

Original Research Article

Comparison and evaluation of the clinical features of the patients of ART 1 failure who have started ART 2 medication

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ABSTRACT

Background: ART introduction was a breakthrough step and a boon for HIV infected and AIDS patients. Since the launch of world's second largest ART programme by Indian Government on 1st April 2004, duration and quality of patient's life has improved significantly. But after years of treatment with first line ART drugs clinical deterioration is being observed in several patients. This study was done to find out clinical symptoms present in treatment failure cases and to look for any improvement after one year of second line ART.

Methods: This is a Single tertiary care teaching hospital based clinical (assessment with investigation) continuous longitudinal, prospective and retrospective, observational study at ART plus Centre, Kanpur. All patients on 1st line ART treatment in the centre were screened for treatment failure as decided by SACEP from 2016 to 2018. Treatment failure was suspected in patients on first line ART treatment with deterioration or non-improvement of clinical symptoms which was later confirmed by immunological and virological test.

Results: Study included 71 (61%) female and 47 (39%) male patients. Heterogeneous mode of transmission of disease was most common (97 (82%)) followed by Blood transfusion (11 (9%)). HIV infection prevalence in age group of 30 to 40 years was 54 (45%). Most common clinical features of the patients with first line ART treatment failure were weight loss (105 patients), chronic diarrhoea (56 patients), fever (34 patients), and cough (24 patients). After treatment for one year with 2nd line ART drugs above symptoms were reduced to 20, 5, 5 and 12 patients respectively.

Conclusions: First line ART failure was most common among female patients and heterogeneous mode of transmission was the commonest. Most common clinical features of first line ART failure were weight loss, chronic diarrhoea, fever, and cough which were reduced significantly after treatment with 2nd line ART drugs for one year.

Keywords: Acquired immunodeficiency syndrome, ART, Human immunodeficiency virus, SACEP

INTRODUCTION

HIV is virus, cause of AIDS, it belongs to the family of human retrovirus (retroviridae) and subfamily Lentiviruses. There are four retroviruses known to cause human disease belong to two distinct groups the human T

lymphotropic virus (HTLV-1) and human T lymphotropic virus-2 (HTLV-2) which are transforming retroviruses and human immunodeficiency virus HIV -1 and HIV-2. HIV-1 group is have different group as M, N, O and P and M group is having nine subtype A, B, C, D, F, G, H, I and k. There are about 60 recombinant form presents.

CRFs range from highly prevalent form such as CRF01 that is common in southeast Asia and CRF02AG from West and central Africa. HIV-1 group M subtype C dominate the global pandemic and HIV-1 came from Chimpanzees and Gorilla. HIV-2 was first identified in 1986 in west Africa. HIV-2 came from Sooty Mangabeys. HIV-2 was spread from West Africa. In India 95% of infection of HIV -1 and group C but in United States there are more infected population is from HIV-1 and group B. AIDS first recognized in United States in summer of 1981 when the U.S. Centres for disease control and prevention (CDC) reported the unexplained occurrence of Pneumocystis Jiroveci in previously healthy homosexual men in Los Angeles And Kaposi sarcoma (KS) with and without P. Jiroveci and other opportunistic infections in 26 previously healthy homosexual men in New York San Francisco and Los Angeles. First time in 1983 Human Immunodeficiency Syndrome (HIV) was isolated from a patient of lymphadenopathy and by 1984 it was demonstrated clearly causative agent of AIDS. In 1985 A sensitive enzyme- linked immune sorbent assay (ELISA) was developed.¹ Person with positive HIV serology who have ever had a CD4 lymphocyte count below 200cells/ml and CD4 lymphocyte percentage below 14% are considered as AIDS, HIV infected patient in World-wide are about 37.9 million and 23.3 million patients taking antiretroviral treatment that are only 62% of infected patients. Africa have about 25.7 % of total infected patients that is largest but patients taking ART in Africa is about 16.35 of whole world. In India about 18.13 lacks are estimated total no of PL HIV patient and 6.5 lacks are taking first line ART.

Table 1: Estimated per ACT probability of acquiring HIV from an infected source by exposure ACT.

Type of exposure	Rout of exposure	Risk per 10000 exposure
Parenteral	Blood transfusion	9250
	Injection drugs use	63
	Percutaneous	23
Sexual	Receptive anal intercourse	138
	Insertive anal intercourse	11
	Receptive vaginal intercourse	8
	Insertive vaginal intercourse	4
	Receptive oral intercourse	Low
	Insertive oral inter course	Low
Mother to child	Vaginal delivery	1500
	Breast feeding	54
Other	Bititng	Negligible
	Spitting	Negligible
	Throughing body fluid	Negligible
	Sharing sex toys	Negligible

HIV virus is transmitted through HIV infected patients to uninfected patient by number of ways as

- Sexual Transmission
- Transmission through injection drugs use
- Transmission by transfused blood and blood products.
- Occupational transmission of HIV
- Mother to child transmission of HIV
- By different body fluids.

Table 1 show that the blood transfusion is most common mode of HIV transfusion and oral intercourse is the lowest amount of transmission method and also biting, spitting has negligible mode of method transmission. After infection of patient by different mode there are event in the body is happening that are

Primary infection

HIV virus inter to the body through the different way and inter to susceptible cell in the body, CD4 cell via receptor CCR5 AND CXCR4. In the cell it multiplied through replication process.

Eclipse phase of infection

Once infection is established, the virus replicate in lymphoid cells in the mucosa, sub mucosa, and to some extent the lymphoreticular tissue that drain the Gut Tissues. For a variable period of time ranging from a few to several days, the virus cannot yet be detected in the plasma. This period is referred to as the eclipse phase of infection.

Burst of viremia stage

Within several days to weeks, it is disseminated, first to draining lymph node and then to other lymphoid compartments where it has easy access to dense concentration of CD4 count, allowing for burst of high level of viremia that are readily detected by available assays.

Chronic persistent stage

Once infection has been established the virus succeeds in escaping complete immune - mediated clearance. Paradoxically seems to thrive on immune activation and is never eliminated completely from the body. The chronic infection develops and persists with varying degrees of continual viral replication in untreated patient for a median of 10 years. It is this established of a chronic persistent infection.

Advanced disease stage

In untreated patients or in whom therapy has not adequately controlled replication after a variable period

usually measured in year, The CD4 Count fall below a critical level <200 /MIRO L and the patient become highly susceptible to opportunistic diseases.

HIV reservoir stage

The resting CD4 count cell carry an integrated form of HIV DNA in the genome of the host and can remain in the state until a activation signal drives the expression of HIV transcript and ultimately replication –competent virus.

The clinical consequence of HIV infection encompasses a spectrum ranging from an acute syndrome associated with primary infection to a prolonged asymptomatic state to advanced stage.

It is best to regard HIV disease beginning at time of primary infection and progressing to various stages that are

Primary infection

HIV virus inter to the body through the different way and inter to susceptible cell in the body, CD4 cell via receptor CCR5 AND CXCR4. In the cell it multiplied through replication process.

Acute HIV infection

About 50% to 70% of individual with HIV infection experience an acute clinical syndrome about 3 to 6 weeks after primary infection. It has been reported that several symptoms of acute HIV syndrome such as

- Fever,
- Pharangitis,
- Lymphadenopathy,
- Headache,
- Arthragia,
- Lethargy/Anorexia,
- Weight loss,
- Mucocutaneous ulceration,
- Meylopathy,
- Encephalopathy.

Asymptomatic stage (latent stage)

This the stage in which the symptom of infection is not present but HIV disease with active virus replication is on-going and progressive during this asymptomatic period.

In this stage the HIV RNA level is very low level.

But in this stage when CD4 Count decrease to the critical level and then the opportunistic infection occurred but symptoms of HIV infection is not occurred.

Symptomatic stage

Symptoms of HIV disease can appear at any time during the course of HIV infection. The spectrums of illness that can be present as CD4 Count Decline, more severe and life-threatening complications of HIV infection occurred in patients with CD4 count is less than 200 /micro L. That is

AIDS defining illness

The diseases published by the centres of disease control and prevention that are associated with AIDS and used world wise as a guideline for AIDS diagnosis that are

- Candidiasis of brochi, trachea or lungs
- Candidiasis of oesophagus
- Coccidiomycosis
- Cryptococcosis
- Cryptosporidiasis
- Cytomegalovirus retinitis
- Encephalopathy
- Herpes simplex
- Histoplasmosis
- Isosporidiasis
- Kaposi, sarcoma
- Burkitts lymphoma
- Immunoblastic lymphoma
- Mycobacterium avium complex or mycobacterium kinase
- Mycobacterium tuberculosis
- Pneumocystis jiroveci pneumonia
- Progressive multifocal leukoencephalopathy
- Salmonella sepsis
- Toxoplasmosis of brains
- Tuberculosis disseminated
- Wasting syndrome
- Cervical cancer
- Pneumonia recurrent
- Mycobacterium tuberculosis any site (pulmonary).

Opportunistic infection stage

This is the infection occurred more often or is more severe in people with weakened immune systems than in people with healthy immune systems.

- Aspergillus sp
- Candida albicans
- Clostridium difficile
- Coccidioides amities
- Cryptococcus neoformans
- Cryptosporidium
- Cytomegalovirus
- Geomyces destructans
- Histoplasma capsulatum
- Isospora belli
- Polyoma virus JC polyomavirus

- Kaposi sarcoma
- Legionaire disease
- Microsporidium
- Mycobacterium -Avium complex
- Mycobacterium tuberculosis
- Pneumocystis jiroveci
- Pseudomonas aeruginosa
- Salmonella
- Staphylococcus aureus
- Streptococcus pneumonia
- Streptococcus pyogenes
- Toxoplasmosis gondii.

Non-AIDS defining illness

- Non-AIDS related cancer
- Cardiovascular disease
- Renal disease
- Hepatic disease.
- Hodgkins disease
- Multiple myeloma
- Leukemia
- Melanoma.

HIV associated illness

- Cardiomyopathy
- Enteropathy
- Nephropathy
- Lipodystrophy
- Arthropathy
- Fibromylgia
- Neurocognitive disorder
- Dementia
- Encephalopathy
- Myelopathy
- Peripheral neuropathy.

ART associated symptoms

The disease occurred due to continue the antiretroviral therapy as

- Anemia
- Thrombocytopenia
- Jaundice
- Abdominal pain
- Pancreatitis
- Kidney injury
- Hypersensitivity syndrome
- Lipodystrophy
- Nausea, Vomiting, Diarrhoea
- Osteomalacia
- Hyperglycemia
- Vertigo.

The pathological test that are used for diagnosis of HIV infected patient is

ELISA test

It tests the presence of antibody of HIV and p24 Antigens. It has the 99.5% sensitivity. It used for screening test.

Western blot test

It is the specific assay that is used for confirming test for HIV infection it is 99% specific test for HIV infection.

Immune complex-dissociated p 24 antigen capture assay

It is used for measurement of level of HIV -1 CORE protein in an EIA -based format following dissociation of antigen -antibody complexes by weak acid treatment. It can detected the p24 level up to 15pg/ml.

HIV RNA by BDN

Measurement of level of particle - associated HIV - RNA IN a nucleic acid capture assay employing signal amplification. It is reliable to 50 copies /ml of HIV RNA.

HIV RNA by TMA

It is done by target amplification of HIV-1 RNA via reverse transcription followed by T 7 RNA polymerase. It is reliable to 100 copies/ml of HIV RNA.

HIV RNA by NASBA

It is done by isothermal nucleic acid amplification with internal controls. It is reliable to 80 copies /ml of HIV RNA.

HIV RNA by PCR

It is done by target amplification of HIV 1 RNA via reverse transcription followed by PCR. It is reliable to 40 copies/ml of HIV RNA.

Standard combination of antiretroviral regimens are two NRTI together with an NNRTI, Protease Inhibitor (PI) or Integrase Inhibitor. Starting regime of dual NRTIs combined with an NNRTI or a PI or an Integrase Inhibitor. These regimens should be monitored for resistant testing. If resistant testing is not available then PI in second line regimens are preferable.⁵

The first line ART should consist of two nucleoside reverse transcriptase inhibitor (NRTI) + One Non-nucleoside reverse transcriptase.

Monitoring of efficacy during ART treatment

Base line viral load should be measured prior to initiating treatment. Viral load should be repeated 4 to 8 weeks after starting a new regimen when the count should show

at least a tenfold decrease. After six month of ART the viral load should be suppressed defined as below the detection of the assay (usually less than 50 copies /ml). WHO defined immunological failure as fall in CD 4 Count to base line or a 50% fall from peak on ART or persistent count below 100cell/mm. Failure of ART is defined as viral load become detectable after suppression typically more than 400 or more than 1000 copies/ml.

Aims and objective of this study was to Compare and evaluate the clinical features of the patients of ART 1 failure.

METHODS

This is a Single tertiary care teaching hospital based clinical (assessment with investigation) continuous longitudinal, prospective and retrospective, observational study at ART plus Centre, Kanpur, India.

Type of Study is Single tertiary care teaching hospital study. Study design was clinical (assessment with investigation) continuous longitudinal, prospective and retrospective, observational, single centre hospital-based study at ART Plus Centre, Kanpur from 2016 to 2018.

Study subject are all the patient on 1st line ART treating attending in our centre was screened for treatment failure of based on clinical, immunological and virological criteria's as decided by SACEP from 2016 to 2018.

Inclusion criteria

- Patient over the age of 18 years at pre-inclusion and monitored under outpatient condition.
- Documented HIV-1 (group m) infection regardless of clinical stage and CD4 lymphocyte-count (taken in 6 months).
- Patient with treatment failure after first-line antiretroviral treatment with a combination including a non-nucleoside reverse transcriptase inhibitor and two nucleoside reverse transcriptase inhibitors, failure.
- Adherence (>80%) to first-line antiretroviral treatment (questionnaire) at pre inclusion.
- Patient agrees not to take any concomitant medication during the trial without informing the investigator.
- Informed consent.
- For women in childbearing age: negative pregnancy test at inclusion, with no plan of pregnancy in the coming 12 months and agreeing to use mechanical contraception (with or without hormonal contraception) during the study.

Exclusion criteria

- Infection with HIV-2 or HIV-1 groups O or N or HIV 1+2.

- Adherence (<80%) to first-line antiretroviral treatment at pre inclusion.
- Participation in any other clinical trial.
- Presence of an uncontrolled, on-going opportunistic infection or of any severe or progressive disease.
- First-time treatment with a protease inhibitor, abacavir.
- Not interested to participate in study.
- Severe hepatic insufficiency.
- Creatinine clearance calculated by Cockcroft-Gault formula <50 ml/min.
- Hb \leq 8 g/dl.
- Platelets <50,000 cells / mm³.
- Neutrophils <500 cells / mm³.
- Pregnancy or lactation.

Blood sample collection

On admission, 10 ml of peripheral venous blood was collected from the antecubital vein by an autoclaved syringe using 20 gauge needles. The blood was allowed to clot at room temperature for at least half an hour. The glass tube with clotted blood was centrifuged at 2000 rpm for 20 minutes and the centrifugation was repeated once more to remove the red cells completely. The supernatant serum, devoid of cellular elements, was separated from the clot and placed in two acid cleaned small test tubes.

Viral load testing

Patient of HIV suspecting first line ART failure send to BHU Varanasi Department of Microbiology, IMS BHU Banaras. For estimation of viral load. In BHU viral load is tested quantitatively real time PCR from HIV RNA by PCR machine.

Measuring

Viral load is typically reported as copies of HIV in a milliliter (mL) of blood. Changes in viral load are usually reported as a log change (in powers of 10). For example, a three-log increase in viral load (3 Log₁₀) is an increase of 10³ or 1000 times the previously reported level, while a drop from 500,000 to 500 copies would be a three-log-drop (also 3 Log₁₀).

CD4

CD4 count is done by BD facts flow machine by kit in GSVM medical college Kanpur in Microbiology department and report is analysed and given same day.

RESULTS

This study was conducted in ART PLUS centre K.P.S. POST GRADUATE Institute of Medicine (G.S.V.M. medical college Kanpur India). In this study maximum patients were in the age group of 30-40-year (54 (45%)), followed by patients in the age group of 30-40 years (29

(25%) patients. In the age group of 20-30-year number of patients were 23 (19%). Patients with age group of 60-70 were only 1 (0.001%) patients (Table 2). The Total number of patients in this study was 118 out which 47 were male (40%) and 71(60%) were female (Table 3).

Table 2: Distribution of cases based on age in this study.

Age group	No. of patients	Percentage
20-30 year	23	19%
30-40 year	54	45%
40 -50 year	29	25%
50 -60 year	11	9%
60-70 year	1	0.001%

Table 3: Distribution of cases based on sex in this study.

Sex	No. of subjects	% age
Male	47	40%
Female	71	60%

Majority of patients were from rural area ((65) 55%) and 53 from urban area (45%) (Table 4).

Table 4: Distribution of cases based on geographical area.

Geographical area	No. patients	Percentage of patients
Rural	65	55%
Urban	53	45%

Four symptoms were predominantly seen in patients with ART 1 failure. These were - Weight loss, fever, chronic diarrhoea and cough weight loss was seen in 105 patients, Chronic diarrhoea in 56 patents, Fever in 34 and coughs n 24 patents.

These patents were confirmed for ART 1 failure by haematological and virological studies. Second line ART drugs were started in all these patents. At the end of one-year treatment weight loss was present in 20 patents, chronic diarrhoea n 5, Fever in 5 and cough n 12 patents only (Table 5).

Table 5: Presence of clinical features and change of clinical feature.

Clinical features	No: of patients (Before Second line ART treatment)	No: of patients (After one year of second line ART treatment)
Weight loss	105	20
Fever	34	5
Chronic diarrhoea	56	5
Cough	24	12

In this study the symptoms of opportunistic infection were present that are oral candidiasis, pulmonary tuberculosis, chronic diarrhoea, LRTI, Tubercular lymphadenitis, Tuberculosis of pericardium, Tubercular meningitis, Extra pulmonary tuberculosis, Abdominal Koch's (Table 6).

Table 6: Opportunistic infections seen in study subjects.

Opportunistic infection	No: of subjects	Percentage
Oral candidiasis	28	23%
LRTI	10	8%
Pulmonary tuberculosis	27	23%
Chronic diarrhoea	5	4%
TB Lymphadenitis	3	2%
Tuberculosis of pericardium	1	0.8%
TBM	3	1%
Extra pulmonary tuberculosis	14	11%
Abdominal Koch's	2	1%
No infection	25	21%

In this study authors found that heterosexual mode of transmission is 97 (82%) was the most common followed by blood transfusion mode is about 11 (0.09) patients (Table 7).

Table 7: Mode of transmission in study subject.

Mode of transmission	No. of patients	Percentage
Heterosexual	97	82%
Unknown	6	0.05%
Blood transfusion	11	0.09%
track driver	2	0.01%

Table 8: Adeverse effect in study subjects taking ART 2 regimens.

Adeverse effect	No. of patients	Percentage
Nausea	30	25%
Vomiting	46	38%
Diarrhoea	25	21%
Anaemia	37	31%
Abdominal pain	20	16%
Jaundice	28	23%
Kidney abnormality	5	0.04%
Headache	24	20%
Muscle pain	46	38%
Skin rash	18	15%

Adverse effect of different drugs used in ART2 Regime was also studied. Symptoms were nausea, vomiting, diarrhoea, anaemia, abdominal pain, jaundice, kidney abnormality, headache, and muscle pain and skin rashes (Table 8).

Table 9: Baseline characteristics of the patients in study.

Characteristic	No. of patient	Percentage
Gender		
Male	47	39%
Female	71	61%
Age		
20-30 years	23	19%
30-40 years	54	45%
40-50 years	29	25%
50-60 years	11	9%
60-70 years	1	0.001%
Geographical area		
Urban	65	55%
Rural	53	45%
Habit		
Smoking	13	11%
Alcohol	53	45%
Tobacco	8	7%
Regime I		
TLE	90	76%
ZLN	28	24%
Regime 2		
TLATV/R	35	30%
ZLATV/R	74	59%
TLLP/R	5	4%
ZLLP/R	4	3%
Clinical symptoms		
Weight loss	105	
Fever	34	
Diarrhea	56	
Cough	24	

Out of total 118 study subject maximum no: of subject belong to age group of 30 to 40 years that is 45% and minimum no: of subject are in the age group of 60 to 70 years that is 0.8%. Mean value 37.21; SD 9.4.

In this study male was found to be 40% and female 60%. In this study authors found that female patients were having more ART1 failure as compared to males.

Distribution of study subjects on the basis of residence. This study shows that patents from rural area are more (55%) as compared to patents from urban area (45%).

In this study weight loss was seen n 105 subjects that reduced to 20, fever was in 34 that reduce to 5, chronic diarrhoea was in 56 and it reduced to 5 and cough was seen in 24 cases that reduced to 12 cases after one year of ART2 initiation.

Magnitude of opportunistic infection in this study subjects. This study show that oral candidiasis is the most common opportunistic infection (28) 23% followed by pulmonary tuberculosis (27) 23%. But overall total no: of

subjects having tuberculosis of any types 36% (pulmonary tuberculosis 23%, tuberculosis of pericardium 0.8%, extra pulmonary tuberculosis 11% and pulmonary koch's 1%, tubercular meningitis 1% and tubercular lymphadenitis 2%). LRTI was n 8% and chronic diarrhoea is 4 % (15).

Table 7 show that the heterosexual mode of transmission is most common 97 (82%) n patients followed by blood transfusion in 11 (0.09%) patients. Truck driver having the mode of transmission that was 2 patients.

Table 8 show that several adverse effects were found in patents tang ART 2 treatment.

DISCUSSION

Patil VC et al, clinical manifestation and outcome of patient with Human Immunodeficiency virus infection at tertiary care Teaching hospital. This considered 111 patients as observational retrospective study and in which about 75 were male and 36 were female and there was pulmonary tuberculosis and community acquired pneumonia is present. In this study the oral candidiasis and lymphadenitis was present in 6 patients. In this study there was pulmonary tuberculosis anaemia. LRTI, chronic diarrhoea is seen. In this study the male was less and female was more. Wal N, et al, Clinical feature of HIV Positive patients attending a tertiary care hospital of North India.² There was enrolled 317 patients in this study in which 193 was male and 124 was female patients, Mean age of patient was 34. 2 years and most was in the age group of 20 to 40 year of age. In this study mostly was from rural background 83.9%. In this study the common symptoms was weakness body ache joint pain lethargy, fever weight loss, cough and loss of appetite. Tuberculosis also most common opportunistic infections. In this study the age group mostly infected was 30 to 40 year of age, rural patients were mostly infected but female were mostly infected pulmonary tuberculosis is more common of opportunistic infection. The symptoms more common are weight loss, fever, muscle pain, chronic diarrhoea and cough was present.

Matin N, et al, clinical profile of HIV/AIDS -Infected patients admitted to a new specialist unite in Dhaka, Bangladesh -a low prevalence country for HIV-This study was considering about 109 patients and was a retrospective study in this study mean age was 33.4 and 62% patients were male and 41% patients were female.³ This study showed that the heterosexual transmission was recorded in 87 (80%) patients' pulmonary tuberculosis aural candidiasis is found 25 and 11 patients. In this study there was maximum no. of HIV patient in age group of 30 to 40 years that was 54 (45%) and second most common age was 40 to 50 year of age group that was 35 (29%) and minimum no of subject is in age group of 60 to 70 year of age group 1 (0.001%). It meant there was HIV infection maximally occurred in more sexually active person and also more economically productive

group. There was life span of HIV patient is 50 to 60 year of age. In this study female was having more HIV disease that was 71 (61%) out of 118 subjects and male was having less HIV disease that is 47 (39%) out of 118 and this study show that mode of transmission was most common was heterogeneous mode that was 97 (82%). Blood transfusion mode of transmission was second most common that is 11 (9%) last was truck driver and injection drug user was last that is 2 (less than 1%). Pulmonary tuberculosis and oral candidiasis is opportunistic infection was present. Mahy M et al, increasing trends in HIV prevalence among people aged 50 years and older: evidence from estimates and survey data. *AIDS*.⁴ This study shows the HIV-prevalence rates among people aged over 50 have increased steadily in the recent years. Care and treatment services need to address the specific needs of older people living increasing trends in HIV prevalence among people aged 50 years and older: evidence from estimates and survey data. In this study the maximum number of patients was in age group of 30 to 40 year and life span of PL HIV Patient was 50 to 60 year of age.

Anant A et al, Study of opportunistic infections in HIV seropositive patients admitted to community care centre (CCC).⁵ This study stated that out of 110 cases, 60.9% were males and 39.1% females. 77.2% respondents agreed that HIV could be transmitted through sexual means (96.2%), blood transfusion (96.7%) and sharing of sharp objects (92.5%). A few of the respondents believed that HIV can be transmitted through sharing of drinking cups (9.4%) and mosquito bites (13.6%) with HIV. Action mode of transmission of hiv/aids: perception of dental patients in a Nigerian teaching hospital. Anant A et al, Study of opportunistic infections in HIV seropositive patients admitted to community care centre (CCC).⁵ Distribution of case as per presenting symptoms is shown in table 1. In 79 (71.8%) patients commonly observed symptoms were fever (82.2%), followed by weight loss (65.8%), cough and dyspnoea (45.5%), diarrhoea (41.7%) and ulcers in oropharynx needed to incorporate Biomedical Research and symptoms improve after the treatment of ART this study also have the symptoms as weight loss chronic diarrhoea, fever cough and the symptoms were decrease one year after the ART 2 Ogunrinde T. J. And O I Opeodu et al, mode of transmission of hiv/aids: perception of dental patients in a nigerian teaching hospital.⁶ This study is prospective study taking 212 dental patients and show transmission of HIV is through sexual mean in 96.2% and blood transfusion mean is 96.7% and also sharing sharp object mean in 92.5% patient, in this study the transmission of HIV is through heterosexual mode and also by blood transfusion. Chauhan N S, et al.⁷ A safety analyses of different drugs regimens in immunodeficiency virus – positive patient; This study considering 2983 subjects and taken TLE and ZLN regime and at result there are Zidovudine containing regime having anemia. In this study the anemia is the adverse effect is seen. Onoya D et al, Second Line Antiretroviral Therapy in South Africa.⁸

This study was considering about 7708 patients initiating second line ART. Anemia is was most common and experience in 2389 cases second kidney problems was also found. Gastrointestinal problems were also found in this study. In this study Anaemia, kidney problems and gastrointestinal problems were present. Anaemia was present in Zidovudine containing regimens and kidney problems in Tenofovir containing regime.

CONCLUSION

In this Study authors found that first line ART failure was most common among female patients and heterogeneous mode of transmission was the commonest. Majority of patents in the study were from rural area were in the age group of 30-40 years.

Most common clinical features of the patients with first line ART treatment failure were weight loss, chronic diarrhoea, fever, and cough which were reduced significantly after treatment with 2ndline ART drugs for one year.

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Ethical approval: The study was approved by the Institutional Ethics Committee of GSVM Medical College Kanpur, India

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