) HIV seropositive patients out of 423 patients (356 males and 67 Females) with active pulmonary tuberculosis.

Colebunder RL et al (1988) reported high HIV seroprevalence in sanatorium patients with early pulmonary tuberculosis (22/46 (48%) and suspected pulmonary tuberculosis patients (60/132(45%)) than in patients with bacteriologically confirmed pulmonary tuberculosis (94/287 (33%). Mycobacterium isolation rates from sputum were similar in HIV seropositive (28.34 (82%)) and HIV seronegative patients (135/ 159(85%).

Rieder HL et al (1989) reported 1858 cases of AIDS. Out of which 159 (8.6%) had tuberculosis. Out of 8455 cases of tuberculosis, 154 (1.8%) also had AIDS.

Modilevsky T (1989) reported tuberculosis in 39 cases out of 94 patients with HIV. Chest X- ray findings suggested mycobacterium infection in 24 (83%) of 29 patients with pulmonary tuberculosis . Sputum smear revealed AFB in 19 (83%) of 23 patients with pulmonary tuberculosis.

Van Deutekom (1989) reported tuberculosis in 18 (8%) of 225 AIDS patients. The most frequent high risk in AIDS tuberculosis patients was IV drug abuse. Chest X- ray was frequently atypical and there were more extrapulmonary lesions in comparisons to patients with tuberculosis without AIDS.

Theur et al (1990) performed HIV serology in non- Asian born patients 18-65 years old with newly diagnosed tuberculosis. Out of the 60 eligible patients, 17(28%) were found seropositive. Risk of HIV was associated with
homosexual contact, intravenous drug use, or both. Site of disease and tuberculin reactivity did not differ significantly in the two groups. Tuberculosis was the first serious opportunistic infection in all patients with HIV.

**Long et al (1991)** studied chest roentgenograms of 225 HIV tested adult Haitians with bacillary positive pulmonary tuberculosis. There were 67(29.8%) HIV seropositive and 158 (70.2%) HIV seronegative patients. Intrathoracic adenopathy alone was more common and parenchymal infiltrate less common. HIV seropositive patients with AIDS were significantly more likely to have a chest radiographic pattern consistant with primary tuberculosis (80%) than HIV seropositive patients without AIDS (30%).

**Zajozkoska et al (1991)** from Jan 1, 1989 to July 1991, 193 patients with HIV infection were treated at the Deptt. of AIDS & Infectious Disease Hospital in Warsaw and Tuberculosis was diagnosed in 110 (57%) cases.

**Brudney and Dobkin (1991)** studied prospectively 224 patients with tuberculosis admitted to a large public Hospital in New York, 79% were male with high rates of alcohol use 53%, I.V. drug abuse 64% and homelessness 68%. Half the patients had AIDS related complex or were HIV antibody positive.

**Dupon & Ragnaud(1992)** found 123 (2.1%) tuberculosis patients (121 of M. tuberculosis and 2 of M bovis) among 5730 HIV seropositive in out – patients. Tuberculosis was pulmonary in 53 patients (43.1%) extrapulmonary in 36 patients (29.3%) and combined in 24 patients (27.6%).
Pignatelli et al (1992) studied chest reentgenogram of 14 pulmonary tuberculosis patients (10.1) out of 139 patients with AIDS. Hilar lymph nodes in 4 cases (28.6%), isolated lymph nodes in 2: associated with parenchymal involvement in 2 patients, acute alveolar tuberculosis was seen in 4 cases (28.6%) with excavation in ¾ (21.4%). Linear and reticular pattern of tuberculosis were found in 4 patients (28.6%), military involvement in 1 case 9(7%) and extrapulmonary adenopathy in 4 patients (18.6%) in 4 patients (28.6%) chest X-ray finding were negative.

Allen S et al (1992) in an attempt study the incidence of tuberculosis in HIV infected and uninfected urban Rwandan women, found tuberculosis in 20 out of 460 HIV positive and in 2 of 998 HIV negative child bearing women.

Scialpi et al (1993) studied initial and follow up chest radiographs of 31 patients with the AIDS and found M. tuberculosis in 7 patients infiltrating cavitating lesion and multiple interstitial well – defined nodules less than 10 mm diameter were seen only in M. tuberculosis infection.

Sy et al (1993) studied epidemiologic features of tuberculosis patients with AIDS or HIV infection and found that have more extrapulmonary sites and more anergic reaction to tuberculin test.

Beauliev et al (1993) in a retrospective study compared clinical and bacteriological characteristics of HIV infected and seronegative patients in France. Out of 67 tubercular patients’ 35 were HIV positive. Disseminated tuberculosis predominated in HIV positive as opposed to pulmonary tuberculosis in HIV
negative. Tuberculin test was more often positive HIV negative patients than in HIV positive ones (65.6% versus 17.1%). Direct bacteriological examination of the sputum was positive more frequently in HIV negative than in HIV positive patients (56.2% versus 22.8%).

Elliott et al (1993) reported 72 HIV seropositive patients out of 109 tubercular patients proved by sputum culture for M. tuberculosis. Of these 43% of the HIV positive had a negative sputum smear, compared to 24% of the HIV negative cases.

Diperri et al (1993) made a retrospective investigation to compare – occupational risk of tuberculosis in health care workers assisting HIV positive and negative patients with active tuberculosis. 7 cases occurred in those who cared for 85 HIV infected tubercular patients while 2 cases occurred in staff members who took care of 1079 HIV negative tubercular patients over the same period.

Navarro et al (1993) analyzed 215 patients dually affected by tuberculosis and HIV infection. Tuberculosis was located in the lung in 108 cases (50.23%), in 74 cases but of the lung (34.14), and in 33 cases there was intrapulmonary as well as extrapulmonary affection (15.34%).

Carcaba et al (1993) described clinical characteristics of 120 patients in the Austria region who had a tuberculosis diagnosed in any localization belonging to a series of 570 patients infected by HIV. Tuberculosis was pulmonary only in 44, in 36 it was extrapulmonary and in 52 disseminated. Most frequent risk factor was IV drug use.
Monno et al. (1993) studied problems in treating 31 tuberculosis patients with HIV infection and found 5 patients (16%) had pulmonary tuberculosis, 15 (48%) had both pulmonary and extrapulmonary involvement and 11 (36%) had extrapulmonary disease alone.

Fernandez – Revuelta et al. (1993) described 423 cases of pulmonary tuberculosis out of which 54 were seropositive. Of these 54 cases, 8 cases (14.8%) had miliary profile and radiology was normal in 7 cases (12.9%) in addition, they observed extrapulmonary affection in 23 cases (42.6%).

Kritski et al. (1993) studied 567 patients with active pulmonary tuberculosis in Rio de Janerio, Brazil by testing blood for HIV antibodies. For chest radiographs, a significant association was found between HIV infection and the occurrence of atypical images and hilar and / or mediastinal adenopathy and absence of cavities. A PPD skin test in duration of < 5mm was identified in 53% of HIV positive and 31.3% of HIV negative cases.

Mosznki (1993) studied sero prevalence of HIV infection in tubercular patients of Kweneng District, Botswana. 45 of 214 patients (21%) were HIV positive. No significant differences were found between HIV positive and HIV negative patients with regard to clinical type of tuberculosis.

Kurutepe et al. (1993) in the Chest Hospital, Hebelia, Istambul, screened 5000 tuberculosis patients who were not at risk and 340 patients who had at least one predisposing factor for AIDS and found one seropositive patient in each group.
Monica Barbosu et al (1993) investigated 358 tuberculosis patients (308 adults, 50 children) for HIV antibodies, 64% of adults and 8% of the children were seropositive. These figures were same as of the HIV seroprevalence in he studied area.

Batungwanayo et al (1993) reported 377 tuberculosis patients Out of which 334(8.6%) were HIV positive and 43 (11.4%) HIV negative. Extrapulmonary tuberculosis was more in HIV positive (186/334, i.e 55.7%) than in HIV negative (17/43, 39.5%). In patients with pulmonary tuberculosis the middle and lower lobes were significantly more involved in HIV positive than in HIV negative patients (59/198, 29.8% Vs. 28,10.7%) whereas cavities were more frequently seen in HIV negative patients (15/28,53% versus 53/198, 26.7%). Anergy to PPD was significantly more frequent among HIV positive patients compared with HIV negative patients 203/274, 74% versus 11/33, 33%).

C Luo et al (1994) studied 120 children (1 month -15 year) with a clinical diagnosis of tuberculosis and 167 control for HIV antibodies. The overall HIV type I seroprevalence rate in children with tuberculosis was 55.8% (67/120) compared to 9.6 % (16/167) among control group. Common clinical presentation among children with tuberculosis were bronchopneumonia (45/162), miliary tuberculosis (30/162) and tubercular lymphadenopathy (21/33). There was no significant difference in clinical presentation of tuberculosis between the two groups.
Houston et al (1994) in a cohort study conducted in Harare, Zimbabwe tested 1434 tubercular patients for HIV infection. He found seroprevalence of 45 % (647/1434). Among adult tubercular patients (<15 years) a seroprevalence of 47 % was found (610/1303). Peak HIV seroprevalence was in 25-34 years age group. In adults, with pulmonary tuberculosis a rate of sputum smear positivity was not significantly different between the HIV seropositive and seronegative.

Abuoya et al (1995) compared chest radiographs of consecutive HIV-1, HIV-2 positive and seronegative patients with pulmonary tuberculosis. HIV -1 infected patient were significantly more likely to have extrapulmonary tuberculosis than were HIV-2 infected or HIV negative patients (20% Vs 8% and 9%). Among patients with pulmonary tuberculosis, No differences were observed in the rates of specific abnormalities on chest radiograph between HIV-1 and HIV -2 infected patients. Both HIV-1 and HIV -2 infected patients had a higher frequency of pleural effusion than did HIV negative patients (8% and 9% Vs 4%) among HIV infected patients with CD4+ count of > or = 400/mm³ and<200/mm³, respectively, the proportions with non- cavitary infiltrates and hilar adenopathy increase significantly (33% to 44% to 58% and 0% to 14% to 20 %), while the proportion with cavitary lesion decreased significantly (63% to 44% to 29%).

Post et al (1995) investigated the relationship between the radiographic appearance of pulmonary tuberculosis (PTB) in HIV infected patients and CD+4 T – lymphocyte count. Upper zone infiltrate typical of pulmonary tuberculosis reactivation was
present in 18 patients out of 150 patients. This was associated with early HIV infection (mean CD4+T-cell count 389) and had 78% positive predictive value for identifying patients with >200 CD+4 T-lymphocytes/μl. Pleural effusion was present in 32 patients and it occurred over a wide intermediate range of CD+4T cell count (mean 185). Lower or midzone infiltrates, adenopathy, interstitial pattern or normal radiograph occurred in 136 patients and were associated with advances HIV disease (mean CD+4T cell count 105).

Leung et al (1996) determined the difference in the CT appearance of pulmonary tuberculosis (TB) between patients with and without HIV infection. Seropositive patients had a higher prevalence of lymphadenopathy at chest radiography, the seropositive patients had a lower prevalence of consolidation, cavitation and post primary pattern at CT, HIV seropositive patients had higher frequency of Miliary and extrapulmonary disease.

INDIAN STUDIES

Tripathi et al (1992) reported 11 cases of tuberculosis of 169 HIV-1 seropositive at Pune.

Shivarman et al (1992) screened patients, with atypical radiographic pattern harbouring multi drug resistant bacilli, and with fairly limited radiological lesion whose general condition showed unexplained deterioration, admitted to the T.B. Sanatorium, Pondicherry during the period 31.01.1990 to 30.04.1991 for AIDS out of total of 225 pulmonary tuberculosis patients thus screened for HIV antibodies, 6 were found seropositive and all were sputum positive for AFB. Out of these
6 cases, 3 had cavitation, 2 had hilar adenopathy and 2 had diffuse infiltrates.

Arora et al (1993) studied 572 consecutive patients attending clinical of the Department of T.B. and Chest Disease, Jawahar Lal Institute of Post Graduate Medical Education and Research, Pondicherry, during the period from March 1990 to December, 1992. Patients included in the study were proved cases of extrapulmonary tuberculosis, sputum positive patients and sputum smear negative patients having extensive or limited atypical disease with history of HIV risk factors and / or unexplained loss of weight and / or diarrhea. Out of these 572 patients tested for HIV -1 antibodies, 20 (15 males and 5 females) were found seropositive. 12 patients were proven and 4 were suspected cases of tuberculosis, 2 patients were diagnosed as having interstitial pneumonitis. No diagnosis could be established in remaining 2 patients. 6 of the 12 proven tubercular patients were sputum positive for AFB, 5 had bilateral infiltrative lesion with or without cavitation and had pleural effusion with pharyngeal squamous cell carcinoma leading to pharyngocutaneous fistula. History of heterosexual promiscuity in 13 out of 15 males and in none of 14 females was present. Pulmonary tuberculosis patients showed typical bilateral upper zone infiltrative extensive lesion with or without cavitation whereas suspected pulmonary tuberculosis patients showed upper zone exudative infiltrative lesions.

Anuradha et al (1993) screened patients who attended out patient Department of Thoracic Medicine, Government General Hospital Madras, included in the study were adults (18
year and above): (1) attending for first time with respiratory symptoms (2) pulmonary or extra pulmonary tuberculosis patients on ATT (3) with history of ATT and complaining of fresh symptoms. In all, 760 blood specimens were cases of tuberculosis (392 pulmonary tuberculosis, 39 extrapulmonary tuberculosis, 15 treated pulmonary tuberculosis, 10 pleural effusions).

Of the 392 pulmonary tuberculosis patients, 3 were confirmed HIV seropositive (0.77). No HIV positive cases could be detected in other sub group of tuberculosis and non tuberculosis respiratory disorder. All HIV positive patients were sputum smear positive for AFB and culture proved. All were PPD negative and chest X-ray showed bilateral lesion with cavitation in upper lobe.

Mohanty et al (1993) screened 2371 patients (1759 males and 612 females) admitted for respiratory diseases to the respiratory ward of the J.J. Hospital, Bombay between 1st November, 1988 and 31st October, 1991 for HIV infection. 85 were found positive but on repeat ELISA only 64 were positive. Of the HIV positive patients, 57 pulmonary tuberculosis (37 males/1759, 20 females/612) out of 1950 tuberculosis patients.

Majority of patients (HIV positive) (58/64) were in the age group between 21-50 years with maximum number in 21-30 age group (36/64). Of the total HIV positive 53 (37 males, 16 Females) had multiple heterosexual partners, 2 (2 males) had multiple homosexual partners, 3 (2 males, 1 female) gave
history of use of blood and blood products, 6(2 males, 4 females) were indeterminate.

31.59% of HIV seropositive pulmonary tuberculosis patients were sputum smear positive as compared to 73.12% of 1983 HIV seronegative tubercular patients (32 extra pulmonary tuberculosis patients included).

Like wise on chest X-ray, cavitation was found in 52.63% versus 54.25% exudative in 5.26% versus 5.92% fibrotic in 31.57% versus 38.20% miliary of pleural and 7.01% versus 0.79%. Mediastinal lymphadenopathy in 3.5% versus 8.4% of the 1983 HIV seronegative tubercular patients. 94.42% were PPD positive (1 TU PPD with tween 80) while 36 (63.16%) of the HIV positive were PPD negative.

Mohanty et al (1994) reviewed the old patients (studied between 1st November, 1988 to 31st October, 1991) and the new patients (between 1st November, 1991 to October, 1993). Of the total 205 HIV positive cases 182 (5.89%) had pulmonary tuberculosis out of 3090 tubercular patients thus screened. Of these 182, 52.19% were PPD positive as compared to 93.12% of 2909 seronegative tubercular patients. Similarly for AFB positivity it was 47.08% versus 70.12% like wise on chest X-ray cavitary lesion was found in 56.04% versus 57.0% exudative in 21.98% versus 20.60%, miliary in 1.64% versus 1.0%. Pleural effusion in 5.49% versus 3.79%. mediastinal adenopathy in 2.75% versus 2.0% hydropneumothorax in 2.19% versus 5.21%.

Soloman et al (1995) studied the trend of HIV infection in patients with pulmonary tuberculosis in South India. HIV
seropositivity was found to rise significantly from 0.7% in 1991 to 1993 (P<0.05).

Soloman et al (1995) studied the trend of HIV infection in patients with pulmonary tuberculosis in South India, HIV seropositivity was found to rise significantly from 0.7% in 1991 to 3.4% 1993 (P<0.05).

Mohanty et al (1995) stated that seropositivity in tuberculosis patients increased from 2.56% in 1988 to 10.15% in 1994, the rate being more or less the same for the last three years. Heterosexual promiscuity was the major risk factor (95.95%) and commercial sex workers accounted for 70% of the females' tuberculosis patients with HIV infection.

**HIV SEROPPOSITIVITY IN HIGH RISK INDIVIDUALS**

H..A. Kamat et al (1993) Studied 599 patients with various STDs IN Bombay from 1987 to 1989. 39 patients (5.2%) were found to be HIV-1 antibody seropositive by the ELISA and Western blot test. An increase in HIV-1 antibody seropositivity among both male and female patients was detected from 1987 to 1989 and seropositivity was maximally associated with Condylomata acuminate, Genital herpes and Chancroid.

R.C. Mutter et al (1994) tested 87 of the 556 prisoners continuously incarcerated since 1977 in the Florida Department of Corrections. Of these 18 inmates (21%) were found to be positive for HIV infection. 8 of these individuals had No HIV related conditions, and 10 had HIV- related symptoms. The result presents strong evidence for intraprison transmission of HIV infection.
E.A. Simoes et al (1993) screened 412 prostitutes in remand homes in 3 cities and 3 towns in Tamil Nadu state and then tested all new entrants to one home in Vellore from 1986 to 1990. The proportion of women infected (10 of 102) from the port city of Madras was greater than from all other cities or towns combined (4 of 310). The only significant risk factor for development of HIV-1 antibody was exposure to foreigners after correcting for the influence of city.

A.N. Malviya et al (1994) studied 302 long distance truck drivers and 3 were found to be infected with HIV. In this study a large numbers of truck drivers were having sex with the prostitutes in rural areas along the highways of India. The Truck drivers could play an important role in the spread of the infection in rural India.

N. Bhushan et al (1994) studied the prevalence of HIV infection among blood donors for the five year period from April 1988 to March 1993. All donors were patients' relatives or volunteers; no paid commercial donors were accepted. Each year between 14,084 and 15,544 blood samples were screened by ELISA and those found reactive were tested by western blot. The prevalence rates were 1.5 per 1000 (1988-89), 1.1 per 1000 (1989-90 and 1990-91), 1.9 per 1000 (1991-92) and 3.1 per 1000 (1992-93). These data suggest that the prevalence of HIV in blood donors is increasing and this could be a reflection of the rising prevalence of HIV infection in the general population.

Gangakhedhkar et al (1997) assessed women attending STD clinics in Pune for STD and HIV infection from May 1993 to July 1996. Of 916 women enrolled, 525 were ESWs and 391 were non-FSWs. Prevalence of HIV in FSWs and non-FSWs was 49.9% and 13.6% respectively.