A DISSERTATION ON

A STUDY ON SURGICAL CONDITIONS AMONG HIV/AIDS CASES

Dissertation submitted to

THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

CHENNAI

in partial fulfillment of the regulations for

the Award of the degree

M.S.(General Surgery-Branch-I

DEPARTMENT OF GENERAL SURGERY

THANJAVUR MEDICAL COLLEGE & HOSPITAL,

THANJAVUR,

TAMILNADU DR.MGR MEDICAL UNIVERSITY

APRIL -2017

CERTIFICATE

This is to certify that the dissertion entitled " **A STUDY ON SURGICAL CONDITIONS AMONG HIV/AIDS CASES**" is a bonafide original work of **Dr.V.MEENAKSHISUNDARAM** in partial fulfillment of the requirements for M.S. Branch-I (General Surgery) Examination of the Tamil Nadu Dr. M.G.R. Medical University to be held in APRIL-2017 under my guidance and supervision in 2015-2016.

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DECLARATION

I **DR.V.MEENAKSHI SUNDARAM** hereby solemnly declare that the dissertation titled **" A STUDY ON SURGICAL CONDITIONS AMONG HIV/AIDS CASES"**done by me at Thanjavur Medical College, Thanjavur during 2015-2016 under the guidance and supervision of **Prof. Dr.K.SATHYABAMA,M.S..** This dissertation is submitted toTamil Nadu Dr.M.G.R Medical University, Chennai towards the partial fulfillment of requirements for the award of M.S. degree(branch-1 in General Surgery)

Place: Thanjavur

Date:

Thanjavur Medical College

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Approval No. : 269

This is to certify that The Research Proposal / Project titled

A STUDY ON SURGICAL CONDITIONS AMONG HIV-AIDS CASES

submitted by Dr. V MEENAKSHI SUNDARAM **of**

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ACKNOWLEDGEMENT

I express my heartful gratitude to the Dean, **Dr.VANITHAMANI,M.S.,M.Ch.,** Thanjavur medical college, Thanjavur for permitting me to do this study.

I am deeply indebted to **Prof.Dr.M.ELANGOVAN, M.S**., Head of the Department, Department of General Surgery, Thanjavur Medical College for his support and guidance.

I am very grateful to **Prof.Dr.K. SATHYABAMA M.S.,** Professor of Surgery and unit chief, who is my guide in this study, for her timely suggestions, constant encouragement and scholarly guidance in my study and in my post graduate period.

I profoundly thank my Assistant Professors **Dr.P.Vanathi M.S., Dr.R.Saravanan M.S,D.A.,Dr.N.Priya M.S.,Dr.B.Aquinas M.S.,Dr.Johnamalan M.S.,**Thanjavur Medical College who guided me throughout the period of my study.

I am extremely thankful to all the members of the INSTITUTIONAL ETHICAL COMMITTEE for giving approval for my study. I also thank all the patients who were part of the study and my colleagues for their support and criticism.

LIST OF ABBREVIATIONS

TMCH-Thanjavur Medical College and Hospital

OPD-Out Patient Department

M-Male

F-Female

HIV - Human Immunodeficiency Virus

AIDS- Acquired Immuno Deficiency Syndrome

CD-Clusters of Differentiation

CMI-Cell Mediated Immunity

PEP-Post Exposure Prophylaxis

E/R/S-ELISA /Rapid/Simple test

WHO-World Health Organisation

RNA-Ribo Nucleic Acid

DNA-Deoxyribo Nucleic Acid

ART-Anti Retroviral Therapy

HAART-Highly Active Anti Retroviral Therapy

DM-Diabetes Mellitus

AGE-Acute Gastro Enteritis

COPD-Chronic Obstructive Pulmonary Disease

SOL-Space occupying Lesion

CKD-Chronic Kidney Disease

PTB-Pulmonary Tuberculosis

TB-Tuberculosis

RS-Respiratory System

ICD-Intercostal Drainage

GIT-Gastro Intestinal Tract

BPH-Benign Prostatic Hyperplasia

CAD-Coronary Artery Disease

DVT-Deep Venous Thrombosis

Ca-Cancer/Carcinoma

I&D-Incision & Drainage

SPC-Supra Pubic Cystostomy

RTA-Road Traffic Accident

CONTENTS

INTRODUCTION

INTRODUCTION

The prevalence of HIV infection is on increase particularly in the developing countries . Accordingto a paper from UNAIDS/WHO in 2015 , there are about 36.7 million HIV infected patients currently in the entire world. There are about 2.1million whowere newly diagnosed worldwide. 1.1 million patients expired due to AIDS in 2015.

Therefore the incidence of HIV is on the increase and hence the incidence of surgical conditions among the HIV patients are also in increase as survival rate is increasing due to the advent of effective anti-retroviral therapy with multiple drugs.

The reason for increase in the HIV infection rate in developing countries like India, Africa is due to the lack of awareness , multiple sexual partners , intravenous drug abuse , and unscreened blood transfusions.

Though unscreened blood transfusions have decreased due to awareness , there is steady increase in the rate of unsafe unprotected sex with multiple partners , premarital sex and extramarital sex. Since the number of HIV patients are raising day to day and the diagnosis is becoming very easy, early detection, careful follow up, counseling and proper institution of antiretroviral therapy has led to the increase in the life expectancy of the HIV/ AIDS patients. Hence the opportunistic infections are increasing which is dependent on the CD4 counts of the Patient though the opportunistic infections are mainly medical diseases, there are few surgical conditions which occur in HIV patients which lackproperdata. This initiated a drive to learn about the prevalence of surgical disease in HIV / AIDS .

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AIM OF STUDY

AIM OF STUDY

- To definethe prevalenceof all surgical conditions among HIV infected patients attending the surgical/surgical superspecialityOPDs/ In patients/ Surgical casualty of TMCH , THANJAVUR
- To study the prevalence of all surgical conditions among AIDS patients attending the ART OPDof TMCH , THANJAVUR
- To study about various Acute surgicalemergencies in HIV/AIDS patients
- To study age and sex incidence in these patients.
- To know the outcome and management
- To study the clinical presentationof these HIV patients with surgical disease.

HISTORICAL ASPECTS

HISTORICAL ASPECTS

The firstincidence of this new syndrome came in 1981 withtwo reports from New york and Los Angeles of the outbreak of two rare diseases namely Kaposi sarcoma and pneumocystiscarinii pneumonia .In 1983lucmontagnier from Pasteur institute isolated a retrovirus from west African patient with persistent generalized lymphadenopathy and called Lymphadenopathy associated virus . In 1984Robert Gallo fromNationalInstitute of Health, USAcalled itHumanT-cellLymphotropicVirus type3. In 1985 ELISA came available for the detection of HIV.In 1986 the term HIV was coined.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

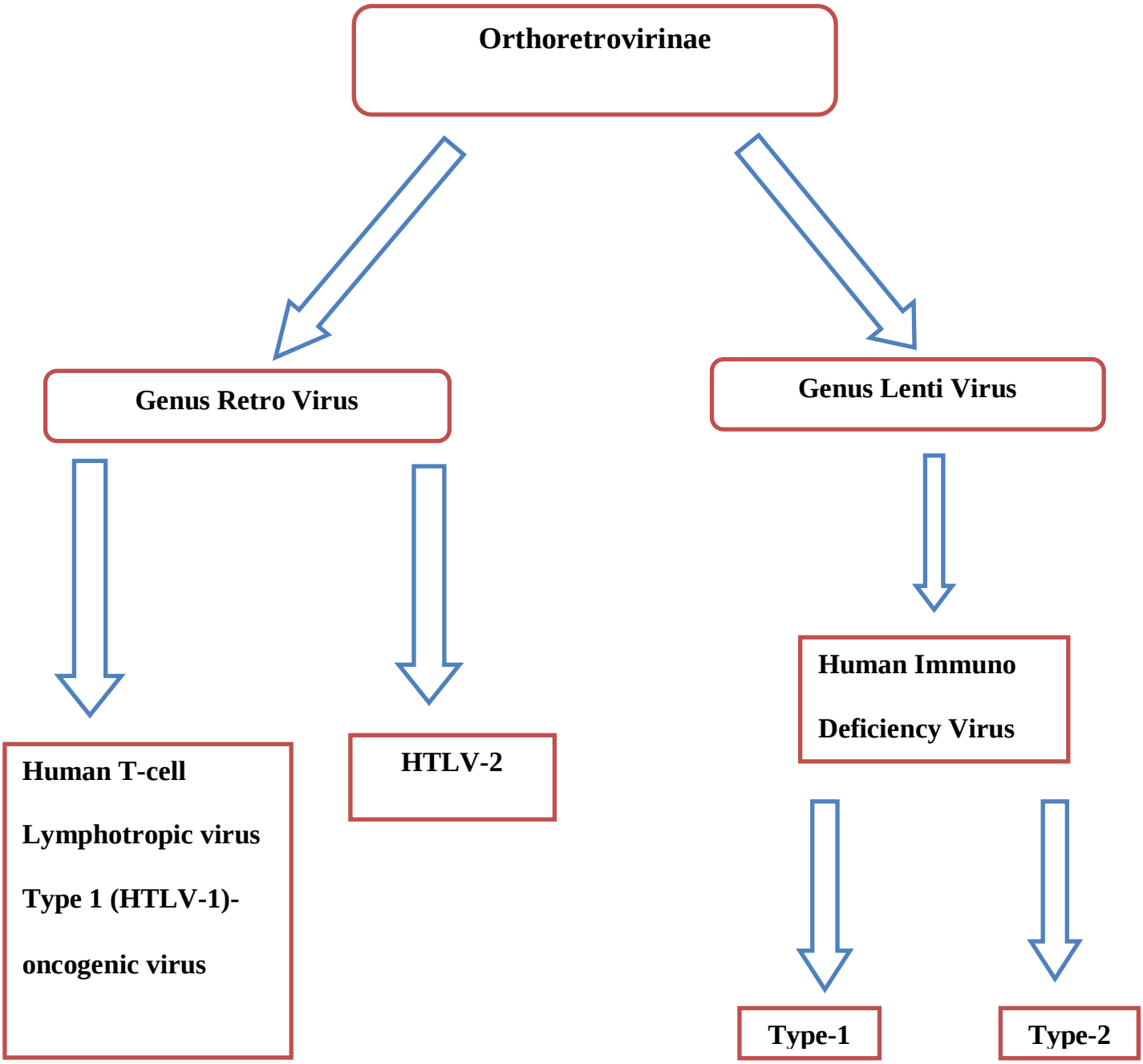
ETIOLOGY:

AIDS, AcquiredImmuno Deficiency Syndrome is a clinical syndrome caused by Human Immunodeficiency Virus [HIV]. HIV viruses are RNA viruses that belong to the family Retroviridae. RETRO means backward in Latin.

The viruses of this family possessan enzyme called as Reverse transcriptase. The function of reverse transcriptase is that they produce DNA copy of RNA genome in the cells of their host. Hence reverse transcriptase enzyme is the characteristic of these viruses .

CLASSIFICATION

TheRetroviridae family is divided into 2 sub families : Orthoretrovirinae and Spumaretrovirinae. There are seven genera in this particular family, out of these 7, only 2 family has retroviruses that infect human. They are the Lentivirus and Retrovirus.


Orthoretrovirinae
Genus Retro Virus
Genus Lenti Virus
Human T-cell Lymphotropic virus Type 1 (HTLV-1)-oncogenic virus
HTLV-2
Human Immuno Deficiency Virus
Type-1
Type-2

HTLV-1 causes Adult T- cell Leukemia / Lymphoma.

HTLV-2 is not associated with any disease but it has been noted in intravenous drug abusers. HIV -1 and 2 are responsible for clinical syndrome of AIDS .

MORPHOLOGY:

HIV is a spherical enveloped virus , about 90-120 nm in diameter .

It has two similar copies of single stranded positive sense RNAgenome . In association with this RNA is the enzyme reverse transcriptase . The virus core is surrounded by a nucleocapsid which has protein . It also contains an envelope which is lipoprotein in nature which contains lipid derived from the host cell membrane and glycoproteins which are virus coded. The major virus coded envelope glycoproteins are the spikes projecting on the surface and the anchoring trans membrane pedicles . These spikes bind to the receptors- CD4 on the host cells which are susceptible . Transmembrane pedicles cause cell fusion .

The HIV genome consist of 3 structural genes namely gag ,pol and env which are characteristic of all retro viruses . There are five non – structural genes namely the vpr ,vif , nef, rev and tat which are present in both HIV -1 and HIV – 2 . HIV-1 specific gene is vpu and HIV-2 specific gene is vpx .

Hence infected patients serum will have antibodies to these antigens . The detection of these antigens and antibodies is of great importance in the diagnosis and prognosis of HIV/ AIDS

Table:1 –The genetic products of HIV (HIV antigens)

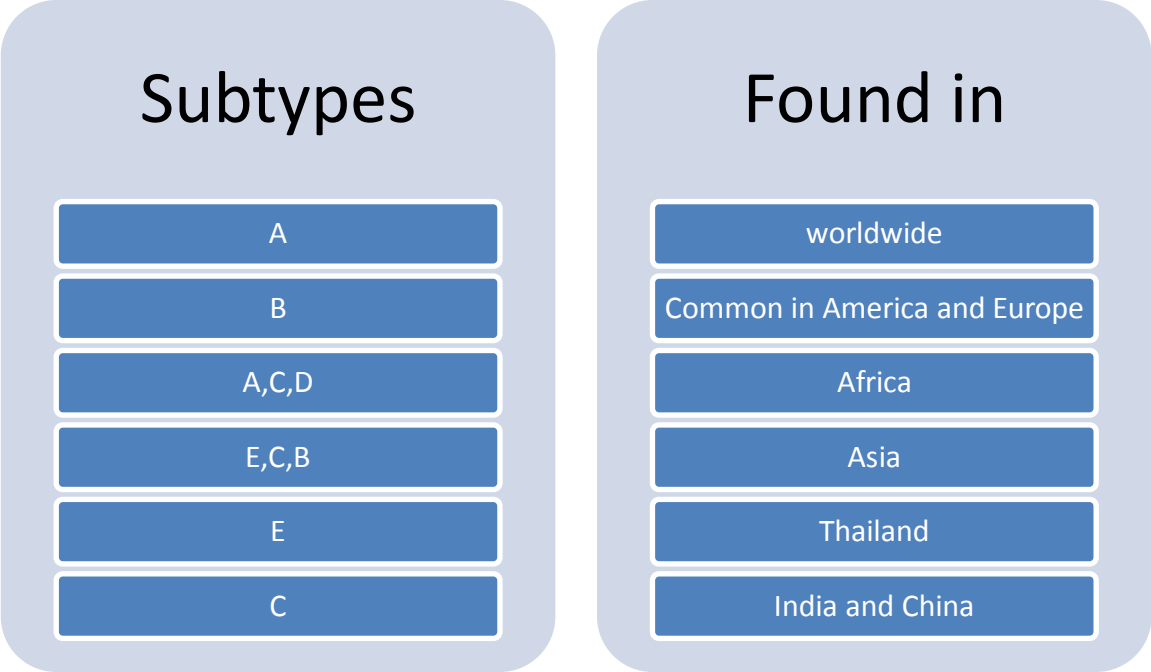
Gene	Coding of HIV antigens	Antigens
gag	(a) Shell Antigen (b)Core Antigen	p18 (nucleocapsid protein) p24 (principal core antigen), p 15 , p 55
pol	Reverse transcriptase antigen	p31 , p51 , p64
env	Envelope antigen	gp120 (principal envelope spike antigen) gp41 (transmembrane antigen)

ANTIGENIC VARIATION :

HIV often undergoes antigenic variation of core and envelope antigens.Two different antigenic types of HIV have been identified – HIV-1 and HIV-2. Antigenic variation occurs within both the species HIV-1 and HIV-2. HIV-1 represents the original isolate from America , Europe and the other Western countries , whereas HIV-2 represents isolates predominantly from West Africa which weakly reacts with HIV-1 antisera .

The envelope antigens of the two types are not the same. Their core polypeptides show some cross reactivity. HIV-2 is more closelyrelated to simian immunodeficiency virus rather than HIV-1.

HIV-1 strains have been classified into ten subtypes A to J , based on sequence analysis of their gag and env genes .



Antigenic differences between various HIV strain may be essential in lab diagnosis.

Infections by HIV-1 or HIV – 2 may not be identified unless the corresponding type is utilized in the test antigen. It is also important to use antigens containing the prevalent subtypes in different countries .

The subtypes seem to vary in frequency by various routes .

Subtype C and E --- Common in Asia and Africa – heterosexual contact

Subtype B --- Americans strains – blood borne – by injection and homosexual contact.

CELL TROPISM:

HIV infects all cells expressing at their surface the CD4 antigen, which is the receptor for the virus.

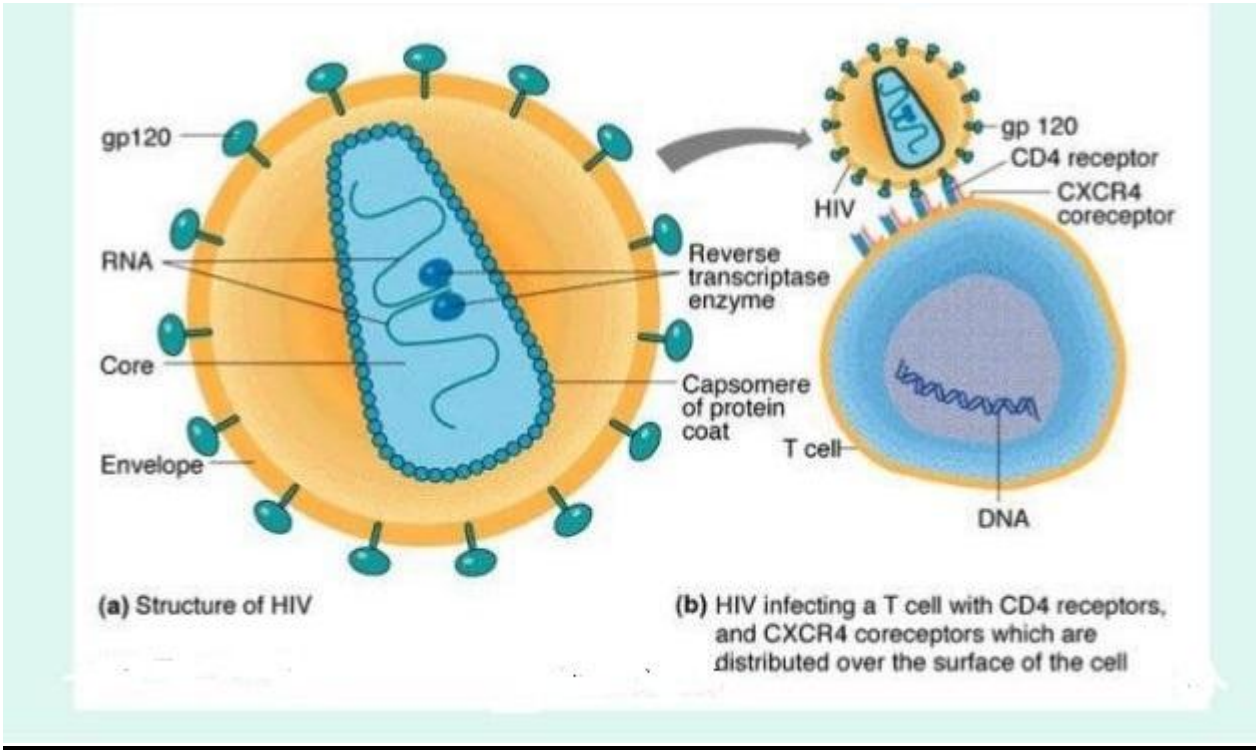
The spikes (gp120) of the viral envelope specifically attaches to the CD4 antigen and antibodies to CD4 protein block the virus binding site.

T4 Lymphocytes are mainly involved in HIV infectkion but other human cells which expresses CD4 are also susceptible. These cells are 5-10% of B lymphocytes , 10-20% of monocytes and macrophages . CNS containing Glial cells and microglia are also infected.

After binding to CD4 of host cell , the gp 41 terminus is exposed and host cell membrane compiles with the viral membrane. Thus the viral core enters the cytoplasm of the host cell. Cell fusion and virus entry also requires a corereceptor molecule , which is identified as CXCR4 for T cell -tropic HIV strains and CCR5 macrophage-tropic strains.

Infected CD4 cells express a huge level of gp 120 on their surface . The gp 120 on the surface of infected cells will lead to fusion of cells with C protein of non-infected near by cells , with formation of multinucleated syncytial cells. Lysis of fused cells atlast occur resulting in depletion of many number of non-infected cells from the circulation.

FIGURE:1:(a) HIV structure (b) HIV infecting a T cell with CD4 receptors and CXCR4 Coreceptor:



RESISTANCE:

Detergents: Due to the presence of lipid membrane in its envelope, it is highly susceptible to detergents , hence, washing with detergents is adequate for decontaminating clothes and household utensils.

Temperature: HIV is sensitive to heat , being inactivated at 56*c in 30 minutes and in seconds at 100*c. At roomtemperature , it may survive up to a week

Disinfectants: It is inactivated in 10 minutes by treatment with 2% freshly prepared glutaraldehyde , 70% ethanol , 0.5 % Lysol , 35% isopropyl alcohol and 3 % hydrogen peroxide . For treatment of contaminated medical instruments , a 2% glutaraldehyde solution is useful.

Lyophilisation: The virus withstands Lyophilisation.

MODES OF TRANSMISSION:

There are 3 main modes of transmission

Sexual contact, parenteral and perinatal .

1.**Sexual contact (0.1-1.0%):** It is the most important mode of transmission. Sexual transmission takes place between homosexual as well as heterosexual individuals. HIV has been separated from semen , which are the important modes of transmission. The risk of acquiring HIV infection develops if genital ulcers are present , as in syphilis or chancroid . Risk is also is hugely prevalent if more than one sexual partners are there.

2.**Parenteral Transmission (>90%):** This occurs after receiving infected blood transfusions, products of blood , sharing contaminated syringes and needles. It happens inintravenous drug abusers or accidental inoculation as well.

3.**Perinatal transmission (30%):** Infection can be transmitted from a mother who is Infected, to her new born either transplacentally or perinatally . At the time of birth , infection can also develop from the genital secretions and mothers milk after birth.

PATHOGENESIS:

After its entry into the blood stream , HIV comes in contact with the suitable host cells mainly the CD4 lymphocytes . Once it enters the cell , RNA is transcribed by reverse transcriptase into DNA (provirus). The provirus is integrated in the genome of infected cell causing latent infection . Long and variable incubation time of HIV infection is because of initiated and release of progeny virions to infect other cells . In infected , HIV can be isolated from blood, cell free plasma , semen , breast milk, urine, tears , cervical secretions and saliva.

Infection causes damage to T4 lymphocytes . T4 cells are decreased in numbers and T4:T8 (helper :suppressor) ratio is reversed. Viral infection can depress the function of infected

cell without damaging. This leads to the recognized damping effects on Cell Mediated Immunity. Functions of other cells (macrophage and monocytes) areaffected apparently due to the absence of secretion of activating factors by T4 lymphocytes.

Clinical manifestations of HIV infections are due to failure of immune responses. This renders the patient susceptible to life threatening opportunistic infections and malignancies . Degenerative neurological lesions and Dementia can also be seen in AIDS. This may be because of the direct effect of HIV on Central Nervous System.

CLINICAL FEATURES :

The clinical course of the infection with HIV can present as follows :

1.**Acute HIV infection** : The illness is mainly characterized by acute onset of fever , malaise , myalgia , skin rash , arthralgia , sore throat, and lymphadenopathy. Peripheral blood shows lymphocytosis . Viral nucleic acid or viral p24 antigen can be detected during acute infection. HIV antibodies are negative at the onset of illness but become positive during the course.

2.**Asymptomatic infection**: It includes all infected persons who are clinically normal. They show positive HIV antibody tests , and are infectious.

3.**Persistent generalized lymphadenopathy(PGL)** : This group is mainly characterized by enlarged nodes at 2 or more extragenital sites for atleast 3 months. PGL must be differentiated from other causes of lymphadenopathy.

4.**Symptomatic HIV infection** : When CD4+ T lymphocyte count decreases below 400 per mm^3 the patient can develop symptoms like diarrhoea , night sweats , opportunistic infections, weight loss and fever . During this condition some patients may develop an illness known as AIDS related complex or condition(ARC).

When CD4 + cells fall below 200per mm^3 , the titre of virus will increase markedly and there will be irreversible breakdown of immune defence mechanisms, it is what is called as AIDS . Most of the patients with HIV disease die of infections other than HIV e.g. opportunistic infections and malignancies . AIDS is terminal stage of HIV infection.

In addition to opportunistic infections , patients can develop primary CNS lymphoma and progressive multifocal leukoencephalopathy myelopathy, Dementia , peripheral neuropathy, severe encephalopathy, motor disturbances and diminished concentration may develop inpatients with HIV infections.

Opportunistic infections and malignancies commonly assosciated with HIV infection

i. **Bacterial**

1.Salmonellosis

2.M.avium complex

3.Mycobacterial infections – Tuberculosis and non tuberculous infections .

ii. **Mycotic**

1.Histoplasmosis

2.Coccidiodomycosis

3.Candidiasis

4.Aspergillosis

5.Pneumocystisjiroveci pneumonia

iii. Viral

1.CMV
2.Varicella –Zoster
3.Herpes simplex
4.Epstein –Barr (EB) virus/
5.Human herpes virs 6(HHV6)
6.Human herpes virus (HHV8**)**

iv. Malignancies

1.Kaposis sarcoma
2.B-cell lymphoma or non –Hodgkins Lymphoma

v. Parasitic

1.Isosporiasis
2.Generalizedstrongyloidiasis
3.Toxoplamosis
4.Cryptosporidiosis

CLINICAL TYPES

Incubation period of AIDS varies from 1-14 years , with an average of 6 years .

1.AIDS in Adults

Risk factors for AIDS include:

i. Blood transfusion
ii. Intravenous drug abusers
iii. Anal and genital sex
iv. Haemophiliacs treated with blood or blood products

2.Paediatric AIDS

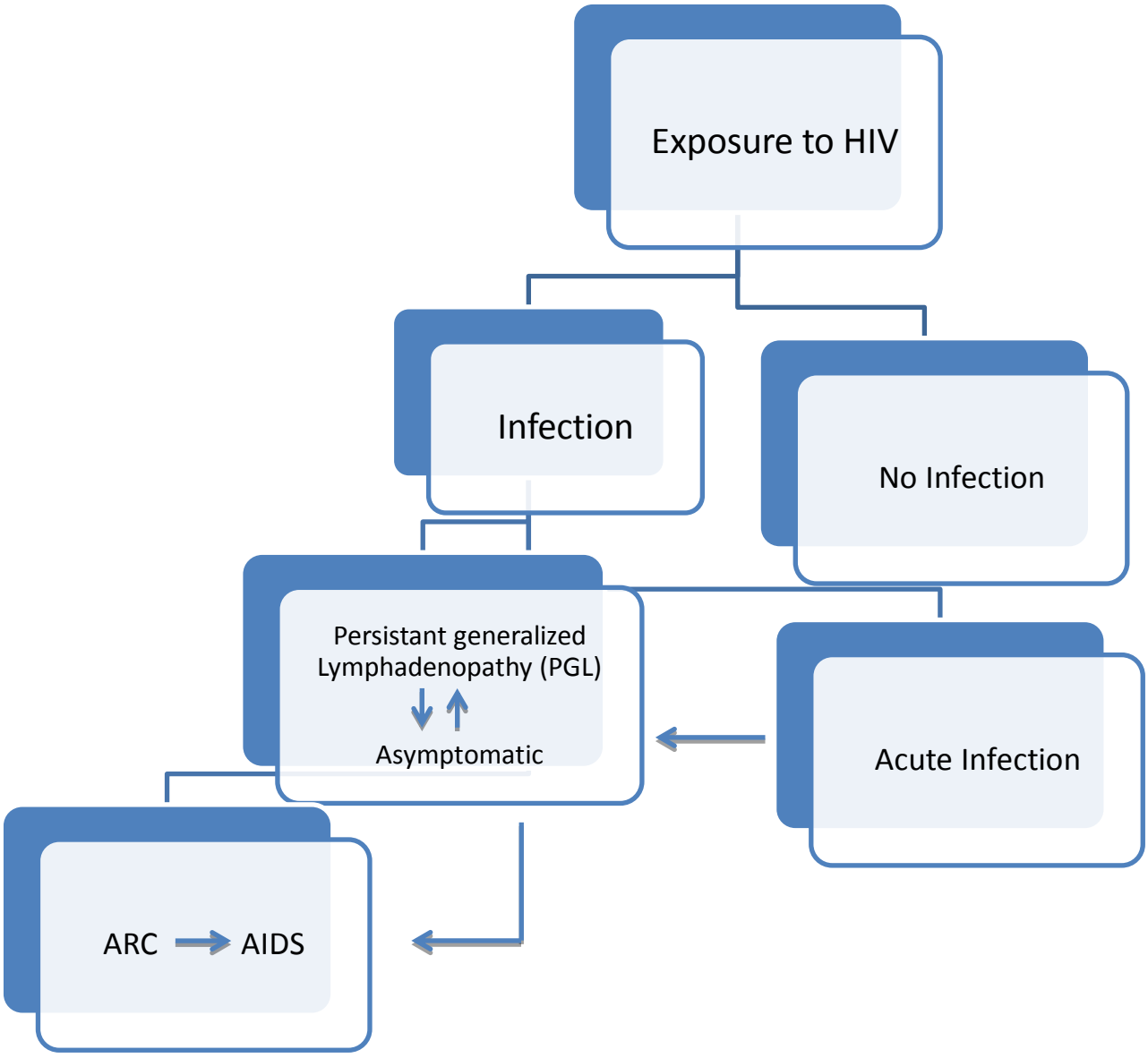
Infection is transmitted from

i. Transfused blood or blood products

ii. Infected mothers

Kaposissarcoma , toxoplasmosis and cryptococcosis are commonly seen in adults but less commoninchildren.

CLINICAL RESPONSE TO HIV IN ADULTS



Four clinical stages of AIDS for adults and adolescents with confirmed infection has been defined by World Health Organization. Initiation of anti retroviral therapy is based on these clinical stages.

WHO Clinical staging of HIV in adults and adolescents with HIV infection confirmed

Clinical stage 1

- Persistent generalized lymphadenopathy
- Asymptomatic

Clinical Stage 2

- Herpes Zoster
- Seborrheic dermatitis
- Fungal nail infections
- Angular cheilitis
- Recurrent oral ulceration

- Recurrent respiratory tract infections (e.g. tonsillitis , otitis media , pharyngitis, sinusitis)
- Moderate unexplained weight loss (<10% of presumed or measured body weight)
- Popular pruritic eruptions

Clinical stage 3

- Pulmonary tuberculosis (current)
- Unexplained anemia (<8g/dl) , neutropenia (<0.5 x10^9/L)
- Chronic thrombocytopenia (<50x10^9/L)
- Persistent oral candidiasis
- Oral hairy leukoplakia
- Unexplained severe weight loss (>10% of presumed or measured body weight)
- Severe bacterial infections (e.g., pneumonia, pyomyositis, empyema,bacterial bone or joint infection , meningitis)
- Acute necrotizing ulcerative stomatitis , periodontitis or gingivitis

- Unexplained chronic diarrhoea for longer than 1 month
- Unexplained persistent fever (above 37.6*c , intermittent , constant , for longer than 1 month)

Clinical Stage 4

- Pneumocystis jirovecii
- HIV encephalopathy
- Extra pulmonary tuberculosis
- Chronic isosporiasis
- Central nervous system toxoplasmosis
- Progressive multifocal leukoencephalopathy
- HIV wasting syndrome
- Recurrent severe bacterial pneumonia
- Lymphoma (cerebral or B-cell non –Hodgkin’s) or other solid HIV – associated tumors

- Kaposi’s Sarcoma
- Disseminated nontuberculous mycobacterial infection
- Disseminated mycosis
- Invasive cervical carcinoma
- Recurrent nontyphoidal Salmonella bacteraemia
- Symptomatic HIV – associated nephropathy or symptomatic HIV- associated cardiomyopathy
- Atypical disseminated leishmaniasis
- Extra pulmonarycrytococcosis , including meningitis
- Chronic herpes simplex infection (genital, orolabial, or anorectal , longer than 1 months duration , or visceral)
- Oesophagal Candidiasis (Candidiasis of lungs, bronchi, trachea)

Unexplained means the condition which is not explained by other causes.

LABORATORY DIAGNOSIS

Laboratory diagnosis of HIV infection includes specific tests for the virus and tests for immunodeficiency.

1.Non specific tests

i. Platelet count

ii. T-lymphocyte subset assays

iii. Total and differential leucocyte count

iv. IgG and IgA levels

v. Skin tests for CMI

2.Specific tests for HIV infections

i. Antibody detection

ii. Detection of viral nucleic acid

iii. Antigen detection : p24 antigen

iv. Virus isolation

NON-SPECIFIC TESTS

Total and differential leucocyte count

In AIDS , there is leucopenia with a lymphocyte count less than 400 per mm^3

Platelet count

There is thrombocytopenia in patients of AIDS

T-lymphocytes subset assays

The normal CD4:CD8 T-cell ratio of 2:1,is reversed to 0.5:1 incases of AIDS. The count of CD4

lymphocytes falls below $200mm^3$

Platelet count

There is a thrombocytopenia in patients of AIDS

IgG and IgA levels

Both IgG and IgA levels are raised

Skin tests for CMI

Cell mediated immunity is decreased as seen from tuberculin test or other skin tests for CMI

SPECIFIC TEST FOR HIV INFECTION

Antibody detection

Demonstration of antibodies is the simplest and most commonly used technique for diagonosis.It requires several weeks to months for antibodies to appear after infection.IgM antibodies appear first usually in about 3-4 weeks after infection,to be succeeded by IgG antibodies.IgM antibodies disappear in 8-10 weeks while IgG antibodies remain throughout life.Due to severe AIDS,some components of anti-HIV antibody may diappear.eg.anti-p24.

HIV affected patients remain negative for antibodies during window period,when initial viral replication occurs for about 2-3 weeks .

The diagnosis of HIV infection is done by detecting serum antibodies to viral proteins,both core (p24) or envelope (gp120,gp41).The serological tests are

- Screening
- Supplemental

Detection of viral nucleic acid

Viral nucleic acid can be identified by polymerase chain reaction(PCR) .Two types of PCR have been used ,DNA PCR and RNA PCR..In the DNA PCR ,peripheral lymphocytes are lysed and the proviral DNA is amplified. The test is highly specific and sensitive. The related test like RNA PCR can be used for diagnosis and also for monitoring the level of viraemia.The PCR tests are costly which are indicated only when some other methods give inconclusive result.

Antigen Detection

The virus antigen (p24)and reverse transcriptase (RT) may be detected in blood after about a period of two weeks following a single massive infection.The p24 antigen is the earliest virus marker to appear in the blood .Antibody becomes detectable with seroconversion and antigen p24 disappears from circulation and remains absent during the long asymptomatic phase.The p24 antigenemia reappears with the onset of clinical disease which corresponds to loss of anti p24 antibody.The p24 capture assay (ELISA) by using the anti p24 antibody as

thesolid phase can be used for the detection of this antigen.

Viral isolation

Virus is not routinely isolated for diagnosis.Once a personis infected with HIV,he/she remains infected for life.The virus which is present in blood and body fluids are mostly within CD4 lymphocytes.so, it can be isolated from CD4 lymphocytes of peripheral blood and bone marrow.

In the presence of Interleukin-2, patients blood sample are co-cultivated with uninfected humanlymphocytes.Viral replication can be detected by demonstration of reverse transcriptase activity and presence of viral antigen p24 in the culture fluid.

Viral titres are more early in infection before antibodies appear.The antibodies do not detoxify the virus and the two may coexist together in the body duringasymptomatcic infection viraltitres are less and may not be detected but when clinical disease sets in, titres raise again.

Specific tests for laboratory diagnosis of HIV infection

Test	**Window period**	**Acute infection**	**Asymptomatic infection**	**ARC and AIDS**
Antibody ELISA test WESTERN BLOT test	— —	+ +	+ +	+ +
Virus isolation	++	±	—	+
Antigen;p24	+	+	—	+

Screening tests

ELISA test:

Direct solid phase ELISA is most commonly used.The antigen which is prepared from HIV is grown in continuous Lymphocyte cell line by recombinant technique.The viral antigen is covered along the surface of microtitre , test serum is added and

if antibodies are present, it binds to the viral antigen unbound serum is washed away,anti humangoat immunoglobulin attached to suitable enzyme is added followed by a colour formingsubstance.If the test is positive,photometrically detectable colour is formed which can be read by ELISA reader. This is highly sensitive and specific test.

The early diagnostic tests (first generation)used purify lysate as antigens.The second generations test used recombinant viral proteins.The third generations tests are double antigen sandwichassay.In this viral antigens is attached to a solid phase to which binds antibody to HIV from patients serum. Then labelled HIV antigen is added which attaches to the patient's antibody and measured.The Fourth generation test detects both antibody and antigen.

ELISA Test is good screening test and most laboratories use commercial ELISA Kit which contains both HIV-1 and HIV-2.

Saliva is alternative to serum for antibody testing by ELISA.This is specially useful for injectable drug users who might have collapsed blood vessel

Rapid Test

These Tests consume less than thirty minutes and does not require expensive equipments.This includes Lateral flow assays,Dot blot assays,HIV spot,Coomb's test and particle agglutination.

Simple tests

- They take 1-2 hours and do not require expensive equipment.

Supplemental test

Western blot test

HIV proteins are separated by polyacrylamide gel electrophoresis.The separated proteins are blotted into strips of nitro cellulose paper.The strips are reacted with test sera.Antibodies to HIV Proteins,if present in test serum,combine with different fragments of HIV. The strips are washed and reacted with enzymes conjugated anti human globulin.

The suitable substrate is added which produces color bands.The position of the color bands indicate the fragments of antigen with which the antibodies have reacted .In a positive serum, bands will be seen with multiple proteins.Antibodies to p24(gag gene,core protein)p31(reverse transcriptase,pol gene)and GP165,GP120 or GP 141(envelope protein,env gene)are detected. A positive reaction with proteins representing three genes(env,pol ,gag)is conclusive evidence of HIV infection.The test is considered as positive if it shows bands against at least two of the proteins:gp41,p31,p24,gp120/160.

Interpretation of Western blot test is difficult when bands appear only at one siteas with gp120,p24.A positive result in anyone screening test will not be accepted without confirmation.It is the practice to use the Western blot test for confirmation.The practice now is to perform either two different typesof ELISA or any rapid test with an ELISA.The serumpositive in both tests considers as positive. In case of

doubt the sample is retested after one or two months.

Indirect immunofluorescence test:

HIV infected cells are fixed onto the glass slides and then reacted with serum followed by fluorescein conjugated anti-human gamma globulin.In a positive test, apple green fluorescence appears when examined under fluorescent microscope**.**

SRATEGIES FOR HIV TESTING IN INDIA

Strategy 1:

When serum is subjected to E/R/S test and if positive,the sample is considered as HIV infected and if negative,the sample is taken as uninfected from HIV.This method is used for promoting donation safety(organ, blood tissue,)A highly sensitive and reliable kit should be used for this purpose.

Strategy11A:

If the first test (E/R/S) is found to be negative,there is no need for retesting the sample butin case its positive, it is retested with a second E/R/S test based on different test

principle and different antigen preparation.It is considered as positive after the second E/R/S test if second test is positive otherwise it is considered as negative.This strategy is used for HIV surveillance.

Strategy IIB:

Serum sample is processed as in strategy IIA , but a sample positive with first E/R/S test and negative withsecond test is subjected for third E/R/S test . The sample is considered as equivocal only if the third test is positive such persons must be again retested after a period of 2-4 weeks . The sample is reported as negative , if the third test is negative. Based on the test principle and different antigen preparation , 2-3 different E/R/S tests are used. A positive report can be given to the person , if the two tests are positive. This method is used for diagnosis of an individual who are with symptoms suggestive of AIDS clinically.

Strategy III:

This strategy is similar to strategy IIA with third E/R/S test as a confirmation. Based on different antigen preparation or test principle , the third test should be done . A serum testing is positive only if all the three E/R/S tests are reported as positive. If the serum specimen is negative in third E/R/S test then it is considered equivocal. These persons must be tested again after three weeks. If this specimen also provides an equivocal result , then the patient is considered as negative for HIV antibody. This strategy is used for detecting of HIV infection in asymptomatic individuals .

Among these strategies the first test selected should be of highest sensitivity and second and third testsshould be of highest specificity to eliminate the chance of false positiveresults.

TESTS FOR OPPORTUNISTIC INFECTIONS AND TUMOUR

Opportunistic infections:

These infections are mostly detected by direct microscopy. But in some cases culture is essential.

Due to decreased immune response, serological diagnosis cannot be reliable.

Tumor:

The persons with AIDS are oftenhave associated malignant tumors. It is frequently associated with homosexuals who are having AIDS.Most important of the malignant tumors are B-cell lymphoma, Kaposi's sarcoma, non Hodgkin's lymphoma . Kaposi's sarcoma is a malignant vascular tumor which arises from the endothelial cells of blood vessels.It causes painless bluish purple spots usually on the skin ,mucous membranes but also on the internal organs.

APPLICATIONS OF SEROLOGICAL TESTS

Serological test for HIV infection are used in the following situations

a) Diagnosis

b) Screening

c) Seroepidemiology

d) Prognosis

1.Diagnosis:

Antibody testing can used to examine whether the infection is the there or not. Following an exposure, It may be negative . However in acute illness and sometimes in very late cases the immune system is non reactive. HIV -2 infections are likely to be missed if antibody testing is done with HIV-1 antigen only. The serology if negative after two monthsof infection, serology need not be repeated upto 6 months . If antibody testing is negative , 6 months after exposure , infection is unlikely to have occured.

2.Screening:

It is done for all donors of blood products, blood, cells , tissues, semen, organs. As the antibody tests are negative , when the patient is infectious during the earlier stage of infection, screening cannot rule out of all harmful donors, but it can eliminate large ,majority of them. If an individual is positive for HIV antibody he/she should never be allowed to donate blood or some other

biological materials. HIV infection can be transmitted from mother to babybefore , during , or after delivery. Therefore antenatal screening may be recommended .

3.Seroepidemiology:

Serological tests have been helpful in detecting the geographical extent of HIV infection.

4.Prognosis:

Loss of detectable anti p24 antibody shows clinical deterioration of HIV infection. This is related with increased viral titre in blood and HIV antigenemia.

LABORATORY MONITORING OF HIV INFECTION

The tests used for monitoring course of HIV infection includes

1. Measurement of HIV RNA

2. CD4+T cell count

The most important among these is CD 4+ T cell count that indicates immunological

competence of the patients.Counts below 350/mm3 indicates progression of disease and the need for antiretroviral therapy. Antiretroviral therapy is started irrespective of CD4+T cell count in certain conditions.This includesHepatitis B and Tuberculosis co infections and also advanced clinical stages- 3 and 4(WHO).If the count falls less than 200/mm^3, it denotes the risk of serious infections.HIV RNA measurement is done by reverse transcriptase PCR (RT-PCR)assay. In the course of treatment, it is essential to measure HIV RNA.

EPIDEMIOLOGY:

HIV is transmitted through blood,semen ,vaginal fluid and also from infected mother to fetus.It is mainly sexually transmitted disease.It can occur in heterosexuals as well as homosexuals.

The danger of needle stick injury remains in paramedical and medical personnel,though the risk of infection has been estimated as 1%.Paramedical and medical staffs have to be educated on carrying forpatients with HIV infection.

Two sero types of HIV are found,HIV1 and HIV2. HIV 1 is world wide in distribution, HIV-2 is mainly seen in West Africa.AIDS cases resulting from HIV 1 OR HIV 2 infections are clinically

indistinguishable.Almost 60% adults with HIV infection develop AIDS within 5-10 years and majority of individuals who are infected develop AIDS eventually. All patients diagnosedas having AIDS die due to the associated opportunistic disease virtually .

In India ,the first case of HIV infection was found in female sex workers in Chennaiin 1986 and the first AIDS patient was from Mumbai in the same year.

The major manifestation of AIDS in Africa was profound wasting since then it has been named as slim disease.

PREVENTION:

The preventive measures recommended are the following:

1. Avoidance of sharing needles
2. Safe protected sex
3. Screening of Blood and blood products
4. Isolation of AIDS Patient and initiation of treatment
5. Control of infection

Avoidance of sharing needles:

The contaminated needles and syringes must not be shared.

Safe protected sex:

Use of condoms,avoidance of multiple sex partners

Screening of Blood and blood products :

All blood products and blood are to be screened for HIV. It is also applicable for organ donation

to screen involvement of cornea ,marrow , kidney , semen and other organs.

Isolation of AIDS Patient and initiation of treatment

Control of infection:

Individuals within risk groups are screened to identify the HIV infected person.

I. PROPHYLAXIS

There is no effective vaccine so far . The difficulty faced in producing an effective vaccine is

high rate of mutation of virus. Several strategies have been explored for vaccine preparation .

These include immunization with

i. modified whole virus

ii. Sub units , based on envelope glycoproteins

iii. target cell protection by anti CD4 antibody

These candidate vaccines are on clinical trials in humans.

II. ANTIRETROVIRAL THERAPY

Specific treatment with antiretroviral drugs is the mainstay in the HIV management.

HAART (Highly Active Antiretroviral Therapy) are highly effective in the inhibition of the replication of HIV in HIV infected individuals. Yet the major drawback with this therapy is the selection of resistant mutants. The Anti Retro viral drugs include both nucleoside inhibitors and non nucleoside inhibitors of enzyme reverse transcriptase,viral protease inhibitors ,integrase inhibitors , fusion inhibitors and entry inhibitor.These drugs are used in the form of monotherapy or in various combinations. Highly active antiretroviral therapy includes combinations like 2 nucleoside reverse transcriptase inhibitors combined with a protease inhibitor. High cost and their adverse reactions restrict their wide use in developing countries.

Apart from the specific Anti RetroviralTherapy , the other measures include

A.Prophylaxis and treatment of opportunistic infections and tumors

B.General management

C.Immuno-restorative measures

POSTEXPOSURE PROPHYLAXIS (PEP)

There is a risk of acquiring HIV infection with exposure to body fluids, blood,other infected material and by contaminated instrument. The risk of infection vary with the type of exposure and other factors. Health workers are normally at very low risk of acquiring infection during management of infected patients. Following exposure , post exposure prophylaxis (PEP) may be required depending upon the type of exposure and HIV status of exposure source. Basic PEP regimen contains two drug combinations while expanded PEP regimen is of three drugs. Zidovudine 300mg BD and lamivudine 150mg BD are the fundamental two drug regimen. In expanded three drug PEP regimen protease inhibitor is added to this combination of two drugs.

Among the protease inhibitors, Ritonavir 100mg BD or 200 mg OD or Lopinavir 400mg BD or 800mg OD are mostly used as third drug. These drugs are effective if started within the first 72 hours and ideally within 2 hours.The PEP should be continued for a period of 4 weeks. Before starting PEP, the risk of infection and possible side effects of antiretro viral drugs must be carefully considered. In addition to PEP the injured site must be thoroughly cleaned with soap and water. Antiseptics arealso preferred.

Exposed persons should have post PEP HIV testing, at three months and at six months.

If the test at 6 months after exposure is negative, no further testing is required.

ANTIRETROVIRAL DRUGS

Protease inhibitors

- Tipranavir (TPV)
- Ritonavir (RTV)
- Amprenavir
- Darunavir (DRV)
- Saquinavir (SQV)
- Indinavir (IDV)
- Atazanavir (ATV)
- Fosamprenavir (FPV)
- Nelfinavir (NFV)
- Lopinavir (LPV)

Fusion inhibitor

- Enfuviritide (T20)

Nucleoside reverse transcriptase inhibitors (NRIs)

- Abacavir **(**ABC)
- Zalcitabine (ddc)
- Tenofovir
- Zidovudine (AZT , azidothymidine)
- Didanosine (ddI)
- Stavudine (d4T)

- Emitricitabine (FTC)
- Lamivudine (3TC)

Non-nucleoside reverse transcriptase inhibitors (NNRTIs)

- Efavirnez (EFV)
- Etravirine (ETR)
- Delaviridine (DLV)
- Nevirapine (NVP)

Integraseinhibitor

- Raltegravir (RAL)

Entry inhibitor (CCR5-Co-receptor antagonist)

- Maraviroc (MVC)

Combination formulas of Antiretroviral drugs

NAME	COMBINATION
Truvada	Tenofovir + emtricitabine
Epzicom	Zidovudine + abacavir
Atripla	Tenofovir + emtricitabine + efavirenz
Combivir	Zidovudine + lamivudine
Triomune	Stavudine + lamivudine + nevirapine
Trizivur	Zidovudine + lamivudine + abacavir

PRINCIPLES OF THERAPY OF HIV INFECTION:

1. Progression of HIV leads to damage of the immune system and progression to AIDS

2. The magnitude of HIV replication and the rate of CD4+ T-cell destruction is indicated by the plasma HIV RNA levels

3. CD4 count indicates the level of competence of the immune system.

4. The progression of the disease rate differ among individuals and the decision on treatment should be individualized and should be based on the plasma HIV RNA and CD4 levels

5. Pregnant females should continue ART treatment.

6. Compliance is more important to ensure maximal effect from a given regimen.

7. The simple the regimen, easy for patient compliance.

8. Maximal inhibition of replication of the virus is the aim of therapy.

9. Greater the inhibition of viral replication, lesser the chance of developing drug resistant quasispecies.

10. The principles are same for children and adults.

11. HIV infected children are to be treated with unique pharmacologic, immunologic and virologic aspects.

12. The number of drugs available is limited. Hence decision on anti retroviral treatment has a long term impact on further options for the patient.

13. The antiretroviral drugs which are used in combination should be used in optimum schedules and appropriate dosage.

14. The best effective treatment strategies involve simultaneous initiation of combination of anti HIV drugs with which the patient has not been priorly treated with and also which are not cross resistant with the drugs that the patient has already received.

INDICATIONS FOR STARTING ANTIRETROVIRAL THERAPY IN PATIENTS WITH HIV INFECTION:

a) Acute infection syndrome

b) Chronic infection

1) Asymptomatic disease
   i. Pregnancy
   ii. CD4+T-cell count<350/µL[a]

2) Symptomatic disease (including HIV-associated nephropathy)

c) Post-exposure prophylaxis

[a]This is an area of controversy. Some will wait till CD4 comes to 200/µL, some others will treat everyone with a viral load >100,000 copies/ mL, whereas others will treat everyone regardless of CD4+ T-cell count.

INDICATIONS FOR CHANGE OF ANTIRETROVIRAL THERAPY IN PATIENTS WITH HIV INFECTION:

i. Clinical deterioration

ii. Persistently declining CD4+ T-cell numbers

iii. Less than a 1-log drop in plasma HIV RNA by 4 weeks after the initiation of therapy

iv. side effects

v. A reproducible significant increase(defined as three- fold or greater) from the nadir of plasma HIV RNA level not attributable to intercurrent infection, vaccination, or test methodology.

Generally when changing it should be initiation of at least two drugs to be effective in the given patient. The exception is the change made to manage toxicity, in case a single substitution is reasonable.

MATERIALS AND METHODS

MATERIALS AND METHODS

The present study was undertaken with the following objectives.

1. To define the prevalence of all surgical conditions among HIV infected patients attending the surgical /surgical super specialty OPDs/In Patients/surgical casualty of TMCH, Thanjavur.
2. To study the prevalence of all surgical conditions among AIDS patients attending the ART OPD of TMCH, Thanjavur.
3. To study about the various acute surgical emergencies in HIV /AIDS patients.
4. To study the age and sex incidence in these patients.
5. The outcome and type of the management.
6. To study the presentation of these HIV patients with surgical disease.

A study of prevalence of surgical conditions among HIV/AIDS patients in Thanjavur Medical College, Thanjavur

PATIENTS AND METHODS:

In this series I have taken sixty cases of HIV/AIDS patients for study during JULY 2015 to AUGUST 2016.

These 60 cases were HIV/AIDS patients on or not on antiretroviral therapy and a few were newly diagnosed as HIV patients when they came for a surgical illness. Patients from the surgical OPD/In Patients/surgical specialty OPD/In Patients /ART OPDs were considered for this study.

TYPE OF STUDY:

Prospective and observational study.

APPROVAL:

Prior to starting the study approval has been obtained from the ethical committee of Thanjavur medical college, Thanjavur.

STUDY PLACE:

Thanjavur medical college and hospital,
Thanjavur-613004.

STUDY PERIOD:

JULY 2015-AUGUST 2016.

SAMPLE SIZE:

Sixty (60).

INCLUSION CRITERIA:

Allpatients presenting to the surgical /surgical specialties OPDs/In Patients/surgical Casualty /ART OPD with surgical illness were included.

EXCLUSION CRITERIA:

The patients of medical/ medical speciality OPD were excluded.

Patient with Medical conditions in ART OPD were excluded.

Patients less than 12 years of age.

Withdrawal /refusal of consent.

PARAMETERS STUDIED:

Data on patient's name, age, sex, comorbid illness, number of years since ART, Presentation to the surgical OPD diagnosis, management and the outcome will be recorded statistical analysis will be carried out.

PROCEDURE:

The questionnaire was designed depending on the objective of the study and it has been already piloted and suitably modified (proforma enclosed).

It has the following details:

1. Age and sex
2. Occupation
3. Socio economic status
4. Complaints
5. History of presenting illness
6. Past history (comorbid illness)
7. Clinical examination
8. Investigations (Complete Blood Count, renal function test , BT , CT, urine routine and other investigations as required.)
9. Radiological investigations as needed.
10. Management (medical/surgical)
11. Postoperative period
12. Outcome

After admission short history was taken and physical examinations was conducted on every patient admitted to general surgery/surgical superspecality department. Base line investigations, were routinely done followed by radiological investigations as required. Patients were explained about the nature of the disease process and the various possible line of management. All the essential information with regards to the study was explained either to the patient themselves or their guardian. Written informedconsent was taken either from the patient or from their guardian willing to enroll themselves in the study. Detailed history was taken from the patients to establish the diagnosis properly. Thorough general and systemic examination was done in every case. Data collection sheet were filled in by myself. According to the patients diagnosis patients were treated either medically or surgically. Patients who required surgical management were taken up accordingly as elective or emergency for surgery. Strict aseptic universal precautions were followed during the surgery. After completion of the data it was compiled systematically.

ETHICAL CONSIDERATIONS:

All the patients/guardians were told about the study and also about the nature of illness and about the merits and demerits of the surgery if planned, expected results and outcomes. If the patient agrees, he/she can be selected for the study. The study didn't have any significant risk/ it did not involve any special or additional investigation. It didn't pose economic burden to any of the patient. The study was approved by the institutional review board before the commencement of data collection. Informed consent was taken from each patient/guardian.

DATA ANALYSIS:

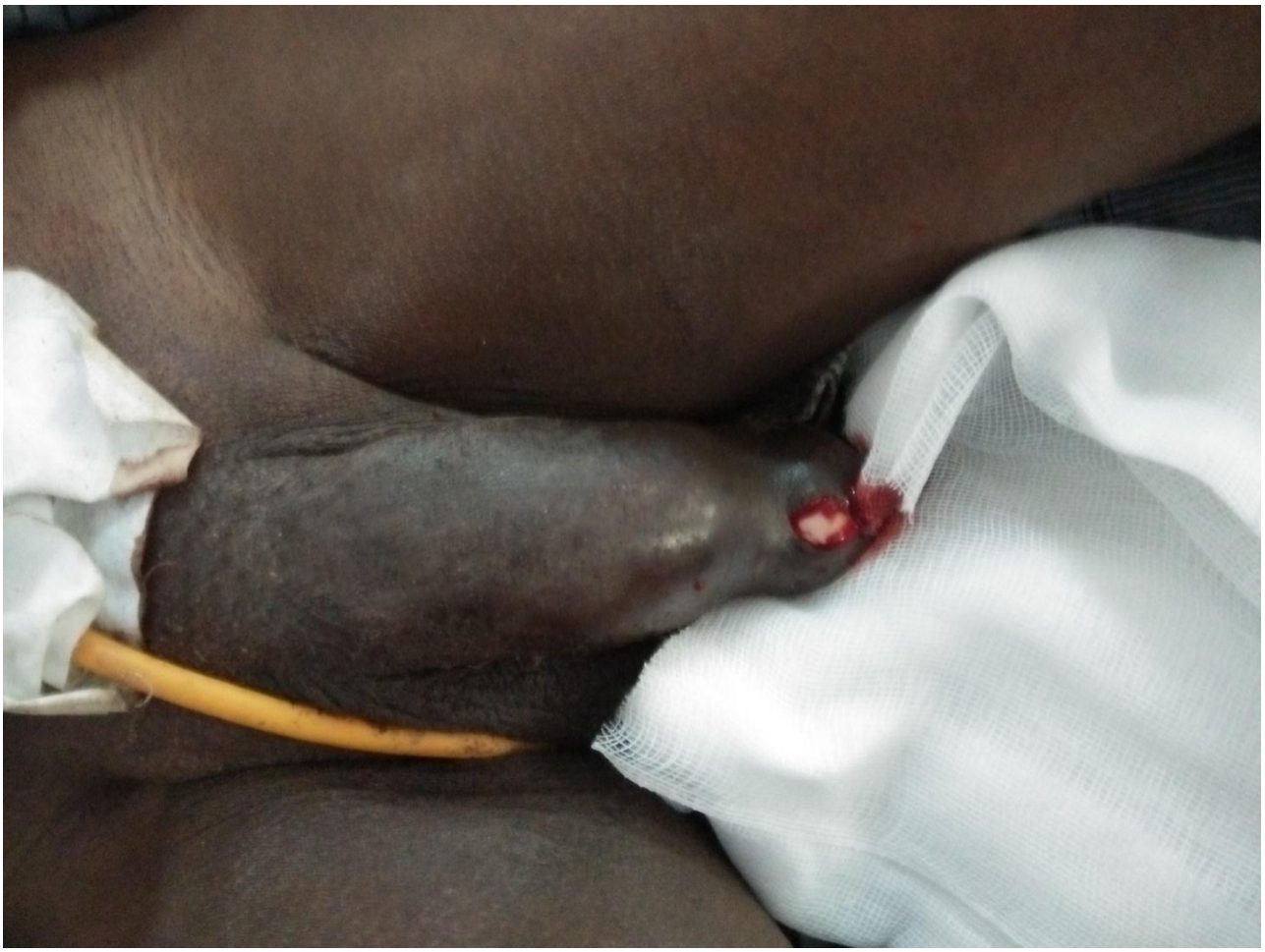
Data was analysed both manually and also by using computer. The data which was calculated were arranged in a systematic fashion, presented in various tables and figures and statistical analysis were done to evaluate the objectives of the present study with the help of statistical package for social science.

PENILE ABSCESS IN AN AIDS PATIENT:

Shown below is the picture of a patient who had urethral stricture with penile abscess for which Incision and Drainage of abscess with Supra Pubic Cystostomy was done.

This case needs a special mention as uncommon abscesses being common in AIDS patients. This patient is a 60 year old labourer on ART since 8 years.

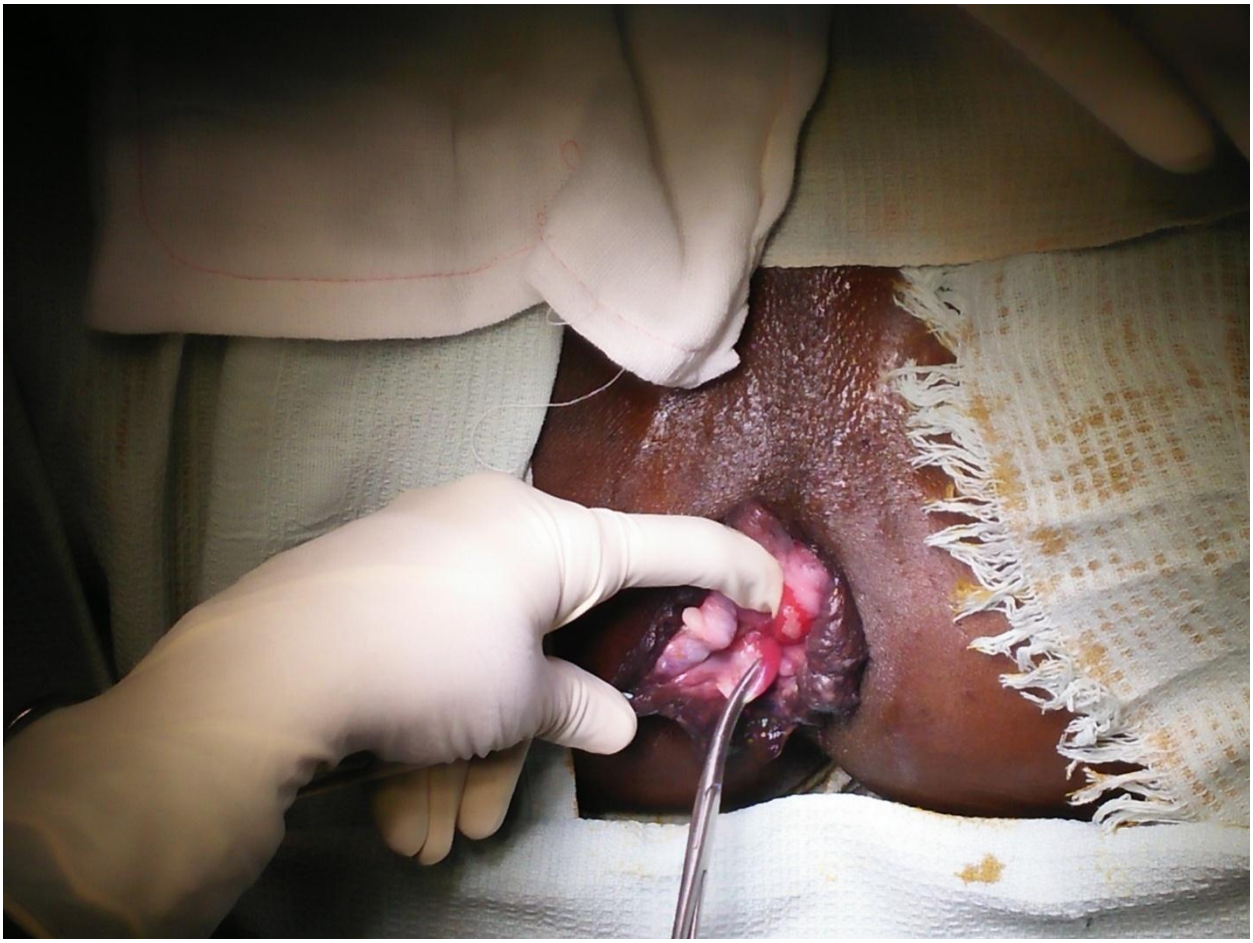
FIGURE 2:PENILE ABSCESS PATIENT ON SPC/INCISION AND DRAINAGE DONE:



HEMORRHOIDS IN AN AIDS PATIENT:

This 36 years male waiter by occupation was 3 years on ART came with third degree hemorrhoids and secondary hemorrhoids with hypertrophied papillae

FIGURE-3:MILLIGAN MORGAN OPEN HEMORRHOIDECTOMY



RESULTS

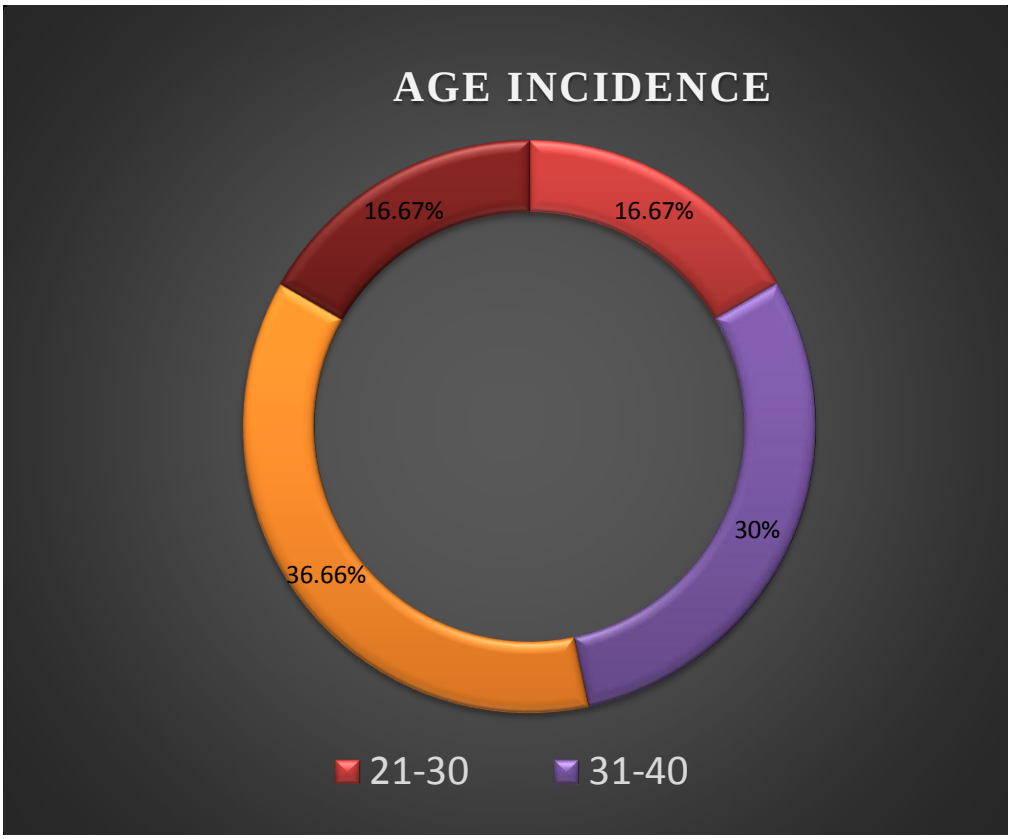
RESULTS:

A prospective observational study was done to define the prevalence of all surgical conditions among HIV/AIDS patients. 60 patients were studied who satisfied the inclusion criteria. All these patients were taken from the surgical/surgical speciality departments of Thanjavur medical college, Thanjavur, from JULY 2015-AUGUST 2016. All patients were examined clinically and only important investigations were done before surgery. The results obtained are as follows:

AGE INCIDENCE:

TABLE 1: Age distribution of patients.

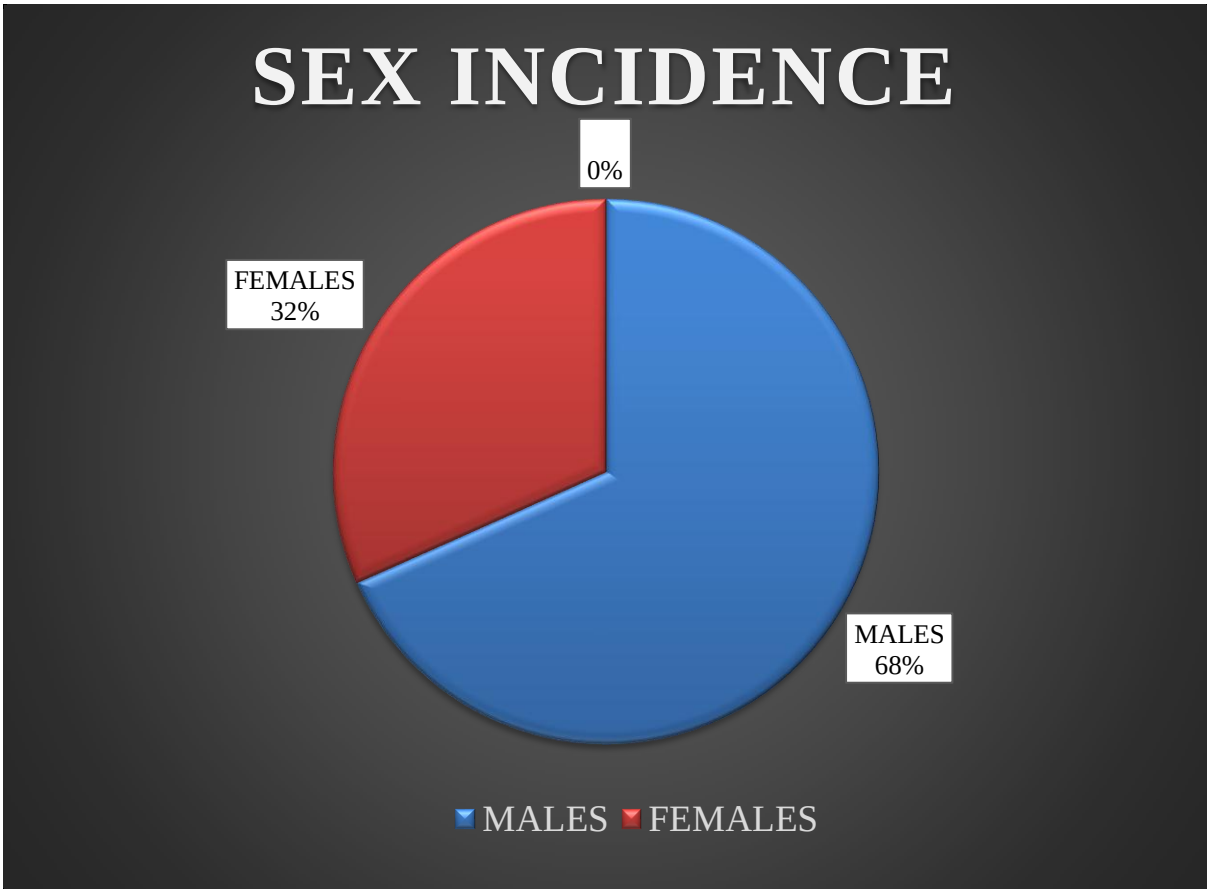
AGE	NO.OF. PATIENTS	PERCENTILE
21-30	10	16.67%
31-40	18	30%
41-50	22	36.66%
51-60	10	16.67%



SEX INCIDENCE:

TABLE 2: Sex distribution of the patients.

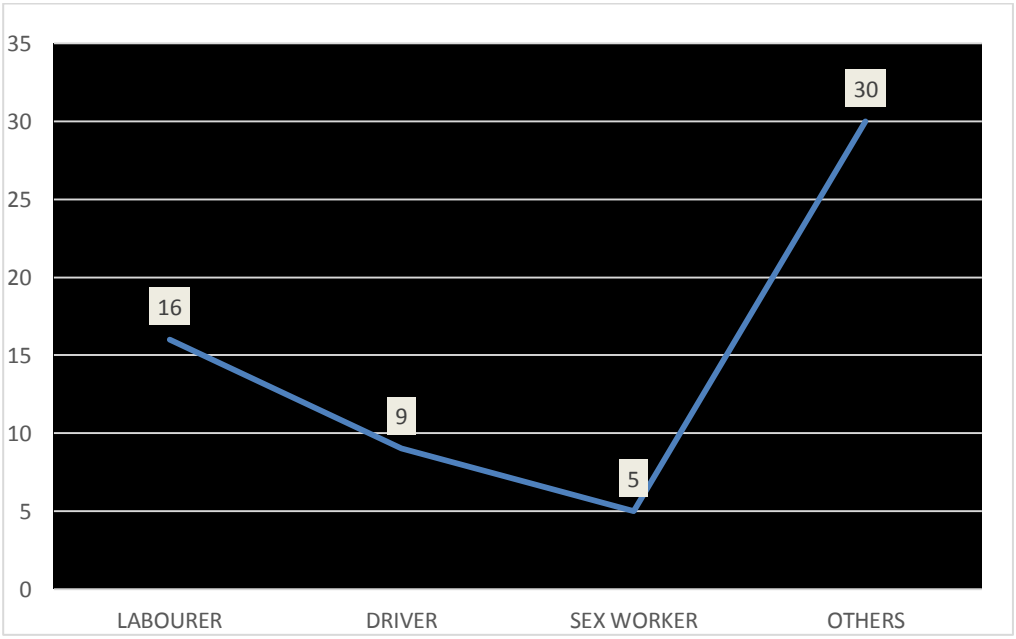
SEX	NO.OF. PATIENTS	PERCENTAGE
MALE	**41**	**68.33%**
FEMALE	**19**	**31.67%**



OCCUPATION INCIDENCE:

TABLE 3: Occupation distribution of patients.

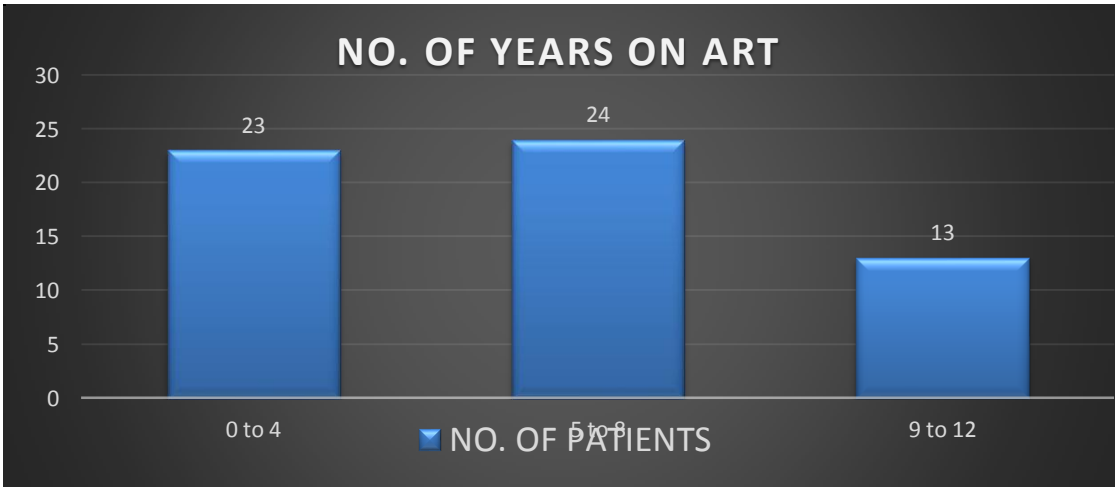
OCCUPATION	NO.OF. PATIENTS	PERCENTAGE
LABOURER	**16**	**26.67%**
DRIVER	**9**	**15%**
SEX WORKER	**5**	**8.33%**
OTHERS	**30**	**50%**



NO. OF YEARS ON ART:

TABLE 4: ART distribution of patients.

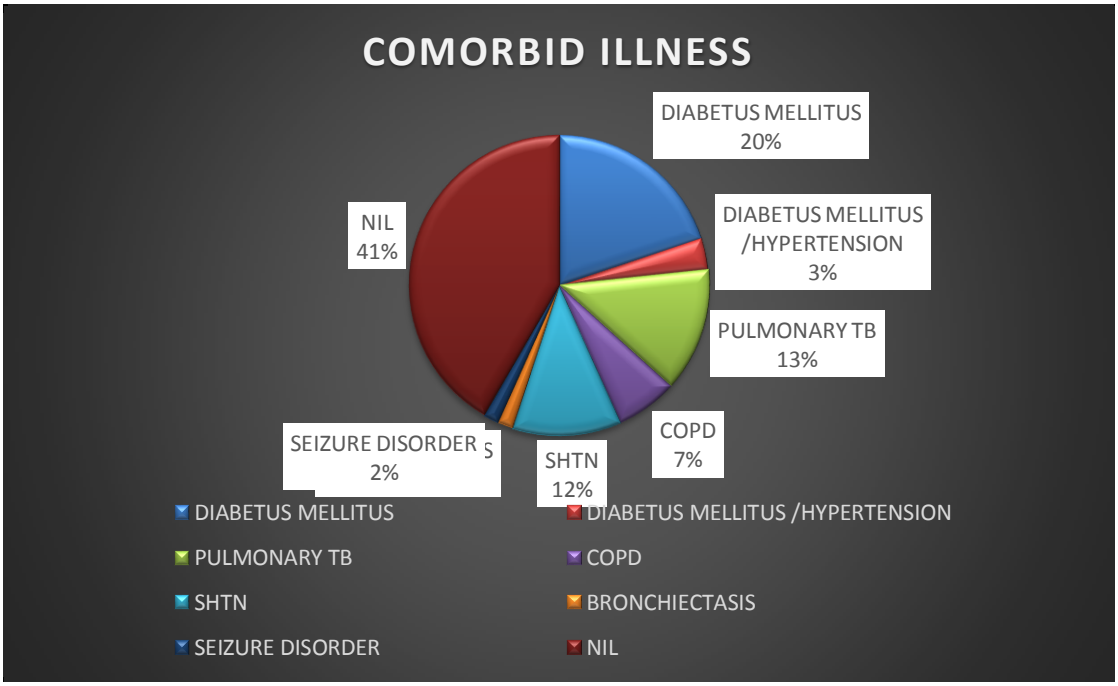
NO. OF. YEARS SINCE ART	NO.OF. PATIENTS	PERCENTAGE
0-4	**23**	**38.33%**
5-8	**24**	**40%**
9-12	**13**	**21.67%**



COMORBID ILLNESS INCIDENCE:

TABLE 5: Diversity of comorbid illness among the patients.

COMORBID ILLNESS	NO.OF. PATIENTS	PERCENTAGE
DIABETES MELLITUS	12	20%
PULMONARY TB	8	13.33%
HYPERTENSION	7	11.67%
COPD	4	6.67%
DIABETES & HYPERTENSION	2	3.33%
BRONCHIECTASIS	1	1.67%
SEIZURE DISORDER	1	1.67%
NIL	25	41.66%



CLINICAL PRESENTATION:

The various clinical presentation among the patients are as follows:

1. 6 cases of Inguinal Hernia

2. GIT ELECTIVE

    a) 2 cases of hemorrhoids
    b) A case of duodenal ulcer
    c) A case of Abdomino pelvic cyst
    d) A case of right lobe liver abscess

3. GIT EMERGENCY

    a) 3 cases of complicated appendicitis(abscess/perforation)
    b) 2 cases of duodenal ulcer perforation
    c) A case of obstructed incisional Hernia

4. Infectious(tuberculosis)
    a) obstructive hydrocephalus
    b) cold abscess neck
    c) psoas abscess
    d) empyema(2 cases)

5. Infectious (non-tuberculosis)
    a) Abscess

        i. Penile
        ii. Parotid
        iii. Perinephric
        iv. Ruptured spleenic
        v. Right Inguinal
        vi. Water can perineum/periurethral

    b) Non-abscess

        i. AGE
        ii. Cervicitis
        iii. Right Epididymoorchitis
        iv. Syphilitic penile ulcer
        v. Cellulitis left back
        vi. Necrotizing lymph adenitis neck node
        vii. Right lower limb cellulitis
        viii. Urosepsis
        ix. Esophageal candidiasis
        x. Cystitis
        xi. Cervical lymph adenitis
        xii. Snake bite cellulitis

6. Malignancy
    a) Ca Stomach with liver metastasis
    b) Ca Cervix
    c) Ca Caecum
    d) Ca Stomach
    e) Ca Caecum with liver metastasis

7. Trauma
    a) 3 cases of road traffic accidents(1 with head injury)
    b) Accidental fall

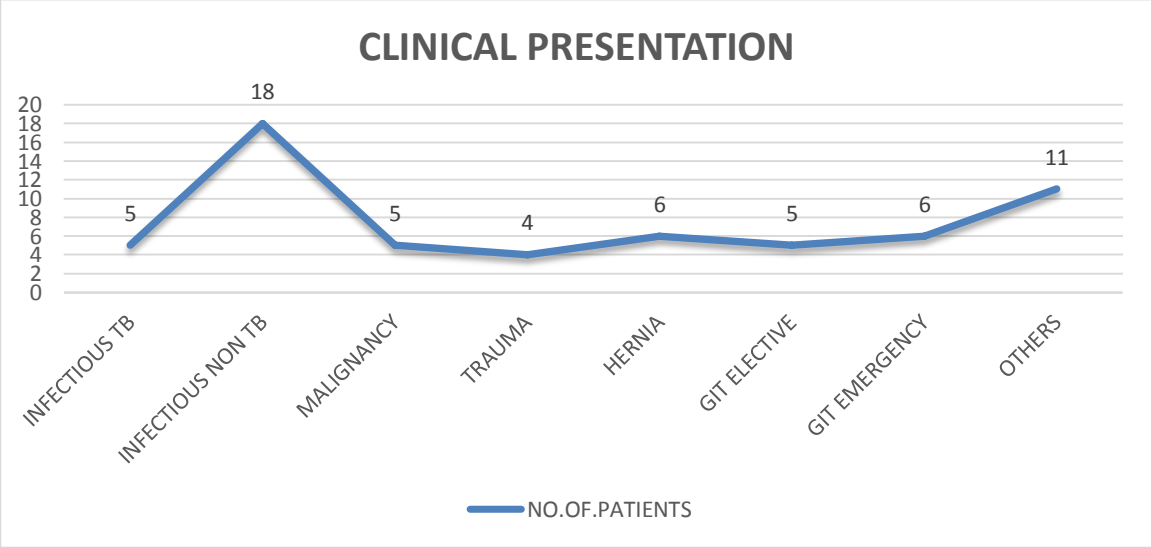
8. Others

    a) Bilateral varicose vein
    b) 2 cases of Deep Venous Thrombosis
    c) Right lower limb Filariasis
    d) 2 cases of sebaceous cyst
    e) 2 cases of hydrocele
    f) Benign Prostatic Hyperplasia
    g) SOL Brain temporal lobe

CLINICAL PRESENTATION:

TABLE 6: Diversity of clinical presentation among the patients

CLINICAL PRESENTATION	NO.OF. PATIENTS	PERCENTAGE
INFECTIOUS(TB)	5	8.33%
NON-TB INFECTIOUS	18	30%
MALIGNANCY	5	8.33%
TRAUMA	4	6.67%
HERNIA	6	10%
GIT ELECTIVE	5	8.33%
GIT EMERGENCY	6	10%
OTHERS	11	18.34%



INFECTIOUS NON-TB:

TABLE 7: Distribution of non- TB infectious disease

INFECTIOUS NON-TB	NO.OF. PATIENTS	PERCENTAGE
ABSCESS	6	33.33%
NON-ABSCESS	12	66.67%

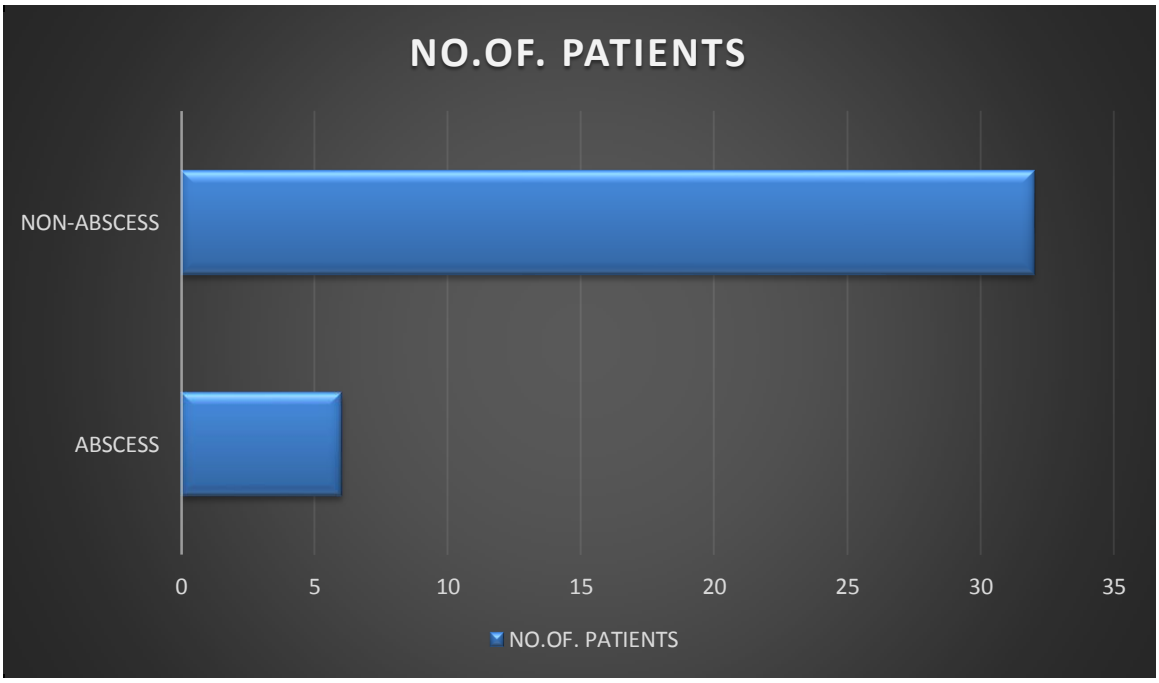
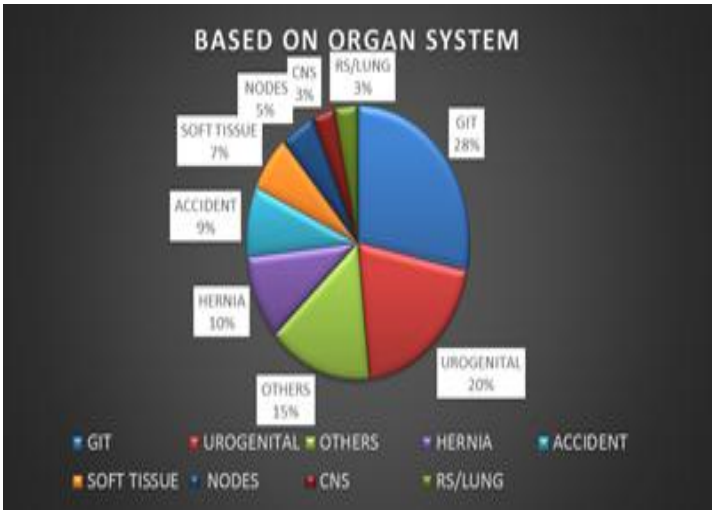


TABLE 8: Distribution of diseases based on the organ system

ORGAN SYSTEM	NO.OF. PATIENTS	PERCENTAGE
GIT	17	28.34%
UROGENITAL	12	20%
OTHERS	9	15%
HERNIA	6	10%
ACCIDENT	5	8.33%
SOFT TISSUE	4	6.67%
LYMPH NODES	3	5%
CNS	2	3.33%
RS/LUNGS	2	3.33%



TREATMENT GIVEN:

TABLE 9: Diversity in the treatment given to the patients

TREATMENT GIVEN TO THÉ PATIENTS	NO.OF. PATIENTS	PERCENTAGE
MEDICALLY MANAGED	19	31.67%
OPERATED/ELECTIVE	17	28.33%
OPERATED/EMERGENCY	14	23.33%
EXPIRED	3	5%
CHEMOTHERAPY	2	3.33%
ATT	2	3.33%
ABSCONDED	1	1.67%
RADIOLOGICAL INTERVENTION	1	1.67%
CONSERVATIVE MANAGEMENT	1	1.67%

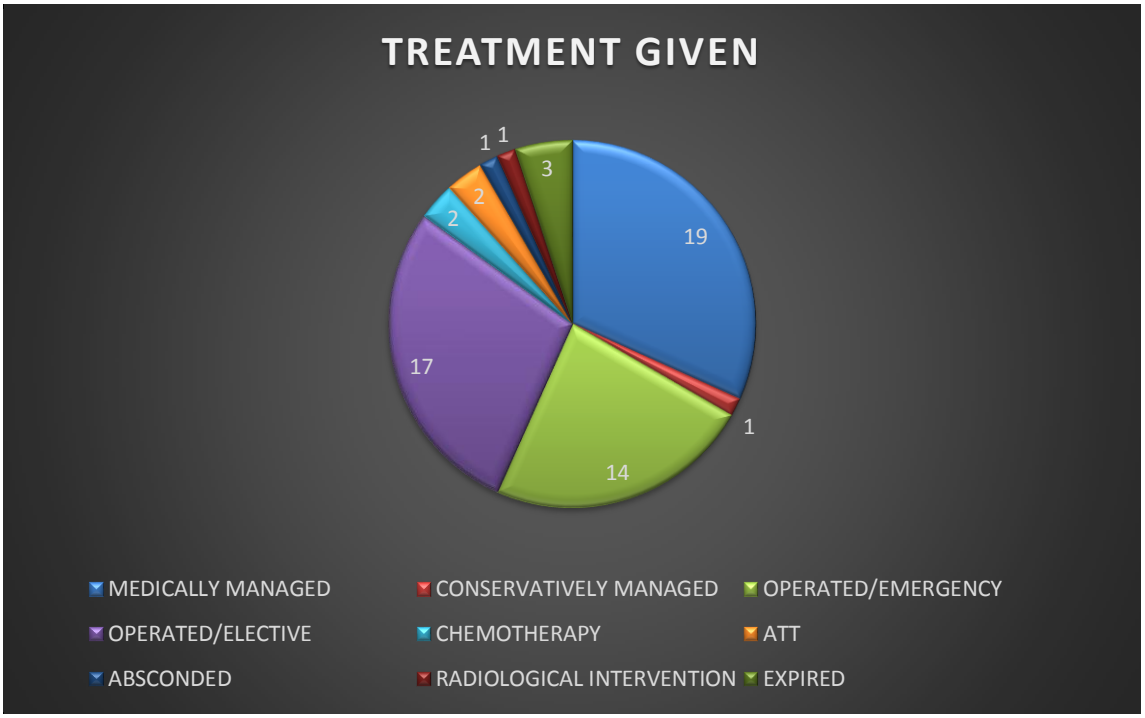
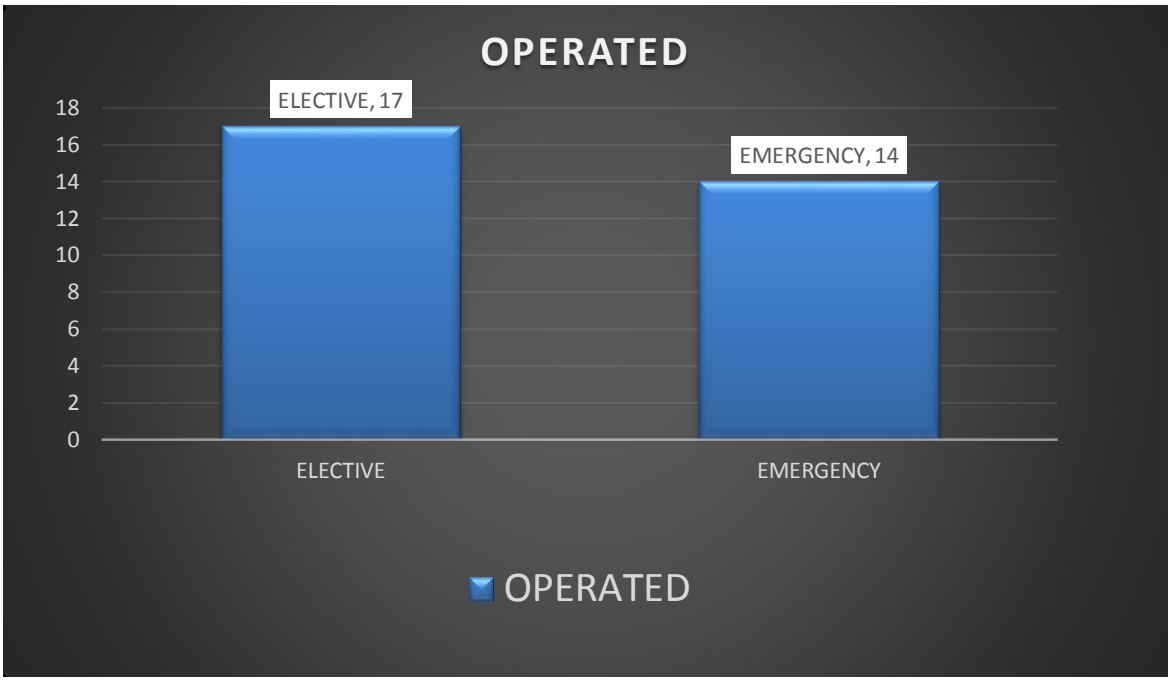


TABLE 10: Distribution of operated patients

OPERATED CONDITIONS	NO. OF. PATIENTS	PERCENTAGE
ELECTIVE	**17**	**54.84%**
EMERGENCY	**14**	**45.16%**



DISCUSSION

DISCUSSION

This observational prospective study was conducted with 60 patients with HIV/AIDS who presented with the surgical condition to the department of general surgery /surgical specialty/surgical casualty, Thanjavur medical college, Thanjavur. This study was carried out with the view to define the prevalence of surgical conditions among HIV/AIDS patients.

Age of the selected patients ranged 20-60 years with most of the patients between 41-50 years(22 patients = 36.66% of the patients).Among the total 60 patients 68%(41 patients) were males and 32% (19 patients) were females. The ratio of male to female is 2:1 and the predominant group is males.

The analysis of the comorbid illness, diabetes mellitus was the predominant comorbid factor (12 patients = 20% of patients) which is followed by pulmonary TB (8 patients = 13.33%) and next to TB is hypertension (7 patients = 11.67%). 2 patients (3.33%) have both diabetes and hypertension. 25 patients/41.66% of patients did not have any comorbid illness.

The occupation of the patients were variable. Among the group patients were mainly labourers and drivers. About 27%(16 patients) of the patients were laborers and about 15% of the patients (9 patients) were drivers. 8.33% of them (5 patients) were sex Workers.

The number of years on ART of the patients were in the range between 0-12 years. Among the patients most of them were in the antiretroviral therapy(ART) between 5-8 years and it is about 40% of the total patients (24 patients). Next to this range, patients were on ART between 0-4 years (23 patients = 38.33%). Hence patients on ART between 0-4 years and 4-8 years are more or less the same, 38.33% and 40% respectively

In the statistical analysis of the clinical presentation of the patients it is found that the patients were mostly having non Tuberculous infectious disease. It is about 30%(18 patients) of the total patients. Next to that, the GIT emergencies and hernia (6 patients = 10% of the patients) have equal importance followed by the malignancy, GIT electives and the TB related infections (5 patients = 8.33% of the patients each).

Among the 18 patients with non TB infections 12 patients had non-abscess related conditions and 6 had abscess. Those abscesses were uncommon abscesses. Hence uncommon abscesses were common in HIV/AIDS patients.

On analyzing the study of the 60 HIV/AIDS patients 17 patients had gastro intestinal tract problems (28.34% of the patients) ,12 patients had urogenital problems (20% of the patients) and 6 patients had hernia (10% of patients).

In the study of 60 HIV/AIDS patients about 31 patients were Operated and it is about 51.67% of the total patients followed by which 19 patients were medically managed (31.67% of the patients)

Among the 31 operated HIV/AIDS patients 17 patients (55% of the operated patients) were operated in elective and 14 patients (45% of the operated patients) were operated in emergency.

LIMITATIONS OF THE STUDY

LIMITATIONS OF THE STUDY

As this study has been carried out over a limited period of time with a limited number of patients, it could not have been large enough to be of reasonable precision.
All the facts and figures mentioned here vary considerably from those of large series covering wide range of time, but still then ,as the cases of this studywere collected from a tertiary care level hospital in our country, this study has some credentialsin defining the prevalence of surgical conditions among HIV/AIDS patients.

CONCLUSION

CONCLUSION

This prospective observational study was conducted in the department of general surgery, Thanjavur medical college,Thanjavur. It can be concluded from the findings of the study that

1. Males most commonly present with surgical conditions.

2. The common age group is between 41-50 years

.

3. Majority of the patients are laborers.

4. Most of the patients who present to the surgical Outpatient/Inpatient department are on ART since 0-4 years or 5-8 years.

5. The common comorbid illness among HIV/AIDS patients is diabetes mellitus followed by pulmonary tuberculosis.

6. The commonest organ system involved among the surgical patients is gastro intestinal system.

7. They present to the surgical Outpatient/Inpatient department with non- tuberculous infectious disease which are mostly non-abscess.

8. About 52% of patients who present to the surgical Outpatient/Inpatient department/casualty are operated among whom 28.33% are operated electively.

9. Among elective surgeries surgery for hernia is commonest.

10. Among the emergencies complicated appendicitis/ abscess is common.

RECOMMENDATIONS

RECOMMENDATIONS

On the basis of the findings of the study, the following recommendations can be made:

1. Many HIV/AIDS patients present to the surgical OPD/casualty with surgical illness unrelated to HIV/AIDS(hernia, hemmorhoids, sebaceous cyst, hydrocele, malignancies) and also with surgical illness in a virulent form due to HIV/AIDS (Appendicular abscess, ruptured splenic abscess, water can perineum).

2. Abscesses at uncommon sites consider HIV serology (parotid, penile, inguinal abscesses).

3. As a routine do HIV serology for all surgical cases

4. HIV patients life expectancy is extended by ART hence they present with surgical conditions unrelated to HIV/AIDS, all surgeons must be prepared to operate on them.

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DATA COLLECTION CHART

QUESTIONAIRE

PATIENT DETAILS :

Name : Age: Sex:

IP No.

Occupation :

ON ADMISSION：

Complaints :

History of presenting illness :

PAST HISTORY：

Number of years since diagnosed as HIV / AIDS :

Number of years on ART :

Co-Morbid illness :

CLINICAL EXAMINATION：

Pulse : BP : RR: Temp:

Pallor: Icterus:

CVS: RS:

P/A:

INVESTGATIONS :

Hemogram: Renal Function Test :

Liver Function Test : Random Blood Sugar:

BT/CT: Blood Grouping:

ECG: CXR:

Management:

Operative Procedure (if any) :

MASTER CHART

S.NO	NAME	IP/OP NO	AGE	SEX	OCCUPATION	COMORBID ILLNESS	NO.OF.YEARS SINCE ART	CLINICAL PRESENTATION	TREATMENT GIVEN
1	R.Vasudevan	45367	30	M	Assistant director	NIL	5	B/L varicose veins	Operated/Elective/Trendlenberg
2	M.Faathima	46758	45	F	Tailor	NIL	10	Abdominal pain / AGE	Expired /Pneumocystis pneumonia
3	S.Alagan	32453	45	M	Farmer	DM	newly diagnosed	Hemmorhoids	Conservative treatment
4	K.Alagappan	985	40	M	Not specific	NIL	5	Left Inguinal Hernia	Operated/Elective/Hernioplasty
5	A.Murugan	34258	50	M	Labourer	NIL	1	Water can perineum	Medically managed
6	R.Vasantha	12310	55	F	Home maker	DM	7	Ca Stomach with liver secondaries	Absconded
7	S.Manian	13567	30	M	Labourer	NIL	3	Obstructive Hydrocephalus	Operated/Emergency/VP Shunt
8	M.Senthil kumar	3278	45	M	Fisher man	DM	5	50% Thermal Burns	Expired
9	J.Poongumaran	6578	36	M	PWD worker	NIL	7	RTA with Head injury	Expired
10	S.Priya	5467	30	F	Sex worker	NIL	3	Cervicitis	Medically managed
11	M.Valavambal	9870	60	F	Homemaker	DM	12	Ca cervix stage 3B	Chemotherapy
12	P.Panneer selvam	12367	60	M	labourer	NIL	8	Penile abscess/stricture	Operated/Emergency/SPC
13	G.Gnanasekar	24378	45	M	Farmer	TB	7	Rt Epididymo orchitis	Medically managed
14	K.Kanchana	6238	55	F	Sex worker	NIL	9	right Parotid abscess	Operated/Emergency/I&D
15	T.Paarthiban	2865	46	M	Labourer	DM	5	Penile ulcer / syphilis	Medically managed
16	S.Muthukumar	2132	38	M	shop keeper	NIL	11	Appendicular perforation	Operated/Emergency/Appendectomy
17	A.Ranjitham	3456	32	F	Labourer	DM/HT	8	Obstructed Incisional Hernia	Operated/Elective/repair
18	M.Periasamy	9765	37	M	Driver	NIL	8	Appendicular Abscess	Operated/Emergency/Appendectomy
19	U.Mariamma	4356	44	F	Labourer	Seizure disorder	3	Cellulitis left back	Medically managed
20	P.Govindhan	5774	39	M	Mason	NIL	4	Rt inguinal hernia	Operated/Elective/Hernioplasty
21	U.Prasanth	14237	23	M	Driver	COPD	7	Rt Hydrocele	Operated/Elective/Eversion of sac
22	K.Balakrishna	25258	45	M	Labourer	NIL	9	Necrotising lymphadenitis-neck node	medically managed
23	G.John	32327	54	M	Baker	HT/CKD/Anemia	3	Sebaceous cyst back	Operated/Elective/Excision
24	A.Nazeer	5322	34	M	Farmer	NIL	12	Left Inguinal Hernia	Operated/Elective/Hernioplasty
25	R.Munniappan	2345	50	M	Engineer	HT/CAD	newly diagnosed	Ca Caecum	Operated/Elective/Rt.Hemicolectomy
26	W.Rathna	7654	35	F	Labourer	HT	6	Lt lower limb DVT	Medically managed
27	T.Venkatesh	34679	27	M	Carpenter	NIL	2	Rt indirect inguinal hernia	Operated/Elective/Hernioplasty
28	S.Keerthika	12546	45	F	Home maker	DM	1	Ca stomach	Operated/Elective/Gastrectomy
29	R.Sangeetha	6789	45	F	Sex worker	TB	5	Rt Lower limb cellulitis	Medically managed
30	S.Santhanaam	34526	47	M	Labourer	HT	7	Urosepsis/Rt Pyelonephritis	Medically managed
31	K.Kamalnathan	125	32	M	Driver	TB	4	Duodenal Ulcer	Medically managed
32	T.Khalid	2124	43	M	Security	DM	5	Dysphagia/oesophageal candidiasis	Medically managed
33	U.Nishanth	4558	54	M	Driver	COPD	6	It Perinephric Abscess	Operated/emergency/drained
34	K.Paarvathi	45745	26	F	Home maker	NIL	1	Cystitis	Medically managed
35	G.Kannan	21457	48	M	Painter	NIL	8	Accidental fall/contusion Rt thigh	Medically managed
36	R.Yanesswaran	4512	59	M	Labourer	HT/CAD	9	Lt inguinal hernia	Operated/Elective/Hernioplasty
37	J.Praveen	1542	57	M	Driver	TB	11	RTA with Multiple injuries	Suturing under LA/Emergency
38	T.Naveen	7568	48	M	Labourer	NIL	7	Rt Lower limb filariasis	Medically managed
39	G.Mahesh	49586	36	M	Waiter	DM	3	Hemmorhoids	Operated/elective/hemmorhoidectomy
40	N.Sakthivel	45127	34	M	Driver	NIL	1	DVT Both the legs	Medically managed/anticoagulants
41	K.Radhika	8505	28	F	Lab technician	HT	2	Right Cervical Lymphadenitis	Medically managed/antibiotics
42	J.Arulanantham	4501	39	M	Labourer	NIL	4	Ruptured Spleenic Abscess	Operated/Emergency/Spleenectomy
43	T.Elango	7495	56	M	Driver	Bronchiectasis	8	Appendicular perforation	Operated/Emergency/Appendectomy
44	R.Rajeshwari	44475	44	F	PWD worker	DM	9	Abdomino Pelvic Cyst/Lt Adenexal	Operated/Elective/cystectomy
45	A.Shiva	14254	37	M	Carpenter	NIL	4	Rt lobe liver Abscess	Aspiration (USG Guided)
46	K.Mugilan	15426	48	M	Driver	COPD	11	Lt inguinal hernia	Operated/Elective/Hernioplasty
47	T.Jolitha	4524	26	F	Accountant	NIL	1	Cold abscess Rt side neck	ATT
48	S.Sherin	4587	45	F	Labourer	TB	8	Lt Psoas Abscess	ATT
49	A.Kupan	9856	35	M	Construction worker	DM/HT	8	Perforation Peritonitis	Operated/Emergency/omental patch closure
50	A.Kamal	4857	33	M	Labourer	NIL	4	Snake Bite Lt Lower limb Cellulitis	Medically managed
51	L.Lingesan	7845	31	M	Milk Man	TB	4	RTA with Abrasion right hand	Medically managed
52	M.Lalitha	6985	42	F	Home maker	NIL	5	Empyema Rt Lung	Rt ICD/Emergency
53	T.Surya	2541	50	M	Cook	DM	7	Lt Hydrocele	Operated/Elective/Eversion of sac
54	C.Chinnasaami	14526	23	M	Labourer	DM	2	SOL-Brain Lt Temporal Lobe	Operated/Elective/Excision
55	U.Usha	48769	40	F	Lab technician	COPD	6	Sebaceous cyst	Operated/Elective/Excision
56	K.Kumaravelu	4524	30	M	Driver	NIL	3	TB Empyema Rt Lung	Rt ICD/Emergency
57	T.Gowsalya	85	48	F	Sex worker	NIL	4	Ca Caecum with Liver metastasis	Chemotherapy
58	F.Syed	452	60	M	Labourer	TB	11	BPH	Medically managed
59	E.Rubika	1542	35	F	Sex worker	NIL	12	Rt Inguinal Abscess	Drained/I & D/Emergency
60	S.Paneer	8456	45	M	shop keeper	DM	9	Perforation Peritonitis	Operated/Emergency/omental patch closure