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A CLINICAL AND BEHAVIOURAL STUDY OF HIV INFECTED SUBJECTS—A COMPARISON WITH STD SUBJECTS[1]

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SUMMARY

Eightyfive HIV seropositive subjects (M: 42; F: 43) were compared with an equal number STD subjects negative for HIV. They formed 1.6% of the total number (N=5287) screened in the STD OP. Heterosexual transmission was predominant. A significantly higher promiscuity and a larger number of sex partners and contacts were observed in the female but not the male HIV subjects. The ages at first coital experience were similar in both the groups. There was no difference in the occurrence of either STDs or psychiatric illness at index examination between the two groups. The symptom profile of psychiatric illness in the HIV subjects did not differ from that of the controls. The HIV subjects had more of physical diagnoses than the controls. The psychological responses to the 'disclosure' of seropositivity were noted. The closeness of HIV and STD groups on many factors and its implication for management and health education are commented upon.

The World Health Organisation estimates that currently atleast 5 million people are infected world wide with the HIV virus. By December 31st 1989, 203,599 AIDS cases were reported to the WHO by 152 countries (World Health Organisation, 1990). The first indication of HIV infection in India came in March 1986 when sera from 10 prostitutes from a Vigilance Home in Madras were detected seropositive by ELISA and Western Blot Test (Simoes et al., 1987; John et al., 1987). Subsequently the first 2 deaths from AIDS were reported. The source of infection in them was outside India : one through blood transfusion and the other through factor VIII infusion in the USA (Lele et al., 1986; Udwadia et al., 1987).

The Asian continent was the last but the least affected so far by HIV infection (Simoes et al., 1987). However, a WHO study warns a tenfold increase from 500 to 5000 of AIDS cases in Asia between 1989 and 1991 (Chin et al., 1988).

The Asian situation is perplexing since human beings are not known to have any innate resistance to HIV infection. The infection, once acquired, 'Stays' through the rest of one's life (Anderson and Medley, 1988). The relatively benign course of Asian AIDS is attributed to the recency of the entry of infection into the continent (perhaps in the early 1980s) in contrast to Africa and the the developed countries (Simoes et al., 1987; Mann and Chin, 1988). Whether such 'benign' attributes of the virus and the less malevolent progress of the infection

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will endure will be proved during the next few years. In the national serosurveillance of high risk groups being carried out by Indian Council of Medical Research, New Delhi, 2167 individuals were detected seropositive among 461 118 screened. There were 44 cases of AIDS (Indians 32 and Foreigners 12). The rate of seropositivity was estimated at 4.7/1000 (ICMR, 1990). Until recently, in India the prostitutes were believed to be the 'sentinels' of infection (Kumari et al., 1986; Simoes et al., 1987). Now, the blood donors, intravenous drug abusers and infected pregnant mothers contribute to the reservoir of infection. Earlier claim of the absence of HTLV III antibodies in blood donors and recipients in India appears now to have been premature (Simoes et al., 1985). The report from ICMR for the period April 1, 1989 to March 31st, 1990, indicates that 3613 blood samples were ELISA positive out of 2, 17, 428 samples screened (ICMR, 1990). Though similarities between HIV hepatitis B virus infection and sexually transmitted diseases like syphilis have been recognised, no significant data in this area available from India (Ramalingaswamy, 1989).

The position statement on AIDS of American Psychiatric Association (1987) is of significance: "Psychiatrists have a responsibility to educate themselves, their patients and their communities with regard to the neuropsychiatric and, psychosocial aspects of HIV disease including its biological and psychiatric, clinical manifestations, the psychosocial reactions to the illness and appropriate treatment modalities available to the patients. To this end psychiatrists should integrate their efforts with those of other medical disciplines and work conjointly with them". The present communication is a modest attempt in this direction in the Indian context.

Aims and Objectives

The objectives were to study the age and sex distribution, marital status, sexual practices in general and of high risk behaviours in particular (for HIV infection), 'knowledge' of AIDS and the occurrence of physical (STD and non STD) and psychiatric illness and the psychological responses following disclosure of positive sero status in the HIV seropositive cases.

Material and methods

Consecutive new registrants (N= 5287; M=3981; F=1306) in the OPD of Dept. of sexually transmitted disease, Govt. Rajaji Hospital, Madurai, India were screened by the Research team of the Centre for Advanced Research on 'Health and Behaviour' Indian Council of Medical Research, Madurai Medical College from 1st November 1988 to 31st July 1990. Eightyfive (M=42; F=43) including one French foreigner, identified as seropositive by ELISA and Western blot formed the material for study. Serotesting was done on the registrants at the STD Department as a part of the Surveillance Programme by the ICMR AIDS Surveillance Centre, Department of Virology, Madurai Medical College. On receipt of seropositivity result, each of them was contacted by either house visit/or by letter to report at the ICMR Research Centre or/and STD Department. There were three deaths : one from AIDS and two unrelated to AIDS (myeloid leukemia, cirrhosis of liver). The remaining 82 subjects were asymptomatic carriers, manifesting neither AIDS nor AIDS related symptoms. Eightyfive matched controls were enlisted from the STD OP simultaneous with the collection of HIV cases. The controls were matched for age, sex, socioeconomic status, marital status and STD

in general. Since the study included female subjects from the Vigilance Home and the Prison, equal number of female controls were drawn from these locations. The controls were not matched for psychiatric illness, non-STD illness and sex behaviour. The HIV seronegativity characterised the controls.

The HIV and control subjects were examined by the STD Specialist, Psychiatrist, Neurologist and a General Physician. From those unwilling for clinical examination and investigation the data collection was incomplete. The DSM III R (APA, 1987) criteria were followed for psychiatric diagnosis. Data on sexual history included the age at first coital experience, promiscuity including number of partners and contacts, pre and extramarital sex, use of contraceptive measures, homosexual and bisexual activities. The data was collected through semistructured interview with each subject of the study and control group. They were enquired on their knowledge of AIDS. This was elicited through a simple questionnaire prepared for the purpose. The schedules administered included Beck's Inventory for Depression (Beck et al., 1961), Beck's Hopelessness Scale (Beck et al., 1979), Hamilton's Rating Scale of Depression (1960) and Anxiety (1959). The investigations included skiagram chest and Brain Scan (not done on controls) besides routine haemogram, ESR, and VDRL. The fact of HIV seropositivity was made known to the subjects and in this process some of the implicit features were also conveyed to them : they are likely to suffer from frank AIDS symptom any time during the next 10 years or less; at present there is no drug for the disease and of the possibility of drug becoming available in course of time; presently they did not suffer from the disease, but they harboured the virus and have a potential to infect others. The spouses and the children of the HIV subjects (wherever possible) were subject to HIV serotesting which was a part of ICMR Surveillance Programme.

Results

Incidence:

Eightyfive (M:42; F:43) seropositive subjects out of a total of 5287 registrants screened (M=3981; F=1306) yielded a rate 1.6% among the STD population.

Age and marital status:

The ages of the HIV subjects varied from 18-57 for both sexes. The youngest and the oldest females were 18 and 40, and among the males 18 and 57. Those between 20 and 29 years formed 2/3rd of the sample (65%). Fortyone were married, nine separated, five divorced and two widowed. Thirtyeight subjects had childern. Twentyeight were single. In three instances, both husbands and wives were HIV seropositive. The prostitutes comprised 53% (N=23), of the total female subjects (N=43). Twentytwo housewives were living with their husbands. The control subjects were of the same age, sex group and marital status.

Sexual history:

(*a*) *Age at first coital experience:*

HIV Group: The ages at first coital experience in the HIV subjects ranged from 12 to 28 years for both sexes. In the males it was from 12 to 28 and in the females 12 to 24. Fortytwo percent of subjects have had their first coital experience between 15th and 19th year and 27% between 20th and 24th year. In 16% the experience was earlier than 15th year and in 5% later than 25th year.

Control Group: The ages at first coital experience extended from 11 to 23 years for both sexes and the youngest male was 13 and the oldest 23 years and youngest female 11 and oldest 23 years. Sixty percent of the controls had their first coital experience between 15 and 19 while 21% between 20 and 24. In 14%, it was before 15th year.

(*b*) *Promiscuity, contacts, partners:*

HIV Group: History of promiscuity was forthcoming in 69 subjects (84%; M: 95; F: 73%). The partners numbered from 2 to 200+ for both sexes (breakup: Males: 2 to 150, Females: 4 to 200+) with the mean of 47.923±38.51 (M:37.241± 36.23, F: 61.81±40.79). The frequency of contacts was between 4 and 300+ for both sexes (M: 4 to 200, F: 8 to 300+) with the mean of 77.029±65.36 (M: 49.72±47.93, F: 112.53±78.23).

Control group: Promiscuity was elicited in 55 (69%) (M: 95%, F: 45%); the number of partners ranged from 2 to 100+ (M: 2 to 60, F: 5 to 100+) with the mean of 26.735±26.43 (M: 24.842±22.51; F: 31.23±30.47); the frequency of contacts between 5 and 150+ (M: 2 to 75; F: 10 to 150+) with a mean of 47.882±45.3: (M:42.73± 40.27; F: 57.47±51.67).

(*c*) *Contraceptive practices:*

HIV Group: Twentythree women (11 prostitutes and 12 housewives) had undergone tubectomy and one male has had vasectomy. The husbands of two of these women were also positive for HIV test. The tubectomy was undertaken with the consent of the husbands by seven women while the husbands of five were unaware of the permanent contraception.

Control Group: Sixteen women had undergone tubectomy and one male has had vasectomy. The data on sex behaviour in both the groups are offered in Table I.

TABLE I—*Sexual behaviour in HIV and control groups*

	HIV	Control	t/X^2 value
Age at first coital experience:	(N=79)	(N=79)	
For both	17.96 ±3.52	17.82 ±3.52	t=0.26
For Males (S:40, C:38)	18.65 ±3.61	18.21 ±3.23	t=0.81
For Females (S:39, C:41)	17.05 ±3.26	17.45 ±3.68	t=0.5
Promiscuity:	(N=82)	(N=80)	
For both sexes	69	55	X^2=5.35[a]
For Males	39	36	X^2=0.19
For Females	30	19	X^2=6.69[b]
Among those promiscuous: Mean number of partners:	(N=65)	(N=54)	
For both sexes	47.92 ±38.51	26.73 ±26.43	t=3.40[c]
For Males (S:29, C:16)	37.24 ±36.23	24.84 ±22.51	t=1.75
For Females (S:29, C:16)	61.81 ±40.79	31.23 ±30.47	t=2.56[a]
Among those promiscuous: Mean No: of contacts:	(N=65)	(N=54)	
For both sexes	77.02 ±65.36	47.88 ±45.32	t=2.75[b]
For Males (S:36, C:38	49.72 ±47.93	42.73 ±40.27	t=0.67
For Females (S:29, C:16)	112.53 ±78.23	57.47 ±51.67	t=2.47[a]

S-Study, C-Control, a-$p<0.05$, b-$p<0.01$, c-$p<0.001$.

Condom was never used by any subjects in either group. No case of homosexual behaviour (alone) was encountered in both the groups.

(*d*) *Psychiatric Disorders:*

HIV Group: Fiftyone percent of the subjects (N=33) among 65 assessed were currently diagnosed as manifesting one or more psychiatric disorders. They comprised: Depression, Schizophrenia Paranoid, Anxiety Disorder, Substance Abuse, Alcohol Abuse, Mental Retardation. The BDI ratings were 'mild' (8) 'mild-moderate' (5); 'Moderate-severe' (6) and 'severe' (4). On BHS, 47 subjects had 'mild', 'moderate', or 'severe' rating, while 18 were in the 'nil/minimal' category. Of twenty three cases of Depression, 21 displayed 'mild-moderate' and 'severe' degree of hopelessness.

Control group: The psychiatric diagnoses figured in 41% (N=32) among 78 assessed. These were Deprssion, Schizophrenia, Substance Abuse, Anxiety Disorder, Mental Retardation, Alcohol Abuse. The BDI and BHS ratings were not dissimilar from the HIV group.

In none of the cases was there any symptom with a content related to AIDS (eg) delusions, hallucinations, guilt symptoms. The psychiatric disorders were no different from those seen in psychiatric practice and there was nothing special about them although occurring against the background of HIV infection.

No statistical significant difference was found between the two groups in respect of psychiatric disorders (Tables II & III).

STD Diagnoses:

The details are offered although the subjects were controlled for STD and both the groups were drawn from STD OPD.

HIV group: (N=61, 81%) The diagnoses numbered 72 and some subjects carried more than one diagnosis. The diagnoses in HIV subjects were as follows: syphilis (33), lymphogranuloma venereum (3), gonorrhoea (4), chancroid (4), trichomonas vaginalis (12), genital herpes (5), genital warts (8) and pelvic infection (3).

Control group: (N=53, 78%) Some subjects carried more than one diagnoses which totalled 67. The diagnoses were as follows: syphilis (26), lymphogranuloma venereum (2), gonorrhoea (5), chancroid (3), trichomonas vaginalis (15),

TABLE II—*Psychiatric disorders in HIV and control groups*

Psychiatric disorders	(DSM IIIR)	HIV (N=33,51%)	Control (N=32,41%)
Alcohol abuse	303.90	26	28
Depression	296.2 311.00	23	23
Mild Mental retardation	317.00	7	2
Substance abuse (cannabis)	305.20	5	5
Anxiety disorder	300.02	2	1
Schizophrenia	295.9	1	1

TABLE 3—*Occurrence of psychiatric disorders: HIV vs control**

Psychiatric disorders	HIV (N=65)	Control (N=78)
Present	33	32
Absent	32	46

*X^2=1.35, N. S.

genital herpes (5), genital warts (4), pelvic infection (7).

Physical illness (Non STD)

HIV group: These occurred in 40% (N=27) in HIV subjects: They comprised: Bronchitis (8), pulmonary tuberculosis (4), anaemia (2), peptic ulcer (3), chronic diarrhoea (3), Hansen's disease (2) Ishchemic heart disease (1), viral infection (2), goitre (1), myeloid leukemia (1), Kaposi's Sarcoma (1) (in the foreigner) and cirrhosis of liver (1).

Control group: The physical illness occurred in 19% (N=15) among the control subjects (carcinoma vulva (2), bronchitis (2), peptic ulcer (3), anaemia (2), viral infection (2), grandmal epilepsy (1), angular stomatitis (2), conduction deafnes (1)).

There was no neurological deficit and cerebral CT Scan was non contributory. There was excess of physical illnesses in the HIV group than the control (stastistical significance: $X^2=7.69$; $p<0.01$).

Prior knowledge of HIV infection:

HIV group: Sixty subjects (7 .%) were knowledgeable about AIDS. The sources of information were T.V., News papers and casual talks with peer group and friends, films, radio and other sources.

Control group: Thirty subjects (35%) had a prior knowledge of AIDS from similar sources. A 'hunch' of having contracted AIDS was more frequent in the HIV subjects.

Psychological responses to disclosure:

The psychological responses of the subjects following the disclosure of HIV positivity and its implication were observed in 45 cases (69%). These responses were elicited on the lines of a standard clinical psychiatric examination. In twentyone who were depressed at index, the depression worsend with an elevation on BDI and BHS ratings. Two developed post-disclosure Major depression. Five responded with suicidal ideas and made suicidal attempts. Six became panicky with a fear of death from AIDS. Symptoms of mild anxiety disorder manifested in fourteen others. Denial, resignation and fear of disfigurement were other observations. One subject for example refused to accept that he was infected and believed that the illness would never be fatal "Doctors always frighten patients; my mother has told me about this". Guilt was noted in a few over the promiscuous behaviour while some felt stigmatised. Acceptance of infection as a divine punishment for the erratic behaviour was expressed by one subject. On the other hand, eighteen subjects remained either unconcerned or non responsive to their seropositive status.

Discussion

The observations from this study do not lend themselves to any generalisation, since the subjects for study and control were drawn from a homogenous STD OP population. The study has revealed features common to both groups though certain dissimilarities were noticed.

HIV prevalence:

The rate of 1.6% (N=85) among the total number screened (N=5287), is higher than 4.7/1000 in the high risk groups in the ICMR nationwide Sero Surveillance Programme (ICMR, 1990). Though the males were thrice the number of females among the screened, the sex distribution in the HIV positive subjects was almost equal (M:42; and F:43). The frequency of HIV seropositivity was 1.06% for males and 3.29% for females. The interval between the detection of

seropositivity and the index evaluation varied from two weeks to 36 months. It was not possible to ascertain the time of contracting the infection. Unlike other STDs, the entry of HIV virus via sex is unattended by any external genital lesion.

A link between the prevalence of HIV seropositivity and occurrence of frank AIDS has been pointed out. AIDS cases did not appear until the seropositivity rose in the homosexuals in San Francisco study to 24% in 1980 from 4% in 1978 and from 4% to 21% in the STD clinic in UK (Adler, 1988). Fortyfour AIDS cases in India with 4.7/100 HIV positivity supports this observation. In our study there was one case of AIDS among 85 HIV positive cases. A critical threshold of reservoir of infection is a precursor to the breakout of frank AIDS. The picture in India is likely to change soon with a rising figure of the infected blood donors.

Sex behaviour:

Excepting promiscuity, numbers of partners and contacts, which were significantly higher among the female HIV subjects, the sex behaviour did not differ between the two groups. The ages at first coital experience were similar in both the groups. Bisexual behaviour too was not different. No significant difference was noted in the use of condom or resorting to sterilization procedures like tubectomy. "That sexually transmitted diseases are the most pervasive, destructive and costly communicable diseases problems confronting American adolescents today" (National Institute of Health, 1980). However, in our study the bulk of material was from the 18-29 age group which is represntative of STDs in general. The STDs as well as HIV infection occurred in 71% of the subjects in the 20-29 age group. Interpreting the other way, out of 60 belonging to this age group, 44 were HIV positive. There were only 5 HIV subjects between 18-20 with STDs. This discrepancy in the age group between US reports and ours may not be due to earlier age of initiation into sex in US since this did not differ from our findings. By the age 19 years, more than half of US teenagers have sexual intercourse and in certain sub-groups like Black girls, the rate is reported to be much higher (DiClemente, 1989). Homosexual behaviour and a higher figure for multiplicity of partners in the US may account for the difference. This needs further study.

Psychiatric disorders:

The psychiatric disorders and the duration and intensity of symptomatology at index did not sigificantly differ in both the groups (HIV: 51% vs. STD: 41%). The psychiatric morbidity among the patients attending the STD and Genitourinary clinics has been reported to vary from 22-45%. The reported features are affective and personality disorders, psychosexual dysfunction and disorders associated with physical symptoms (Fitzpatrick et al., 1986; Ikkos et al., 1987). Nevertheless it has been suggested that neuro psychiatric symptoms in HIV infected subjects without major symptoms of immuno deficiency may be due to the underlying sub clinical HIV encephalopathy (Grant et al., 1988). The brain scan in our study did not reveal any specific changes and hence it was difficult to detect the brain changes in these cases without further sophisticated investigations. A differential diagnosis of encephalopathy is more likely when symptoms of depression, anxiety predominate in HIV subjects against the background of cognitive deficits, which our group did not reveal. The psychiatric disorders do not seem to be related to

HIV infection and appear 'garden variety'. The two groups share personality problems in terms of drug and alcohol abuse and promiscuous behaviour.

Psychological reaction to disclosure:

There are reports of an impaired mental functioning in those who were informed of their seropositivity compared to the "non-disclosed" but seropositive men. The common symptoms were depression and obsessive compulsive features (Ostrow et al, 1989). The psychological responses in our subjects have been in general minimal or of moderate nature and responded to counselling barring cases of Major Depression, and five suicide attempts. Major Psychotic symptoms rarely occur in the absence of dementing features (King, 1990). Though suicidal ideation is reported frequently in the asymptomatic infected following disclosure, suicide completion is rare. Completed suicide is common in AIDS patients, resulting from convergence of features like 'life threatening' illness factors, stigmatization, withdrawal of family and social support, dependency, fear of disfigurement. The risk of suicide in AIDS is estimated at 36 times more than 'normal' people in the identical age group and 60 times that of general population in Western literature (Marzuk et al., 1988). None among 33 AIDS deaths (5 foreigners and 28 Indians) in India was from suicide (ICMR, 1990).

Physical symptoms, physical illness;

The frequency of physical illness of non-STD nature was signinficantly higher in the HIV group than the control group. Tuberculosis was observed in the study subjects and not in the controls. Excepting one case of Kaposi's Sarcoma, there were no other opportunistic infection or malignancy in our series.

Of the natural history of the HIV infection in India, whether it is same or differs from that observed in other countries is not yet clear. It is also not clear at present whether a progressive decline in the immune status of the HIV subjects predisposes them to physical illness other than the known opportunistic illness and how these are handled by the subjects. There are reports of gastrointestinal and other illnesses occurring in the asymptomatic carriers in India. The occurrence of disseminated tuberculosis, amoebic liver absces and their good response to treatment in suspected AIDS cases in India have been documented (ICMR, 1990). That the incidence of tuberculosis is rising in HIV infected subjects has been reported from developing countries (Harries, 1990).

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