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HIV PAPER: SOCIO-DEMOGRAPHIC AND CLINICO-IMMUNOLOGICAL PROFILE OF HIV/AIDS PATIENTS ATTENDING ART CENTRE OF TEZPUR MEDICAL COLLEGE AND HOSPITAL.

Dr Liza Goswami Assistant Professor, Dept of Microbiology, Nalbari Medical College and Hospital, Assam.

Dr. Subarna Devi* Demonstrator, Nagaon Medical College and Hospital, Assam. *Corresponding Author

Dr Mayuri Gogoi Associate Professor, Jorhat Medical College and Hospital, Assam.

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INTRODUCTION:

Since the summer of 1981, when Acquired Immune Deficiency Syndrome (AIDS) was first discovered, it has taken the world by surprise. It has now become a deadly pandemic. The AIDS epidemic targets people in their most productive years that are strong young adults, which lead to disastrous economic, political and socio-demographic consequences.(1,2)Human immunodeficiency virus (HIV) infection in India was first detected in Madras in 1986. Subsequent countrywide surveillance has shown its widespread prevalence throughout the country.[3] Presently, HIV/acquired immunodeficiency syndrome (AIDS) epidemic represents the most serious public health problem in India.[4]

Human immunodeficiency virus sentinel surveillance (HSS) shows that there are various zones in the country with varying prevalence rates.[5] It is noteworthy that despite being labelled as a low-prevalence state, Assam has always been highly vulnerable for HIV transmission because of a) being the gateway to the north-eastern states of India, b) being surrounded by two high prevalent states of Manipur and Nagaland, c) large number of female in-migrants from other states ending up in sex work, and several other reasons [6].

In the seventeenth round of HIV Sentinel Surveillance (HSS), Adult HIV Prevalence (15-49 years) recorded in the State of Assam was found to be 0.13%, Manipur (0.87%), Nagaland (1.37%), Mizoram (2.73%).

The epidemiology of the disease varies greatly from country to country and from region to region in the same country. For planning targeted interventions or any type of services, it is essential to know the socio-demographic and clinical profile of the HIV/AIDS patients in a particular area. However, numerous clinical/demographic studies have been carried out from across India; there is paucity of such studies in this region. Keeping this in mind, the present study was undertaken with an aim to study the socio-demographic and clinico-immunological profile of the adult HIV/AIDS patients attending the antiretroviral therapy (ART) center at Tezpur Medical College and Hospital from January 2022 to December 2022 with respect to demographic, geographic difference, mode of transmission, severity of the disease, patients ART status and CD4+T cell counts.

MATERIALS AND METHOD:

The study was carried out in the Department of Microbiology along with ART center of Tezpur Medical College and Hospital.

Study Design:

This is a retrospective study carried out from January 2022 to December 2022 at TMCH Tezpur.Study population: All HIV positive patients attending ICTC center of Microbiology department TMCH and patients on ART visiting ART center of TMCH during the study period were included in the study. The ART centre is affiliated to National AIDS Control Organisation (NACO).

The clinical history, socio-demographic data and the clinical signs and symptoms were studied retrospectively from the records. The HIV status of the patients were obtained from ICTC center of TMCH.

The immunological status of the patients were assessed from the CD4+T lymphocyte count.

Ethical Issues: Institutional review Board and Ethics committee approval was obtained.

Confidentiality and privacy was maintained throughout the study and data were made accessible to the researchers only.

RESULTS:

A total of 177 HIV positive patients attending ART center of TMCH were included in the study. Table 1 shows the socio-demograhic profile of the patients. Out of total 177 patients 138 (77.9%) were male and 39 (22.03%) were female. The male patients outnumbered the female patients. The mean age of the patients was 27. Majority (48.58%) of the patients were in the age group of 25-44 years. About 58.2% of the HIV positive patients in the study were unmarried and 41.8% were married. 26% of the females in the study had HIV positive sexual partners compared to 17% males who had HIV positive partners.

Table 1: Sociodemographic Profile

Table 1: Sociodemographic Profile Of HIV Positive Patients (n=177)		
CHACRECTERISTICS/VARIABLE	**NUMBER**	**PERCENTAGE**
1. GENDER		
MALE	138	77.9
FEMALE	39	22
2. AGE GROUP		
≤ 24	68	38.4
25-44	86	48.5
45 AND ABOVE	23	12.9
3. MARITAL STATUS		
UNMARRIED	103	41.8
MARRIED	74	58.2
4. RESIDENTIAL STATUS		
URBAN	157	88.7
RURAL	20	11.29
5. EDUCATIONAL STATUS		
ILLITERATE	24	13.55
PRIMARY SCHOOL	81	45.8
MIDDLE SCHOOL	2	1.12
HIGH SCHOOL CERTIFICATE	2	1.12
INTERMEDIATE OR DIPLOMA	50	28.24
GRADUATE DEGREE	17	9.6
POST GRADUATE DEGREE	1	0.56
6. OCCUPATIONAL STATU		
UNEMPLOYED	52	29.3
UNSKILLED	5	2.8
SEMISKILLED WORKER	45	25.4
SKILLED WORKER	31	17.5
CLERICAL/SHOP OWNER/FAR OWNER	18	10.16
SEMI PROFESSIONAL	26	14.68
PROFESSIONAL	00	00
7. SOCIO ECONOMIC CLASS		
LOWER	38	21.46
UPPER LOWER	90	50.8
LOW MIDDLE	42	23.7
UPPER MIDDLE	5	2.82

UPPER	2	1.12
8. PER CAPITA INCOME		
1,84,376	0	0
92,191—1,84370	2	1.12
68967- 92185	5	2.82
46095- 68961	5	2.82
27654- 46089	16	90.3
9232- 27648	85	48
≤ 9226	24	13.55
9. PLACE OF RESIDENCE		
BISWANATH	15	8.47
CACHAR	1	0.56
CHIRANG	1	0.56
DARRANG	2	1.12
GOLAGHAT	2	1.12
HAILAKANDI	1	0.56
JORHAT	1	0.56
LAKHIMPUR	2	1.12
NAGAON	82	46.32
SONITPUR	55	31
SSB TEZPUR	7	3.95
UDALGURI	8	4.5

88.7% of the subjects were from urban area in comparison to 11.2% who were from rural area.

In the present study 14% of males and 9% of females were illiterate. 45.8% of the subjects have studied upto primary school and 28.24% studied upto intermediate level.

Majority (71.8%) of the subjects were employed and about 28.2% were unemployed. Among the unemployed population 32% subjects were female and 8% were male.About 56.7% of the employed subjects belonged to the skilled and semi-skilled labourers like drivers.

Majority of the subjects in the present study belonged to the upper lower socio-economic class with a median per capita income of rupees 35000.

The commonest mode of transmission among the HIV positive patients in the present study was IV drug abuse followed by heterosexual route. Add %

Table 2: Distribution Of Patients According To Their Mode Of Transmission

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MODE OF HIV TRANSMISSION	**No. of patients**	**%**
HETEROSEXUAL	57	32.2
I/V DRUG ABUSE	86	48.58
BLOOD TRANSFUSION	4	2.25
NEEDLE STICK INJURY	4	2.25
MSM	16	9.03
UNKNOWN	6	3.38
MOTHER TO CHILD TRANSMISSION	4	2.25

Common reasons for getting tested for HIV were feeling sick (56.8%) and spouse being diagnosed HIV positive (26.2%). Other reasons were hospital admission (10.0%), voluntarily due to high risk behaviour (4.8%) and during antenatal check-up (2.2%). Major reason for getting tested among male patients was feeling sick (76.2%), however among female patients, spouse being diagnosed HIV positive (52.7%) was the major reason (Figure 3).

Table 5: Common Presenting Complaints

Complaint	Number of Patients
Fever	29
Weakness	9
Weight Loss	8
Loss of Appetite	26
Oral Ulcers	9
Cough	8
Diarrhoea	7
Night Sweats	5
Myalgia	4
Nausea/Vomiting	6
Headache	3
Sleep Disturbance	2
Skin Rashes	5
Chest Pain	3
Numbness	2
Swollen Lymph Nodes	4
Shortness of Breath	3
Abdominal Pain	3

The most common presenting complaints were fever, weakness, weight loss, loss of appetite, oral ulcers, cough and diarrhoea. Other complaints were night sweats, myalgia, nausea/ vomiting, unusual headaches, sleep disturbance, skin rashes, chest pain, numbness, swollen lymph nodes, shortness of breath and pain abdomen (Table 5)

As far as CD4 count is concerned (3.95%) patients were having CD4 count <200 cell/mm when they were registered to the ART centre. (7.9%) patients had CD4 count between 200-400 cell/ mm and (26.55%) presented with CD4 count >400 cell/mm at the time of registration to ART centre.

Table 3: Distribution Of Patients According To Their CD4+ Cell Counts

CD4 T CELL COUNT	No. of Patients	Percentage
< 200	7	3.95
200-400	15	8.47
400-600	19	10.73
600-800	16	9.03
800-1000	6	3.38
>1000	6	3.38
NA	108	61

Patients were classified into WHO treatment categories as per their status at the time of initiating ART and of this 55.3% belonged to the WHO treatment category I and 28.2% belonged to category II. Only 4.5% subjects belonged to category IV.

Table 4: Distribution Of Patients According To WHO ART Category

WHO ART CATEORY	No. of Patients	Percentage
STAGE I	98	55.36
STAGE II	50	28.24
STAGE III	21	11.86
STAGE IV	8	4.5

DISCUSSION:

HIV/AIDS generally affects the economically productive and younger age group. The present study corroborates this.

In the present study the predominant age group affected belonged to 25-44 years age group. This is similar to a study in Shimla in 2018 by Sood et.al (7) wherein the predominant age group affected was 25—44 years of age and to a study conducted in Jammu by Verma et.al (8) in 2006 where the highest incidence of HIV/AIDS was found in the age group of 31-40 years (48%).

The present study shows prevalence of more males (77.96%) than females with male:female ratio of 3.5:1. The male preponderance might have been due to the fact that in the existing social scenario in India, females do not seek medical care fearing ostracism and loss of family support. Our results are consistent with a study from Surat, India in which 64.4% participants were males [9] and to a study conducted by Jha et al in 2014 where 66.3%.

Majority of the subjects in the present study were from urban area (88.7%) which is similar to study conducted by Jha AK et al [10] in 2014 but in contrast to a study conducted by Chennaveerappa et.al in 2011 [11].

41.8% of the patients in the present study are married in contrast to the study conducted by Jha AK et.al in 2014 [10]. Two other studies in Jammu and Aligarh reported 74.59% and 77.1% of patients as married [4,8] 26% of females had HIV positive partners while only 17% of males had HIV positive partners. This shows a male preponderance of HIV infection again. This is similar to the study by Bhandarkar et al in 2011 which reported 49.8% of female as compared to 32.9% of males had HIV positive partners.

A significant proportion 24% (17.4% males and 61.5% females) were

illiterate and 28.2% of patients received education above intermediate level and 45.8% received education upto primary school level. This is similar to a study by Jha AK et al in 2014 [10] where 26.9% males and 29.4% females were illiterate.71.8% of the subjects were employed of which 56.7% were employed in unskilled and semiskilled occupation. Almost all the females in the study were housewives. Our observations are similar to a study by Gupta in Udupi [13] where the most common source of income for males (48.8%) was semi-skilled occupation and Jha et al [10].

Most of the subjects in the present study belonged to upper lower socio-economic class according to modified kuppuswamy scale (2022) with a median per capita income of rupees 35000. This is similar to study conducted by Khan et al in 2010 [14] where majority of the subjects were from lower socio-economic status.

In the present study the commonest mode (48%) of acquiring infection was through intravenous drug abuse followed by heterosexual route (33.4%). This in contrast to studies by Jha et al and by Sharma from Ahemdabad [15] where sexual route accounted for infection in 72.2% and 63% cases respectively.

In study population CD4+Tcell counts ranged from 131 to 1631 cells/mm3 (mean = 694). Out of total patients, 9.33% patients had immunosuppression (CD4+Tcell count ≤200/mm3), while majority (34.46%) of the patients were at relatively good immune status, having CD4+Tcell counts >200/mm3. This good level of immune status in most of our patients was again a reflection of early case detection and timely institution of ART, as most of our patients were on ART. Bhandarkar et al reported similar results.[12]

WHO clinical stage of the patients showed that of total number of patients who got registered in the ART centre majority were in WHO clinical stage I & II, which is a sign of quality referral from ICTC and might be due to impact of large scale IEC campaigning at state and national level.

Another study by Hitenkumar P Sonani in Surat also found that maximum number of patients were in first or second stage when they first reported to ART centre [16]. This finding is different from the study by Nayak, et al they reported 48.03% patient in stage III.[17]

CONCLUSION

In our study most of the affected population was from low to middle socioeconomic class and reproductive age group i.e. 25-44 years which increases the economic burden and affects the overall development of the family, community and country. The other socio-demographic determinants found to be associated with HIV positivity were literacy status, occupation, and place of residence. Since higher literacy helps in getting a better job and increased per capita income, which leads to improvement in the socio-economic status of the individual, so just by working on improvement of literacy status we will be able to modify the other socio- demographic determinants. Also, increased literacy will help in better understanding about the disease, its mode of transmission, personal protective measures to be employed and societal responsibilities at the individual level, which will help to a great extent in preventing the spread of this pandemic. Heterosexual route was the commonest mode of transmission. Marital life itself becomes a risk factor for those women who get infected by their HIV positive spouse. HIV negative spouse should be the target group for priority targeted interventions to reduce thechance of HIV transmission. This will also reduce the chances of female seropositivity as well as mother to child transmission of HIV. The early case detection and timely institution of ART has declined the systemic opportunistic infection in HIV/AIDS patients. This is a promising positive step to combat with the HIV/AIDS disease in community.

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