THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS

By

Dr. MANDAR B. DHAMANGAONKAR.

Dissertation submitted to the

BLDE UNIVERSITY BIJAPUR, KARNATAKA

In partial fulfillment

of the requirements for the degree of

M. S.

In

GENERAL SURGERY

Under the guidance of

Dr. TEJASWINI UDACHAN

PROFESSOR

M.S. GENERAL SURGERY

DEPARTMENT OF SURGERY

B. L. D. E. U.'S

SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE, BIJAPUR.

2010

B.L.D.E. UNIVERSITY

B.L. D. E. U'S
SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE, BIJAPUR.

DECLARATION BY THE CANDIDATE

I, **Dr. MANDAR B. DHAMANGAONKAR**. hereby declare that this dissertation Entitled "**THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS."** is a bonafide and Genuine research work carried out by me under the guidance of **Dr. TEJASWINI UDACHAN.** M.S. Professor, Department of Surgery at B.L.D.E.U's Shri. B. M. Patil Medical College Hospital and Research Centre, Bijapur.

Date: **Dr. MANDAR B. DHAMANGAONKAR**.

Place: Bijapur

B. L. D. E. U'S

SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE, BIJAPUR.

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled **"THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS."** is a bonafide research work done by **Dr. MANDAR B. DHAMANGAONKAR.,** under my overall supervision and guidance, in partial fulfillment of the requirement for the degree of M.S. in Surgery.

Date :

Place : Bijapur

DR. TEJASWINI UDACHAN
PROFESSOR AND HEAD
DEPARTMENT OF SURGERY
B. L. D. E. U's Shri. B. M PATIL MEDICAL COLLEGE AND HOSPITAL AND RESAERCH CENTRE, BIJAPUR.

B. L. D. E. U'S

SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE, BIJAPUR.

ENDORSEMENT BY THE HEAD OF DEPARTMENT

This is to certify that the dissertation entitled **"THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS."** is a bonafide research work done by **Dr. MANDAR B. DHAMANGAONKAR,** under the guidance of **Dr. TEJASWINI UDACHAN** M.S.**,** Professor of Surgery at B.L.D.E.U's Shri. B.M.Patil Medical College Hospital and Research Centre, Bijapur.

Date:

Place: Bijapur

DR. TEJASWINI UDACHAN. M.S.
PROFESSOR AND HEAD
DEPARTMENT OF SURGERY
B. L. D. E. U's Shri. B. M. PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, BIJAPUR.

B. L. D. E. U'S

SHRI B. M. PATIL MEDICAL COLLEGE HOSPITAL & RESEARCH CENTRE, BIJAPUR.

ENDORSEMENT BY THE PRINCIPAL

This is to certify that the dissertation entitled **"THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS."** is a bonafide research work done by **Dr. MANDAR B. DHAMANGAONKAR,** under the guidance of **Dr. TEJASWINI UDACHAN M.S,** Professor of Surgery at B.L.D.E.U's Shri.B.M. Patil Medical College Hospital and Research Centre, Bijapur.

Date:
Place: Bijapur

Dr. R.C.BIDRI M.D.
PRINCIPAL, B.L.D.E. U's
Shri. B. M. PATIL MEDICAL COLLEGE HOSPITAL AND RESEARCH CENTRE, BIJAPUR.

COPYRIGHT

Declaration by the candidate

I here by declare that the BLDE UNIVERSITY BIJAPUR, Karnataka shall have the rights to preserve, use and disseminate this dissertation / thesis in print or electronic format for academic/ research purpose.

Date: **Dr. MANDAR B. DHAMANGAONKAR.**
Place: Bijapur

ACKNOWLEDGEMENT

With proud privilege and deep sense of respect express my gratitude and indebtedness to my teacher and guide **DR. TEJASWINI UDACHAN** , Professor and Head , Department of Surgery, BLDEU'S SHRI B. M. PATIL MEDICAL COLLEGE, for his constant inspiration, patience, encouragement and support, which he rendered in preparing this dissertation and in pursuit of my post graduate studies.

I am grateful to **Dr. R.C.BIDRI**, Principal of B.L.D.E.U'S Shri. B.M.Patil Medical College Hospital and Research Centre, Bijapur, for permitting me to conduct this study.

I take this opportunity to express my deep sense of gratitude and sincere thanks to **Dr. PRASAD SASNUR** Assistant Professor , **Dr. RAMAKANTH B.** Assistant Professor, **Dr. VIKRAM SINDHGIKAR** Assistant Professor.

My sincere thanks to **Dr. VIJAYA PATIL** Associate Professor **, Dr. ASHOK BIRADAR** Assistant Professor **, Dr. DEEPAK CHAVAN,** Assistant Professor, **Dr. DEEPAK AMBLI** Assistant Professor**, Dr. NISHANT B.** Senior Residance**, Dr. SUNIL BHAIRGOND** Senior Residance for their valuable supervision and good wishes.

I am extremely thankful to Mrs.Vijaya Soraganvi, Statistician for her guidance in statistical analysis.

I am very grateful to Dr SAPNA P., Dr. UDAY KARJOL and DR. RAVINDRA N. for their kind co-operation and encouragement.

I thank all the non teaching staff of my department for their constant encouragement and moral support.

I also thank Mr. NAGNESHAWAR. Chief Librarian and other library staff for their cooperation in bringing out this dissertation.

I wish to express my special , sincere humble pronouns to my Mother ANURADHA Father DR. BHALCHANDRA and my Brother Dr. PUSHKAR for their love and affectionate divine blessing , moral and constant support in every walk of my life till I become post graduate.

Finally I acknowledge with gratitude to all the patients for their co-operation during the study.

Date: **Dr. MANDAR B. DHAMANGAONKAR.**

Place: Bijapur.

ABSTRACT

INTRODUCTION :- The increasing prevalence of HIV infected patients has created the new challenges in the management of the disease. Although the scientific investigation of AIDS and HIV – related diseases has expanded, the surgical literature has remained limited with respect to the influence and outcome of surgery in HIV infected patients. There are some specific conditions, like tubercular abscess, lymphadenopathy, perianal sepsis, acute abdomen etc. associated with HIV disease syndrome which requires surgical intervention. Hence, the aim of the study was to know the clinical profile of surgical diseasesamong HIV positive patients attending the BLDE Hospital, Bijapur.

MATERIALS AND METHODS :- This study was undertaken at BLDEU'S SRI B. M. PATIL MEDICAL COLLEGE, BIJAPUR, from October 2008 to May 2010.All HIV positive patients who were admitted in BLDEU'S Sri B.M.Patil Medical College/ attending surgical OPD having surgical diseases were included in this study. Details of cases recorded, including history, clinical examination and standard investigations done wherever necessary.

RESULTS :- 136 HIV infected patients with surgical diseases were included in this study. 92(68%)males and 44(32%)were females. M>F was 2:1. Most common surgical disease was Abscess formation (25%) and majority of patients had peri-anal abscess. The Ano-rectal pathology(fissure, fistula, hemorrhoids, carcinoma rectum) was seen in 30% of patients. Pulmonary complications(pleural effusion and pneumothorax), that required ICD insertion were observed in 11.7% of patients. 6 patients(4.41%) had pancreatitis and 7 patients(5.14%) had appendicitis. The incidence of lymphadenopathy, abdominal koch's and cellulitis(3.67%) was same.

However, the other uncommon conditions like, external iliac artery occlusion, diaphragmatic eventration, carcinoma gall bladder, malignant melanoma has been incidentally noticed in these immune-compromised patients.

CONCLUSION :-Majority of HIV infected patients suffered from abscesses and among them peri-anal abscess was the most common. The association of antiretroviral therapy and pancreatitis is known. In our study, 6 patients had pancreatitis and out of them, 5 patients had history of antiretroviral therapy. Apart from these, we came across the other uncommon surgical conditions like external iliac artery occlusion, diaphragmatic eventration, carcinoma gall bladder,malignant melanoma in HIV positive patients.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF GRAPHS

INTRODUCTION

The HIV/AIDS has posed many unprecedented challenges. We are confronted with the problem which has no curative or palliative treatment or a preventive or therapeutic vaccine, at least for now. Further, owing to the insidious and covert nature of the disease, the problem is compounded by a prevailing attitude of denial or resistance of complacency at all levels. Unlike epidemic of disease such as cholera, plague and polio, which manifest overtly and acutely and elicit concrete response, the visible manifestations of HIV occurs only at the last stage[1].

As a result, there is a visible lack of realization of the problem in the society. The reactive response, therefore, does not match the real magnitude and gravity of the problem. Another major challenge in the context of HIV/AIDS and sexually transmitted diseases is their intimate association with the issue of sexuality which continues to be a taboo in our society and not discussed openly[1].

In addition to this, the association of tuberculosis and HIV positive status is known. About 10% of persons infected with mycobacterium tuberculosis will develop active TB during their life time[2], when compromised with HIV infection as much as 50% of persons will develop active TB during a shortened life time[3].

With new HIV infections occurring worldwide and better availability of low cost anti-retroviral drugs, the number of HIV positive people in the population is steadily increasing. Surgeons will be increasingly called upon for consultation and surgical interventions for either routine surgical conditions or for AIDS-related complications. Surgical management of such patients obviously carries some risk of contracting this lethal infection and this fear has some direct and indirect influence on the psychology, social, and professional life of the concerned surgeon. It has been

estimated that a surgeon working in an area with high prevalence of HIV over a career span of 30yrs has as high as 1:4 chance of acquiring the infection. Surgeons have been found to have a higher rate of percutaneous exposure than other specialists and operations such as lymph node biopsy, soft tissue mass excision and abscess drainage have carried the greatest risk of infection[4].

The risk of HIV infection to the surgeon is the highest when the viral load is increased, i.e., during the earlier (when seroconversion is occurring) and in the later stages (uncontrolled AIDS). Many a times, especially in emergency settings, surgeons operate on patients without knowing their HIV status. Hence precautions must always be taken to prevent or minimize the risk of transmission. In 1987, the CDC issued guidelines for minimizing the risk of HIV transmission in health care setting, which have come to be called the "Universal Precautions."[4]

NEED FOR STUDY

The HIV/AIDS global epidemic. The incidence of HIV/AIDS is increasing. Following infection by HIV virus, there is seroconversion and about 25-35% of those infected will develop AIDS within two years of infection if left untreated. The mortality from AIDS is thought to be 100%. Developing AIDS has been reduced by Highly Active Anti-retroviral Therapy (HAART). As the patient's immune system degenerates, a variety of opportunistic infections and unusual neoplasms appear[5]. As the AIDS, ARC and AIDS-P become increasingly prevalent, the colorectal surgeon will be called upon more frequently to diagnose and treat the anorectal manifestations of these syndrome[6].

About 0.3-0.6% population of Asia, Europe, America are infected. According to NACO about 2-3.1 million people in India are affected.

According to HIV surveillance fact sheet of Karnataka 2006, highest prevalence is found in Bellary district.

In Bijapur district prevalence is 1.75% among ANC attendees.

There are some specific conditions associated with HIV disease syndrome which requires surgical intervention. These includes :- Perianal sepsis, Tubercular abscess, Lymphadenopathy, Acute abdomen, Hepatobiliary and splenic diseases, ano-rectal diseases etc. Incidence of these Surgical diseases in HIV positive patients are not known in Bijapur district and as per our information, no study has been conducted in India to know the clinical profile of surgical diseases among HIV positive patients.

Hence the need for this study is to know the surgical diseases among HIV positive patients.

AIM AND OBJECTIVE

To know the clinical profile of surgical diseases among HIV positive patients attending BLDEU'S, Shri B. M. Patil Medical College and Hospital, Bijapur.

REVIEW OF LITERATURE

Kedir M[7]. conducted a study in department of surgery Gondar university, Gondar to determine the prevalence and pattern of HIV among the surgical patients at Gondar university hospital. The study included all patients admitted in department of surgery from oct.2001 to Feb. 2002 who were HIV positive. They were catogerized into four groups according to their cause of illness

1. General surgical
2. Trauma
3. Infective (25.7%)
4. Neoplasia

It was observed that those patients who had some infectious surgical illnesses including appendicitis, cholecystitis had highest prevalence in HIV positive patients.

Yoshida D, Caruso J M[8], conducted a study in Aug 2002 in emergency services San Francisco General hospital California to determine the clinical presentation of all HIV positive patients presented with complaints of abdominal pain. It was a retrospective study. The cause of abdominal pain was gastroenteritis, diarrhea, ulcer disease, gastritis, dyspepsia. They found that, patients who were HIV positive presenting with abdominal pain most often had a non HIV related cause of abdominal pain & infrequently required surgery. However, HIV positive patients were admitted at the twice rate of non HIV infected population.

Sian Jones, Cheryl Smith, David N. Rose[9], conducted a study in Mount Sinai Medical Center, New York, from 1990 to 1995, to determine whether HIV infected patients had higher rates of surgical diseases than non-infected. The results showed that the diseases were higher among HIV positive patients, but the HIV serostatus was not

found to be an independent risk factor for diseases of surgery. The most important risk factor was ASA risk class.

Eddy H. Carrillo, Lillian E. Carrillo, Patricia M. Byers[10], conducted a study in department of surgery, Miami, Florida, from July 1992 to June 1994, to know the outcome of penetrating trauma and emergency surgery in patients with AIDS. They found that as AIDS epidemic grows, general surgeons will be treating an increasing number of these patients. A low morbidity and mortality can be obtained with standard surgical care and techniques. Complications are not uncommon and should be treated as in any other surgical patients, unless it is a terminal condition or that posture runs against the patient's stated views or advance directives.

Consten E. C. J., Slors J. F. M., Danner S.A.[11], conducted a study in department of surgery, W and H Hospital, Netherland, from 1984 to 1994, to determine the clinical presentation of perianal sepsis (fistulas, abscess) and its surgical treatments in HIV positive patients. During study period, 1117 HIV patients were admitted, 35 underwent general surgical treatment. 83 patients presented with anorectal pathology, 47 of these patients were found to have perianal sepsis. So it suggest that atypical pattern of anorectal sepsis like severe necrotizing gangrene, brain, liver and mediastinum metastatic abscesses from an asymptomatic peri-anal fistula with identical bacteriological culture were seen in 15% of the patients.

D. Savioz, A. Lironi, P. Zurbuchen, C. Leissing[12], conducted a study in department of digestive surgery, Switzerland from June 1988 to June 1994, to compare the acute RIF pain in patients with and without acquired immune deficiency syndrome. They found that in patients with AIDS, the morbidity rate rose to 50%. Surgical decision making with regard to HIV positive patients who were AIDS free with suspected

appendicitis should be similar to that for seronegative patients. For patients with AIDS, alternative diagnostic strategies, including pre-operative CT, or possibly laparascopy, should be considered.

EPIDEMIOLOGY OF HIV/AIDS

Historical Milestones:

AIDS was first recognized in the United States when the US centers for disease control and prevention reported the unexplained occurrence of Pneumocystic carinii pneumonia in 5 previously healthy homosexual men in New York and Los Angeles[13].

The first indication that the disease is caused by a retrovirus came in 1983 from French scientist, when professor Montagnier and his co-workers isolated the viral agent, which was later named as Human immunodeficiency virus. ELISA technique to detect the presence of antibodies in blood against HIV was developed in 1984. In 1986, the Montagnier's group discovered a new type of HIV in West Africa and labeled as HIV-2. In 1987, Zidovudine was reported to be useful in managing the patients with HIV infection for the first time. Later, combination therapy came in vogue which became more popular after discovery of protease inhibitors[14].

The Global Scenario:

The HIV/AIDS global epidemic has greatly exceeded all earlier predictions and although with various available preventive and therapeutic strategies, it has started stabilizing in developed countries, but it is still continuing unabated in all the developing countries. According to UNAIDS Epidemic Update, Dec 2009, a total of 33 million people now infected with HIV infection/AIDS. 2.1 million of them are under the age of 15yrs. In 2008, an estimated 2.7 million people were newly infected with HIV and 4,30,000 were under the age of 15yrs. Every day more than 7,000 people contract HIV – more than 300 every hour. In 2008, 2 million people died from AIDS. Since the beginning of the epidemic, around 60 million people have contracted HIV and 25 million have died of AIDS-related causes.

Indian Scenario:

HIV/AIDS in India came into public view in 1986 with detection of first few cases of HIV in Chennai and first AIDS case in Mumbai in 1987. The current scenario in our country is alarming and the situation is grim. The overall prevalence is still low as compared to many other countries in South Eastern Asia, but because of our large population, even a small prevalence translates into a large number of infections.

Presence of HIV-2 infection in India was reported for the first time from Mumbai in 1991. Two different types of HIV epidemics are seen in India. In the north-east India, the epidemic is mainly among intravenous drug abusers, where as, it is mainly spreading through sexual route in the rest of country15.HIV prevalence in India doubled over the last 4yrs, resulting in India having the highest of HIV infections in the world-4 million Indians. 89% of the reported cases are in the sexually active and economically productive age group of 18-40yrs. Over 50% of all new infections take place among adults below 25yrs. 21% of new HIV infections are among women, a majority of whom do not have any other risk factor other than being married to their husband. Nearly, 22,837 newly born children are infected and about 15,072 have died due to HIV/AIDS. The worst is yet to come. The experience worldwide has been that unless the epidemic is fiercely combative, HIV prevalence rate can raise to over 10% of the adult population in a very short span of time[16].

HIV infection in India – Statewise prevalence-2003[16]

GROUP	STATES
Group I – High prevalence States (more than 1% of natal mothers and over 5% of STD patients positive for HIV)	Maharashtra, Tamil Nadu, Karnataka, Andra Pradesh, Manipur and Nagaland.
Group II – Moderate prevalence States (5% of patients and less than 1% of natal mothers positive for HIV)	Gujarat, Goa and Pondichery.
Group III – Low prevalence States	All other States.

Karnataka State Scenario:

The number of HIV infected individuals are showing steady increase in last 10yrs. The number of HIV infected women is on the rise. 1%-6% of women attending antenatal clinics are infected. Most of these women report sexual contact with a single partner, their husbands. This points to the urgent need for safer sex practices among all the sections of the society. The number of deaths due to AIDS in on raise[16].

HUMAN IMMUNODEFICIENCY VIRUS

Etiologic Agent:

The etiologic agent of AIDS is Human immunodeficiency virus which belongs to the family of human retroviruses and the subfamily of lentivirus. There are 2 types of HIV, HIV-1 and HIV-2. The most common cause of HIV disease throughout the world and certainly in India is HIV-1. The transmission efficiency of HIV-2 infection through sexual route is more lower than HIV-1. Moreover, the incubation period of HIV-2 infection is reported to be longer than that of HIV-1. Of the persons infected with HIV in India, 1.7%-4.6% have been reported to be due to HIV-2 alone, and 3.3%-20% due to combined HIV-1 and HIV-2. Presence of dual infection of HIV-1 and HIV-2 and not of HIV-2 alone has also been reported among intravenous drug users from Manipur[15].

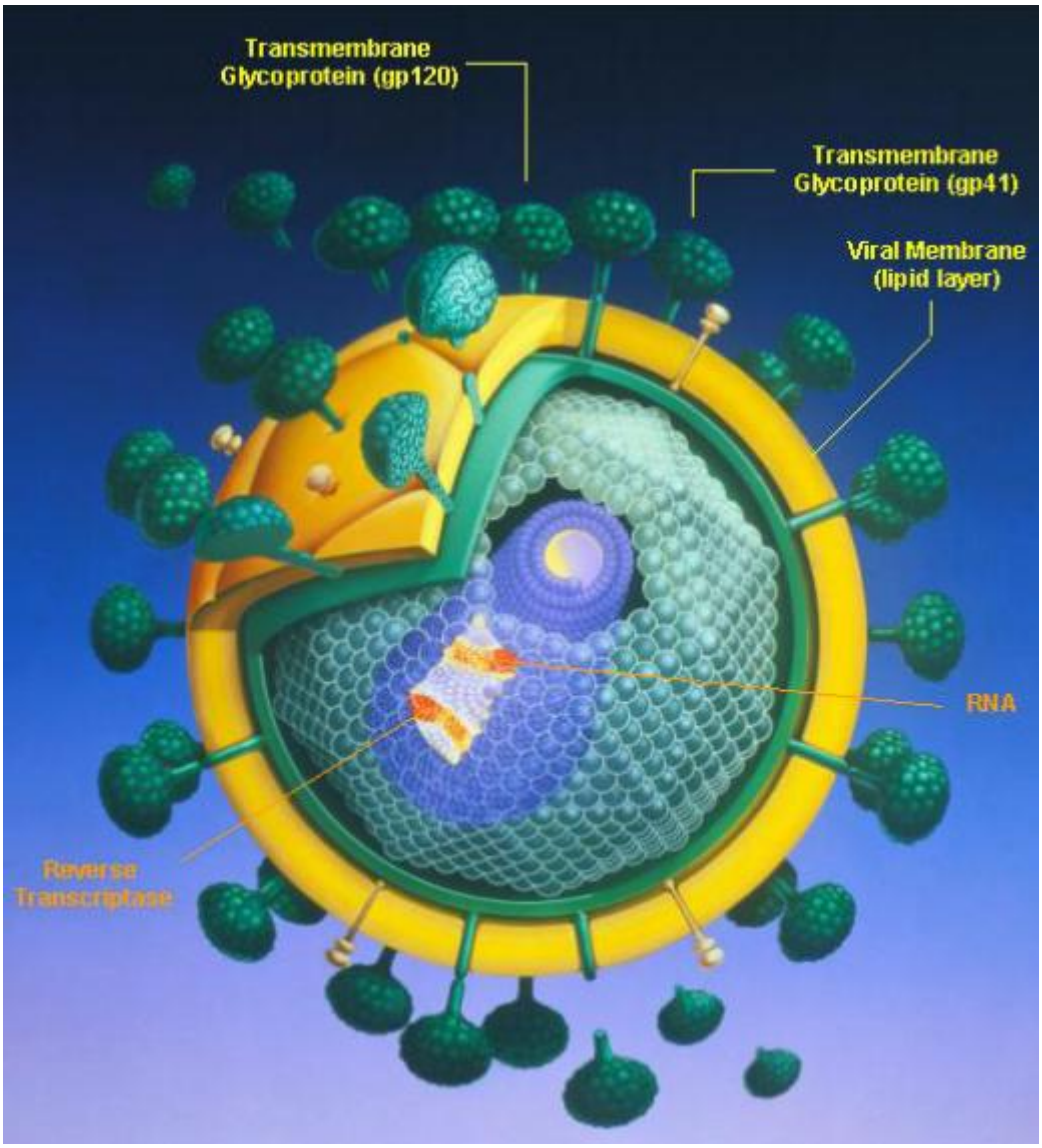
The virion:

Electron microscopy shows that the human immunodeficiency virion is an icosahedral structure, containing numerous external spikes formed by the 2 major envelop proteins, the envelop gp120 and the transmembrane gp41. The virion buds from the surface of the infected cell and incorporates a variety of host proteins including majorhistocompatability complex (MCH) class I and II antigens into its lipid bilayer.

Three transcriptive units codes for the common viral structural protein:

1. The gag region produces the viral core proteins.
2. The pol region transcribes reverse transcriptase, protease, and endonuclease.
3. The env region codes for the 2 major envelop glycoproteins, gp120 and gp41.

The major envelop glycoprotein gp120 is located on the external spikes of the virion, and the transmembrane protein gp41 is the attachment site for gp120 on the surface of the HIV[17].


Transmembrane
Glycoprotein (gp120)
Transmembrane
Glycoprotein (gp41)
Viral Membrane
(lipid layer)
RNA
Reverse
Transcriptase

Besides these structural proteins, 4 virus encoded regulatory proteins have been identified. Their presence reveals the "checks and balances" controlling HIV replication. Two major genes tat and rev affect the events that enhance viral application, whereas the nef region down regulates virus replication. The vif region appears responsible for maturation of viral proteins at the time the virus bud from the cell. The early interaction of these regulatory proteins during acute infection of a cell by HIV could determine the eventual outcome of this infection.

For example, in the presence of high levels of nef gene expression, viral replication could be suppressed. Other viral genes, some s pecific for IV-1 (vpu) or HIV-2 (vpr) have been identified, but their functions have not been fully defined[17].

Replication cycle of HIV:

Binding and entry:

HIV is a RNA virus whose hallmark is the reverse transcription of its genomic RNA to DNA by the enzyme reverse transcriptase. The replication cycle of HIV begins with the high affinity binding of gp120 protein to CD4 receptors on the host cell surface. HIV also binds to one of the group of co-receptors for fusion and entry of HIV-1 into its target cells. These chemokine receptors are CCR5 receptors on monocytes and CXCR4 receptors on T cells. Strains of HIV that utilize CCR5 as a co-receptor are referred to as R5 viruses. Those strains of HIV that utilize CXCR4 are referred to as X4 viruses.

Rare individuals have been reported sexual exposure to HIV in high risk situations but remained uninfected. Genetic analysis of these individuals revealed an inherited homozygous defect in the gene that codes for CCR5. Population study showed that 1% of Caucasians of Western Europe in ancestry possessed the above

homozygous defect. 20% showed heterozygous defect. Homozygous defect in CXCR4 manifested slow progression of the disease[13].

Reverse transcription, nuclear import and integration of viral DNA:

The reverse transcriptase enzyme which is contained in the infecting virion, catalyzes the reverse transcription of the genomic RNA into double-stranded DNA. DNA translocates to the nucleus where it is integrated randomly into the host cell chromosome through the action of another virally encoded enzyme, integrase. This provirus may remain transcriptionally inactive or it may manifest into varying levels of gene expressions upto active production of virus.

Assembly of virus:

Following transcription, HIV m-RNA is translated into proteins that undergo modification through glycosylation, myristylation, phosphorylation and cleavage. The viral particle is formed by the assembly of HIV proteins, enzymes, and genomic RNA at the plasma membrane of cells, but budding of the progeny virion occurs through the host cell membrane, where the core acquires its external envelop. The virally encoded protease then catalyzes the cleavage of gag-pol precursor to yield the mature virion. Each point in the life cycle of HIV is a real or potential target for therapeutic intervention[18].

Mode of Transmission and Efficacy

The causative virus is transmitted from person to person, most frequently through sexual activity. The basic modes of transmission are :-

Sexual transmission:

AIDS is first and foremost a sexually transmitted disease. In USA, over 70% of the cases were homosexual or bisexual men. In contrast, in equatorial Africa, AIDS is acquired mainly through heterosexual contact. The chances of transmission from male to female is twice as likely as from female to male[19].

Blood contact:

AIDS is also transmitted by contaminated blood – transfusion of whole blood cells, platelets and factors VIII and IX derived from human plasma. The risk of contracting HIV infection from transfusion of a unit of infected blood is estimated to be over 95%. There is no evidence that, transmission ever occurred through blood products such as albumin, immunoglobulins or hepatitis vaccines[19].

Maternal – foetal transmission:

HIV may pass from an infected mother to her foetus, through the placenta or to her infant during delivery or by breast feeding. About one-third of the children of HIV positive mothers get infected through this route[19].

IMMUNOPATHOGENESIS of HIV/AIDS:

HIV infection is unique in the sense that not only the host is unable to eliminate the virus resulting in chronic or persistent infection but also there is progressive destruction of immune system. As a consequence, the HIV infected individual becomes immuno-compromised and suffers from a variety of life threatening opportunistic infections and malignancies.

Primary infection with the human immunodeficiency virus is generally followed by a burst of viremia with or without clinical symptoms. This in turn is followed by a prolonged period of clinical latency. During this period, there is little, if any detectable viremia, the numbers of infected cells in the blood are very low and it is extremely difficult to demonstrate virus expression in these cells. Pantaleo et al18, have analysed viral burden and levels of viral replication simultaneously in the blood and lymphoid organs of the same individuals at various stages of HIV disease. They reported that in early stage disease, there is a dichotomy between the levels of viral burden and virus replication in peripheral blood versus lymphoid organs. HIV disease is active in the lymphoid tissue throughout the period of clinical latency, even at times when minimal viral activity is demonstrated in blood.[20,21]

The persistence of HIV in the lymphoid tissue induces a chronic stimulation of the immune system which potentiate virus replication and favors virus dissemination, clearance of newly produced HIV will be less efficient. The persistence of virus will maintain over time the general state of immune activation and the vicious cycle of pathogenic events will be perpetuated leading to severe deterioration of immune system. The mechanisms of trapping of virus and sequestration of infected cells are no longer competent and both HIV specific immune response and the ability to respond to other pathogens are greatly impaired.

Now that the AIDS epidemic has been recognized for over a decade, it has become clear that there is a significant percentage of HIV infected individuals who do not experience progression of HIV disease and whose CD4+T cell counts remains stable and within normal range for many years. These individuals are generally designated as long-term nonprogressors[22].

Three dominant patterns of evolution of HIV infection:

1) Typical progressors: 80%-90% of HIV infected persons are typical progressors and experience a course of HIV disease with a median survival time of approximately 10yrs[20].
2) Rapid progressors: 5%-10% of HIV infected persons are rapid progressors and experience an unusually rapid (3-4yrs) course of HIV disease[20].
3) Long-term nonprogressors: About 5% of HIV infected persons do not experience disease progression for an extended period of time and are termed long-term nonprogressors.[20,22]

Natural history of HIV Infection:

In an average patient, the entire sequence of events is approximately 7 to 10 years from seroconversion to death. The natural history of HIV infection is divided into following stages.

The viral transmission:

HIV infection is acquired through sexual contact, exposure to contaminated blood or perinatal transmission.

Primary HIV infection (Acute HIV infection or acute seroconversion syndrome) The time from exposure to onset of symptoms is usually 2 to 4 weeks, but the incubation may be as long as 6 weeks, characterized by mononucleosis or flu-like symptoms.

Seroconversion:

Seroconversion with positive HIV serology generally takes place at 6 to 12 weeks following an established transmission event.

Early asymptomatic phase:

As the stage implies, the patient does not have any HIV related symptoms, clinical manifestations include persistent generalized lymphadenopathy involving 2 or more sites and skin manifestations such as seborrheic dermatitis. Early in the course of HIV infection, prior to significant immunodeficiency, plasma viremia generally is low. The viral burden(number of infected cells) in the peripheral blood is extremely low and expression of HIV in these cells is minimal or undetectable.

Early symptomatic HIV disease:

The patients in this stage may have mild features of the disease. There is active replication of HIV virus in this period.

Late symptomatic HIV disease- AIDS:

The progression to AIDS results from the continuous replication of virus in the lymphoid tissue which is associated with progressive destruction of this tissue and severe impairment of immune function. This stage is characterized by severe and persistent constitutional signs and symptoms of opportunistic infections or neoplasms or both. Common examples are Perianal sepsis, Tubercular abscess, Lymphadenopathy, Acute abdomen, lymphomas, kaposis sarcomas etc.

Advanced HIV disease:

In this stage, patients may have AIDS defining opportunistic infections and malignancies. Neurological disease is more prevalent at this stage of infection.

ABSCESSES:

Abscesses are common in HIV-positive patients. Young adult patients of either sex With pyomyositis (especially of the large striated muscles of the trunk and limbs) are particularly likely to have HIV disease.[4,24]

ANAL WARTS:

It is caused by Human papilloma virus which incorporate to human genome. It result in early neoplastic change within anal epithelium (AIN) and the risk for progression is small or unlikely within prognosis of HIV disease.

ANO-RECTAL ULCERATIONS:

It can occur in any part of anal canal or rectum. It is caused by Herpes simplex virus, but most of time no organisms are detected.

ACUTE ABDOMENAL CONDITIONS:

It includes appendicitis, infective colitis caused by the CMV and other organisms, gastrointestinal obstruction secondary to lymphomas, mycobacterial diseases (SBO), kaposi's sarcomas (intussusception), Ogilvie like syndrome progress to toxic megacolon due to CMV.

HEPATOBILIARY DISEASES:

Chronic hepatitis B and C infections share common routes of transmission with HIV. Hepatobiliary opportunistic infections with CMV and fungi like Cryptococcus neoformans, Histoplasma capsulatum, Candida albicans etc. are features of patients with severe immunosuppression having CD4 counts<100. Mechanical obstruction of the bile ducts may results from enlarged lymph nodes at the porta hepatis or rarely due to AIDS-associated sclerosing cholangiopathy due to Cryptosporidium species, CMV and Microsporidia. Acute acalculous cholecystitis occurs at a higher frequency in HIV-infected patients and requires cholecystectomy[4].

SPLENOMEGALY:

It is common in AIDS patients. It is due to Portal hypertension , infection with CMV,Microbacterium ,pneumocystis carinii etc. It can be secondary to lymphoma.

NEOPLASMS:

Kaposi's sarcoma may be found to involve the skin,GIT,liver,lungs and even heart.

There has been a decline in its incidence after the wide spread use of antiretroviral therapy. Colorectal adenocarcinomas have been diagnosed in more advanced stage and at an earlier age group of patients in HIV-positive patients. Surgery for these is limited to that for diagnostic purpose, management of complications or palliative interventions for events like obstruction, bleeding or perforation. Non-Hodgkin's

lymphoma, commonly affecting GIT is another common malignancy in patients with AIDS and is commonly undifferentiated and aggressive in nature. It needs to be primarily managed by chemotherapy[4].

VASCULAR DISEASES:

Necrotizing arteriopathy leading to vascular aneurysm and progressive granulomatous vasculitis leading to fibroproliferative aortoiliac occlusive diseases are entities associated with HIV infection. Salmonella have been shown to have an affinity for atherosclerotic plaques in such patients leading to salmonella arteritis. An invasive form of this infection can lead to pseudoaneurysm formation. Infected pseudoaneurysm with common bacteria is seen among IVDUs. Surgical management in the form of arterial reconstruction may avoid the potentially fatal rupture[4].

DIAGNOSIS OF HIV INFECTION AND AIDS

INDIAN GUIDELINES

A number of moral, ethical, legal and psychosocial issues are related with a positive HIV status. These issues may vary from country to country, hence, it is imperative to know the national guidelines regarding HIV testing.

Objectives of HIV testing:

1. Surveillance – To monitor the trend of HIV infection in the population or in subgroup for facilitation of intervention.
2. Transfusion safety – To test blood, organs or tissues for ensuring safety to the patients.
3. Identification of asymptomatic HIV infection for diagnosis or voluntary testing purposes.
4. To diagnose clinically suspected cases.
5. To evaluate and monitor cases of occupational exposure.
6. Research[25].

The laboratory diagnosis of HIV is based on:

1) Indirect methods and 2) Direct methods.

1) Indirect methods.

Screening tests.

Supplemental tests.

Screening tests:

Simple/Rapid assays are based on:

a) Agglutination assays:

Highly sensitive test with low specificity, it requires only few minutes to perform. It is less expensive as it dose not require equipment like ELISA reader.

b) DOT BLOT assays/COMB test:

The principle of these tests are based on immune-chromatography. The assays are rapid, easy to perform, do not require sophisticated equipments. The results are read by development of color on a specific circle, dot or a line.

c) ELISA (Enzyme-linked immunosorbent assay):

It is the most commonly performed screening test. Most kits contain antigens for both HIV-1 and HIV-2, and hence, are able to detect either. The ELISA has a sensitivity of 99.7% and the specificity of >98.5%. the recommended first line test by NACO are ELISA.

Supplemental tests:

Being more specific than the screening tests, one of the supplemental test is used to confirm the reactivity of the patient serum detected by E/R/S.

a) Western blot:

Western blot is the most commonly used confirmatory test. It is an immunoblot test which detects various types of anti-HIV antibodies by blotting technique using a nitrocellulose membrane. As per the national HIV

testing policy of India, Western blot test is only to be used in case of equivocal or discordant results of ELISA.

b) Indirect immunoflurescence assay:

It turns positive earlier in the course of the disease than conventional ELISA and Western blot technique26.

c) Radioimmunoprecipitation assay.

d) Rapid latex agglutination assay:

This test is a modification of standard latex agglutination test.

2) Direct methods

a) Detection of viral genomic material.

b) P24 antigen capture assay.

c) Viral culture.

a) Detection of viral genomic material:

1) Polymerase chain reaction (PCR):

PCR helps to find a specific gene sequence amongst an abundance of other DNA.

DNA – PCR →Is frequently employed for early detection of HIV infection. It is a highly sensitive test, (detection of one infected cell per 1,00,000 cells) and hence the test is highly subject to the false positivity by means of contamination or by laboratory processing error.

RT – PCR → Provides means for measuring viral RNA. It can be used for both qualitative detection as well as quantification. The presently available ultrasensitive RT-PCR assays have a detection limit of 50 copies per ml.

The quantification or measurement of viral load is an essential parameter on the basis of which the anti-retroviral therapy is initiated as well as the therapeutic response is monitored.

2) NASBA (Nucleic Acid Sequence Based Amplification):

   HIV-1 RNA may be quantified by RNA amplification using quantitative nucleic acid sequence based amplification by using electrochemical luminescence.

3) b-DNA:

   Branched DNA technology detects HIV RNA directly through amplification of signal from a captured viral genome.

b) P24 antigen capture assay:

There is brisk rise in P24 antigen levels during first few weeks of infection, hence, this test has greatest use as a screening test for HIV infection during acute HIV syndrome when P24 level is high in serum prior to the development of antibodies. The antigenemia is transient, limiting its detection.

c) Viral culture:

Viral cultivation methods are expensive and labour intensive. Adherence to sterile technique is very crucial. Peripheral blood mononuclear cells are co-cultured with uninfected donor cells that have been stimulated with phytohemagglutinin for 3 days. These co-cultures are monitored every 3 days for 28 days or longer to assess the formation of syncytia and presence of HIV P24 antigen or RT in culture supernatants.[13,15]

METHODOLOGY

Source of Data:

The patients admitted in BLDEU'S Shri B.M.Patil Medical College, Bijapur/attending surgical OPD who were HIV positive.

In this study, the CD4 count was not considered as an AIDS-defining parameter. Details of cases were recorded including history, clinical examination and standard investigations done wherever necessary.

Inclusion criteria:

All HIV positive patients who are admitted in BLDEA's Shri B.M.Patil Medical College, Hospital and Research centre/attending surgical OPD having surgical diseases.

Statistical methods:

Diagrammatic presentation and Mean ± S D.

Investigations:

Standard investigations wherever necessary and Serum ELISA/ Tridot test.

RESULTS

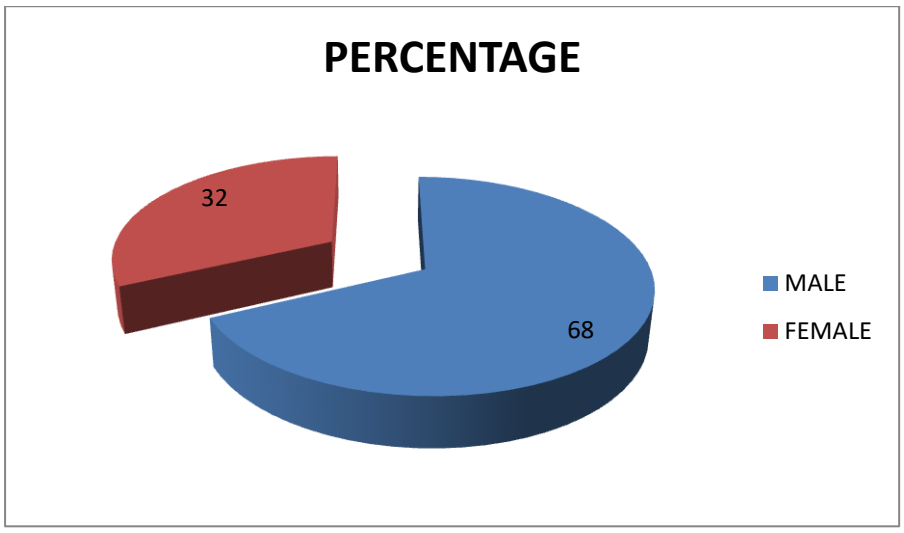
During the period of study from October 2008 to May 2010, 54,406 patients were admitted in BLDEU's Shri B.M.Patil Medical College Hospital and Research Centre, Bijapur. Out of them 896 patients were HIV positive (1.64%).

Among these HIV positive patients, 136 patients were suffering from different surgical diseases (15.17%).Out of 136 patients, 92(68%) patients were males and 44(32%) patients were females(2:1).

Table no. 1- Sex distribution

SEX	No. of patients
Male	92
Female	44

Graph no. 1- Sex distribution (%)



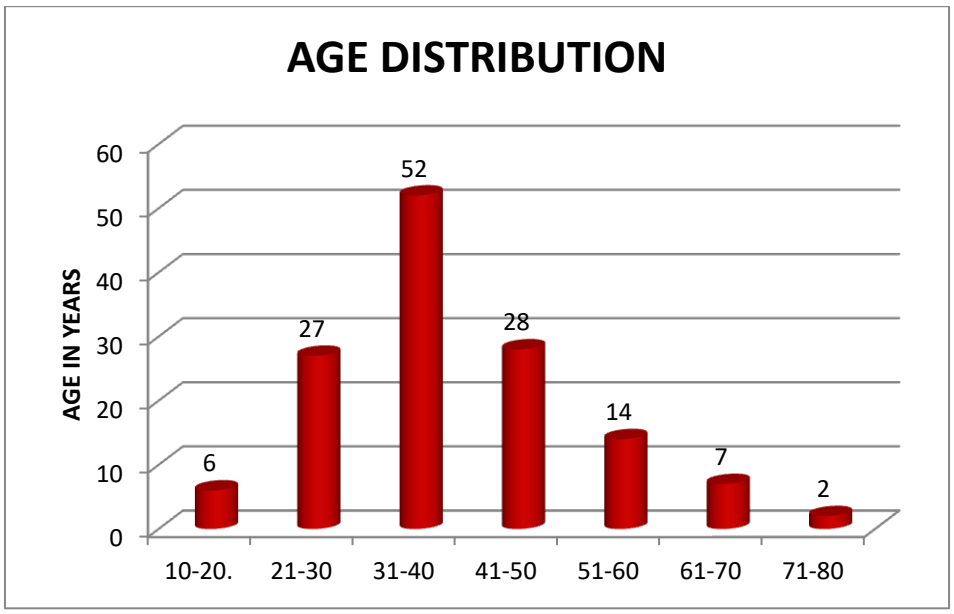
Age distribution:

The incidence was maximum in 3rd to 5th decade (59%) and mean age of 41 years (Range 32-51).

Table No. 2- Age distribution.

Age (in years)	No. of patients
10-20	6
21-30	27
31-40	52
41-50	28
51-60	14
61-70	7
71-80	2

Graph No. 2- Age distribution.



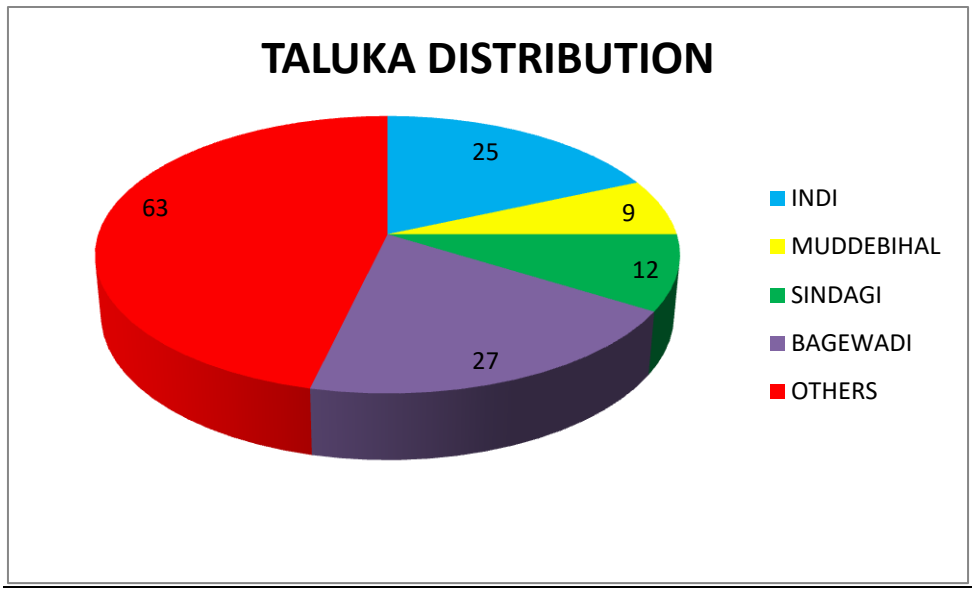
Taluka place distribution.

The incidence was maximum in Indi and Bagewadi taluka (38%) in Bijapur district.

Table No. 3- Taluka place distribution

Taluka place	No. of patients
Indi	25
Bagewadi	27
Sindagi	12
Muddebihal	9
Others	63

Graph No. 3- Taluka place distribution.



Surgical diseases distribution.

Out of 136 patients, 34 HIV positive patients were suffering from Abscess formation (25%). 13 different types of abscesses were noticed. Among them 16 patients were suffering from Peri-anal abscess formation (47%). However rare abscess formation, like brain abscess, parotid abscess, parapharyngeal abscess has also been noticed among HIV positive patients.

41 patients were suffering from ano-rectal pathology(30%). Among them, 14 patients had fissure in ano(10.3%), 8 patients had fistula in ano(5.8%), 2 patients had hemorrhoids and 1 patient was suffering from carcinoma rectum.

The pleural effusion and pneumothorax were noticed in 10(7.35%) and 6(4.41%) patients respectively and these patients required ICD insertion. 7 patients had pleural effusion due to bacterial pneumonia and 3 patients due to pulmonary TB. Among patients with pneumothorax, 3 patients were suffering from pulmonary TB.

7 HIV positive patients were suffering from appendicitis(5.14%) and 6 patients(4.41%) with pancreatitis. Out of them, 5 patients had ART treatment history and 1 patient was suffering from hemorrhagic pancreatitis. 1 patient had alcoholic pancreatitis.

5 patients (3.67%) were suffering from lymphadenopathy and three of them had tubercular lymphadenopathy. 5 patients (3.67%) were suffering from abdominal koch's. Cellulitis was found in 5 patients, 3 had lower limb and 2 had upper limb cellulitis. 6 patients (4.41%) admitted with history of RTA. All of them were alcoholic and had head injuries.

The other surgical diseases like, hydrocele (2.94%), portal hypertension (1.47%), ureteric calculi (2.2%), bladder calculi (0.73%), inguinal hernia (2.2%),

external iliac artery occlusion (0.73%), diaphragmatic eventration (0.73%), carcinoma GB (0.73%), hypothyroidism (0.73%), varicose veins (0.73%), calculous cholecystitis (0.73%), malignant melanoma (0.73%), splenic injury (0.73%), deep vein thrombosis (0.73%) were also been noticed. 2 patients were admitted for stoma closure. 1 patient for colostomy and 1 for ileostomy closure. The indicationfor colostomy and ileostomy were not known.

Table No. 4- Surgical diseases distribution.

Surgical diseases	No. of patients
Abscess formation	34
Fissure	14
Fistula	8
Pneumothorax	6
Pleural effusion	10
Hydrocele	4
Lymphadenopathy	5
Abdominal koch's	5
Appendicitis	7
Pancreatitis	6
Head injury	6
Cellulitis	5
Others	26

Graph NO. 4- Surgical diseases distribution.

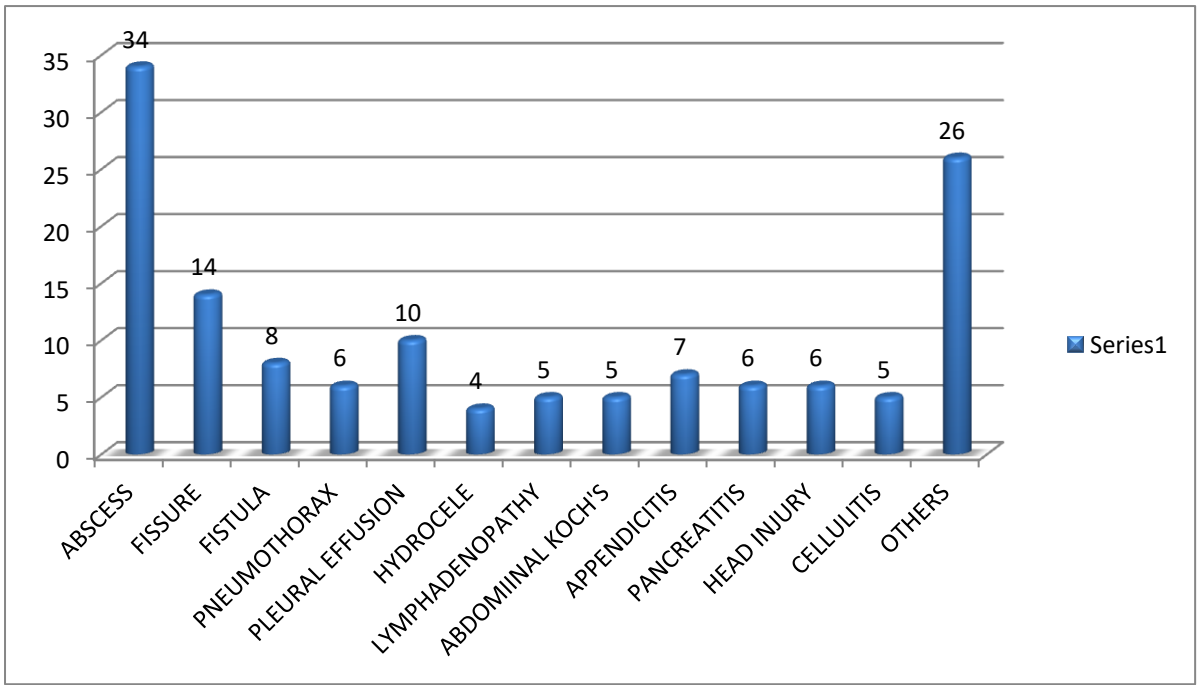
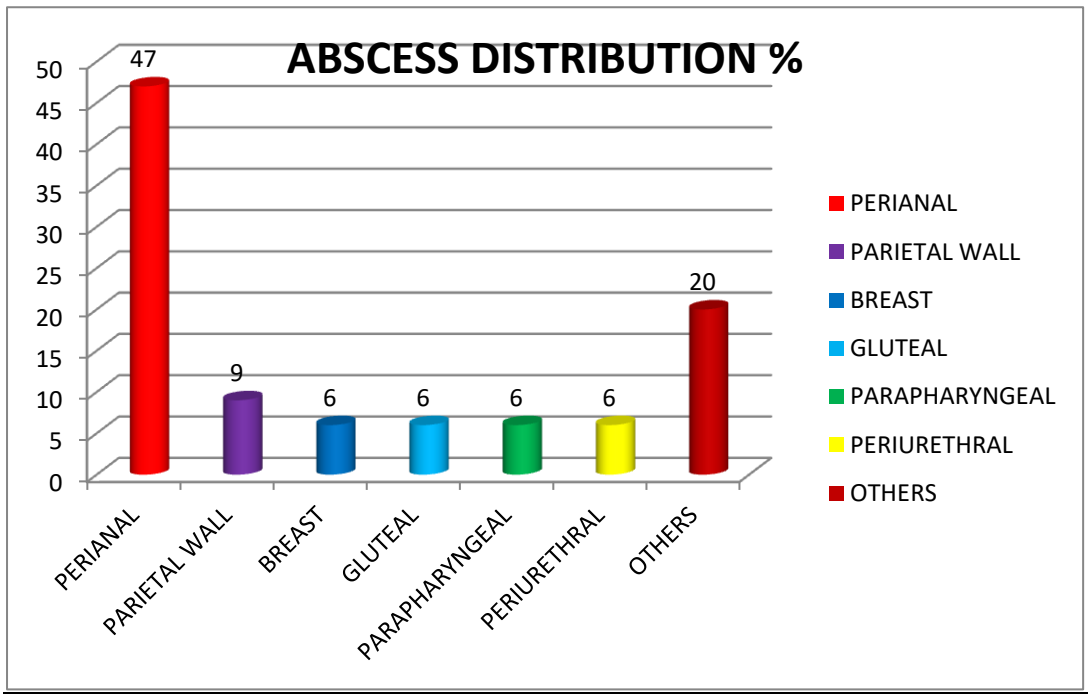
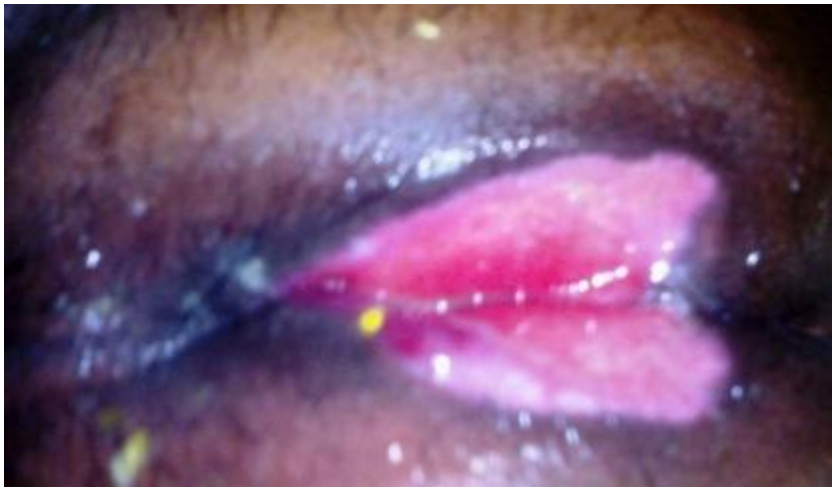


Table No. 4a- Abscess distribution.

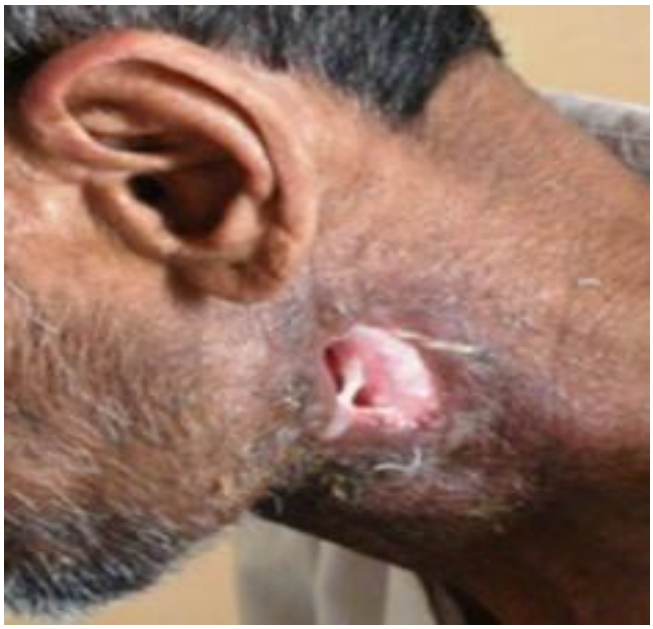
Abscess	No. of patients
Peri-anal	16
Parietal	3
Breast	2
Gluteal	2
Parapharyngeal	2
Peri-urethral	2
Others	7

Graph NO. 4a- Abscess distribution (%).

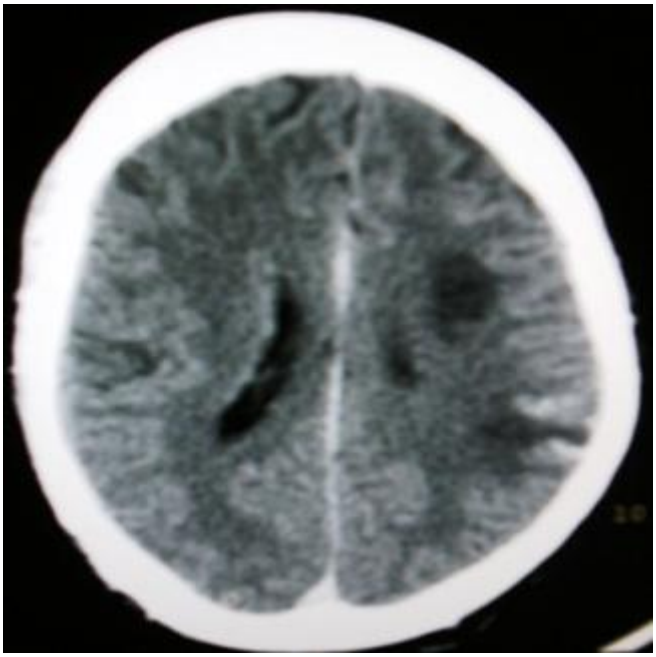




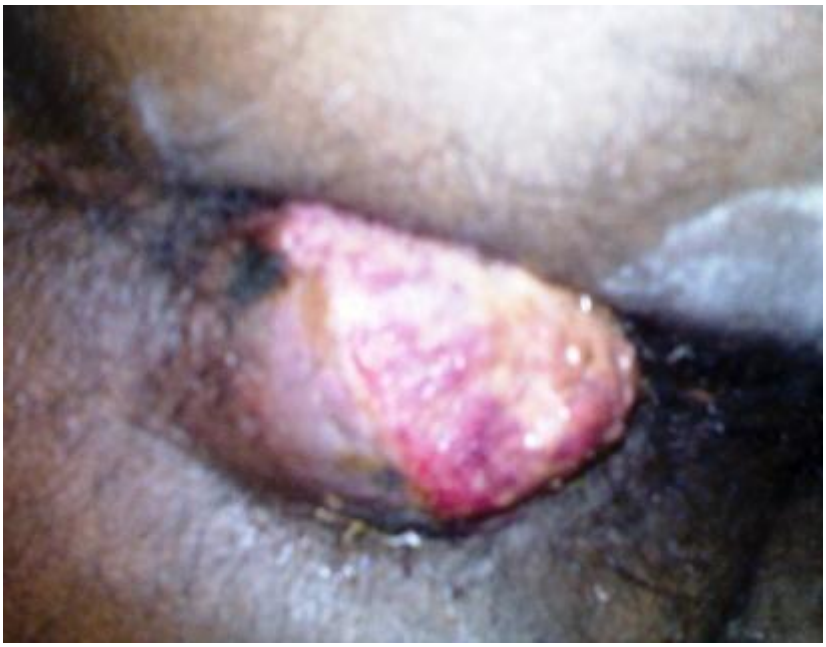
(BURST OPEN PERI-ANAL ABSCESS)



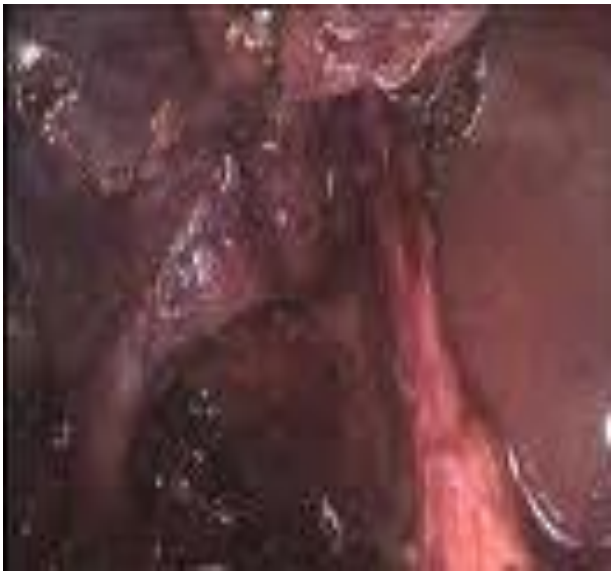
(BURST OPEN PARAPHARYNGEAL ABSCESS)



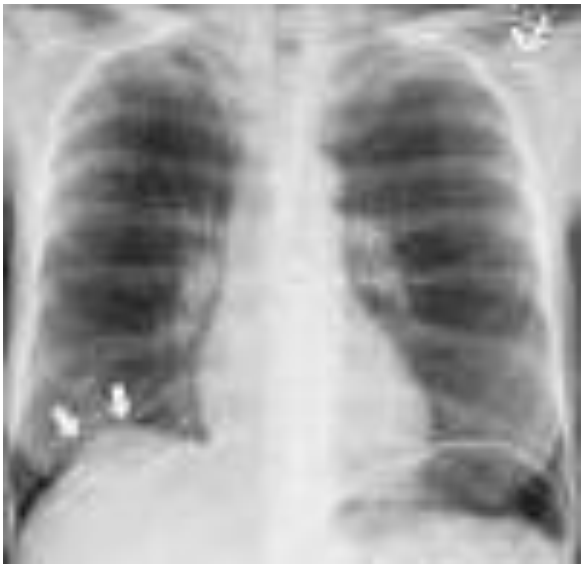
(CT-SCAN SHOWING BRAIN ABSCESS)



(CARCINOMA RECTUM)



(PAROTID ABSCESS)



(DIAPHRAGMATIC EVENTRATION)

DISCUSSION

The present study titled "The study of clinical profile of surgical diseases among HIV positive patients" was conducted at BLDEU'S, Shri B.M.Patil Medical College, Hospital and Research Center, Bijapur.

The objective of the study was to know the prevalence of surgical diseases among HIV positive patients.

During our study period, 54,406 patients were admitted and in that, 896 patients were HIV positive(1.64%). According to the HIV surveillance fact sheet of Karnataka 2006, the incidence of HIV infection in Bijapur district among Anti Natal Care attendees was 1.75%.

The incidence of surgical diseases among HIV positive patients in our study was 15.17%. Kedir M. showed the incidence of 12.1% among the HIV positive patients at Gondar University Hospital, Gondar[7].

In current study, 92 patients were males and 44 were females with 2:1 ratio. The male to female ratio was 3:1 in a study conducted at a referral hospital by A.R. Sircar et al[29].

The surgical diseases among HIV positive patients were most common in 3rd to 5th decade with mean age of 41 years (Range 32-51). Sidney R. Nadal et al, similar to our study, found the incidence most common in 3rd to 5th decade.

In the present study, 41 patients (30%) were suffering from ano-rectal pathology. Steven D. Wexner et al, from ST. Luke's-Roosevelt Hospital, New York, reported the incidence of 34% of ano-rectal pathology among HIV positive patients[6].

In the current study, the incidence of peri-anal abscess, fistula in ano, fissure in ano and hemorrhoids were 11.7%, 5.8%, 10.2%, and 1.47% respectively. Steven D.

Wexner et al, in their study of 340 patients, observed the incidence of peri-anal abscess, fistula in ano, fissure in ano and hemorrhoids were 4.7%, 4.11%, 2.35% and 0.3% respectively[6].

In our study, 10 patients (7.35%) had pleural effusion and most of them due to bacterial pneumonia. Pneumothorax was found in 6 patients (4.41%). Afessa B et al, in their 599 HIV positive patients observed the pleural effusion in 14.6% of patients and most of them due to bacterial pneumonia, similar to our study. The incidence of pneumothorax was 1.2% in their study[30].

7 patients (5.14%) were suffering from appendicitis. La Raja RD et al, in their 36 patients, 6 patients (16.7%) had appendicitis[31]. Wells SB et al, conducted a study, involving 1,725 consecutive hospitalized HIV-infected patients, reported cases (0.5%) of appendicitis[32].

In our study, 6 patients(4.41%) suffered from pancreatitis. Out of them 1 patient had alcoholic pancreatitis. 5 patients had history of taking ART prior. Mitchell S. Cappell, Michael Marks, in their study of 939 patients, the incidence of pancreatitis was 4.7%, which is almost similar to our study[33]. Battillocchi B et al, reported 2-5% of cases were drug related, among all the cases of pancreatitis.[34,35]

In this study, 5 patients(3.67%) had lymphadenopathy and 3 of them were due to tuberculosis. P.S.Gill et al, observed the incidence of 2.3% among HIV positive patients. Tubercular lymphadenopathy accounted for 60% among them which was similar to our study[36].

Abdominal TB was seen in 5 patients (3.67%). AD Mathur et al, noticed the incidence of 7.33% in their study of 150 patients[37]. In our study, 3 patients (2.2%) were diagnosed to have ureteric calculi and in them history of ART was not known.

Cyrus B. Noble et al, observed the incidence of calculi upto 7% of the patients and the incidence increases due to use of indinavir drug[38].

In the current study, 3 patients (2.2%) were suffering from inguinal hernia. All of them were unilateral and uncomplicated. L. Morfeldt et al, noticed the incidence of hernia of abdominal wall in 17 patients (1.58%) in their 1072 HIV positive patients and 2 patients (0.2%) were suffering from inguinal hernia. They found that, incidence was high in patients taking ART (protease inhibitors and nucleoside reverse transcriptase inhibitors), probably because, the ART induces weakening of the supportive tissues[39].

In this study, out of 136 HIV positive patients, only 1 patient(0.73%) was suffering from deep vein thrombosis. There was no history of any major surgery or trauma in the past. Saif MW, Bona R., Greenberg B., similar to our study, found the incidence of 0.76% in their 131 HIV positive patients[40].

5 patients (3.67%) were suffering from cellulitis. 3 patients had lower limb and 2 patients had upper limb cellulitis. Manfredi R., Calza L., Chiodon F., conducted a 10 years survey and they found the incidence of cellulitis in 3% of patients in their 2221 HIV positive patients[41].

In our study, only 1 patient (0.73%) was suffering from carcinoma rectum. Wasserberg Nir et al, noticed the incidence of 0.3% in their 3,951 patients and they observed that, HIV positive patients tend to have an early and more aggressive presentation with less favorable outcome[42].

In our study, only 1 patient(0.73%) was having splenic injury due to blunt trauma abdomen. Eddy H. Carrillo et al, in their 42 traumatic patients, observed the incidence of 7.14%. Out of 42 patients, 12 patients(28.5%) were having small bowel injury[10].

Besides these surgical diseases, we observed the other surgical conditions, like, external iliac artery occlusion, diaphragmatic eventration,, hydrocele, head injuries, carcinoma gall bladder, hypothyroidism, bilateral varicose veins, lipoma over scalp and malignant melanoma with hepatic metastasis. These surgical diseases were incidentally found along with HIV infection.

SURGICAL DISEASES	OUR STUDY (%)	RELATED STUDY (%)
Ano-rectal pathology	30%	Steven D. Wexner et al – 34%.
Pleural effusion	7.35%	Afessa B. et al – 14.6%.
Pneumothorax	4.41%	Afessa B. et al – 1.2%.
Appendicitis	5.14%	La Raja RD et al – 16.7% Wells SB et al – 0.5%.
Pancreatitis	4.41%	Mitchell S. Cappell, Michael Marks – 4.7%.
Lymphadenopathy	3.67%	P.S.Gill et al – 2.3%.
Abdominal TB	3.67%	AD Mathur et al – 7.33%.
Ureteric calculi	2.2%	Cyrus B. Noble et al – upto 7%.
Inguinal hernia	2.2%	L. Morfeldt et al – 0.2%.
Deep Vein Thrombosis	0.73%	Saif MW, Bona R., Greenberg B. – 0.76%.
Cellulitis	3.67%	Manfredi R., Calza L., Chiodon F. – 3%.
Splenic injury	0.73%	Eddy H. Carrillo et al – 7.14%.

CONCLUSION

The total number of 896 HIV positive patients were admitted during this study, out of them 136 patients had different surgical diseases and majority of patients (25%) had some or other abscesses. Among them, peri-anal abscess was the most common finding. Rare abscesses, like, brain abscess, parapharyngeal abscess, parotid abscess were also noticed in these immune-compromised patients.

The association of antiretroviral therapy and pancreatitis is known. In our study, 6 patients had pancreatitis and out of them, 5 patients had history of antiretroviral therapy. Apart from these, we came across the other uncommon surgical conditions like external iliac artery occlusion, diaphragmatic eventration, carcinoma gall bladder, malignant melanoma in HIV positive patients.

SUMMARY

During our study, 54,406 patients were admitted and among them 896 patients were HIV positive (1.64%). The incidence of HIV infection among Ante Natal Care attendees in Bijapur district was 1.75%. Out of these 896 HIV positive, 136 patients (15.17%) were suffered from different surgical diseases. 92 patients (68%) were males and 44 patients (32%) were females and the incidence of HIV infection with surgical diseases were common among middle aged male patients. Abscess was the most common surgical condition in HIV positive patients. Majority of these patients had peri-anal abscess. Ano-rectal pathologies (fissure, fistula, hemorrhoids, carcinoma rectum) were seen in 30% of patients.

Pulmonary complications (pleural effusion and pneumothorax) that required ICD insertion were observed in 11.7% of patients and most of them due to bacterial pneumonia. 6 patients had pancreatitis and out them 5 patients had a history of antiretroviral therapy. The incidence of lymphadenopathy, abdominal tuberculosis and cellulitis(3.67%) were same among HIV positive patients. The other surgical conditions, like, external iliac artery occlusion, diaphragmatic eventration, malignant melanoma, carcinoma gall bladder, varicose veins, lipoma, hypothyroidism, has been in incidentally noticed in HIV infected patients.

BIBLIOGRAPHY

1) Misra AP, Amla Rao, Sen Gupta D. Guide book of HIV infection and AIDS for family physician. The Indian Medical Association in collaboration with National AIDS Control Organization, 2nd Edition, 1997: 5-8.
2) American Thoracic Society/ Centers for Disease Control Diagnostic Standards and Classification of Tuberculosis. Amer. Rev. Respir. Dis 1990; 142: 725-35.
3) Murray CJL et al. Cost effectiveness of chemotherapy for pulmonary tuberculosis in three Sub Saharan African Countries. Lancet 1991; 338: 1305-08.
4) Prosanta K R Bhattacharjee. Human immunodeficiency virus from the Surgeon's view point. Ann Trop Med Public Health, Aug 2008; 1: 35-42.
5) Gene Robinson et al. Surgery in patients with Acquired Immunodeficiency Syndrome. Arch Surg, Feb 1987; 122: 170-75.
6) Steven D. Wexner et al. The surgical management of Ano-rectal Diseases in AIDS and Pre-AIDS patients. Dis Colon Rectum, 1986; 29: 719-23.
7) Kedir M. Seroprevalence pattern and outcome of HIV /AIDS among the surgical patients at Gondar University Hospital. Ethiop Med. J. Jan 2008; 46 (1) : 8-15.
8) Yoshida D., Caruso J. M. Abdominal pain in HIV infected patients. Emergency services San Francisco General Hospital California. J. Emerg Med. 2002 Aug; 23 (2): 111-6.
9) Sian Jones, Cheryl Smith, David N Rose. Is HIV infection a risk factor for complications of surgery.The mountsinai journal of medicine, Oct 2002; 69 (5): 329-33.

10) Eddy H. Carrillo et al. Penetrating Trauma and Emergency Surgery in patients with AIDS. The American Journal of Surgery, Oct 1995;170: 341-44.

11) Consten E.C.J., Slors J.F.M., Danner S.A., Van Lanschot J.J.B. Major complications in HIV infected patients with Peri-anal sepsis. Netherland Journal of Medicine, Aug 1995; 42 (2): 25.

12) D. Savioz et al. Acute right iliac fossa pain in Acquired immunodeficiency. British Journal of Surgery, 1996; 83: 644-46.

13) Anthony S. Fauci, H. Clifford Lane. Chapter 309: HIV Disease; AIDS and related disorders. In Harrisons, Principle of Internal Medicine, Brannwald E. et al; New York, Mc-Graw Hill, 15th Edition, 2001; 2: 1880-96.

14) Joshi P.L. Chapter 3. Global and National Review of HIV/AIDS Epidemic. In Vinod K. Sharma, STD and AIDS, 1st Edition; 2002: 5-7.

15) Rewari BB, Joshi PL. Epidemiology of HIV/AIDS with special reference to India. Medicine update 2003; 13: 77-86.

16) The HIV/AIDS Epidemic; Situation at a glance. Karnataka State AIDS Prevention Society, Bangalore, Sept 2003; 3-10.

17) Peterlin BM, Luciw PA. Molecular Biology of HIV. AIDS 1988; 2: 529-40.

18) Ginseppe Pantateo, Anthony S. Fauci. New Concepts in the immunopathogenesis of HIV infection. Annal Rev. Immunol 1995; 13: 487-512.

19) Park K. Textbook of Preventive and Social Medicine, 19th Edition. Jabalpur Banarsidas Bhanot Publishers, 2007: 261-67.

20) Steven M. Schnittman et al. Immuno pathogenic Mechanisms in Human Immunodeficiency Virus infection. Annals of Internal Medicine 1991; 14: 678-92.

21) Cecillia Grazios, James F. Demarest et al. HIV infection is active and progressive in lymphoid tissue during the clinically latent stage of disease. Nature 1993; 362: 355-58.

22) Sheppard HW et al. The characterization of non-progressors; Long term HIV-I infection with Stable CD4 T-cells levels. AIDS 1993; 7: 1159-60.

23) Cacciarelli AG et al. Acute cholecystitis in AIDS patients: Correlation of Tc-99m hepatobiliary scintigraphy with histopathologic laboratory findings and CD4 count. Clin Nucl Med, Apr 1998; 23(4): 226-8.

24) Saltzman DJ, Williams RA, Gelfund DV, Wilson SE. The Surgeon and AIDS: Twenty years later. Arch Surg 2005; 140: 961-7.

25) NACO Specialists Training and Reference Module. Editor; Rewari BB, NACO, Delhi 2001:8-9.

26) Danna Gallo et al. Comparison of detection of antibody to the AIDS virus by enzyme immunoassay, immunoflurescence and Western Blot Method. Journal of Clinical Microbiology, 1986; 23: 1049-51.

27) Alison D. Grant, Kevin M. Decock. HIV infection and AIDS in the Developing World. British Medical Journal 2001; 322: 1475-78.

28) Ghate MV, Divekar AD, Risbud AR et al. Changing Presentations in Referral Human Immunodeficiency Virus infection in Pune, India. JAPI 2002; 50: 671-73.

29) Sircar AR et al. Clinical Profile of AIDS; A Study at a Referral Hospital. JAPI 1998; 46(9): 775-8.

30) Afessa B. et al. The pulmonary complications, ICU support and Prognostic factors of Hospitalized patients with HIV (PIP) Study. Chest 2000, Apr; 137(4): 1031-7.

31) La Raja RD et al. The incidence of intra-abdominal surgery in AIDS. Arch Surg 1989; 105: 175-9.

32) Wells SB et al. Appendiceal disease in HIV infected homosexual men. AIDS Reader, Sept 1991: 173-5.

33) Mitchell S. Capell, Michael Marks. Acute pancreatitis in HIV positive patients. The American Journal of Medicine, Mar 1995; 98(3): 243-8.

34) Battillochi B. et al. Drug induced acute pancreatitis. Chir Ital 2002; 54: 605-12.

35) Anand H, Parthasarathi G, Ramesh M. Stavudine induced pancreatitis followed by Iopinavir-ritonavir induced pancreatitis. Journal Post grad Med, Apr 2008; 54(2): 153-55.

36) P.S.Gill et al. Lymphadenopathy – An Important Guiding Tool for Detecting Hidden HIV positive Cases. JAPI 1998; 38(6): 225-9.

37) AD Mathur et al. Correlation of CD4 counts with Pulmonary and Extra-pulmonary Tuberculosis in 150 consecutive cases of HIV/AIDS. Arch Surg 1997; 14: 280-84.

38) Cyrus B. Noble et al. Ureteral obstruction secondary to indinavir in the pediatric HIV population. HIV Case Book, 1998; 28: 627-29.

39) L. Marfeldt et al. Hernia of the Abdominal wall – A High Incidence In HIV Infected patients. Antiviral Therapy 2001; 6(4): 64.

40) Saif MW, Bona R, Greenberg B. AIDS and Thrombosis: Retrospective Study of 131 HIV infected patients. AIDS patient Care, STDS. Jan2001; 15(6): 311-20.

41) Manfredi R, Calza L, Chiodo F. Epidemiology and microbiology of Cellulitis and bacterial soft tissue infection during HIV disease. J Catan Pathol, Mar 2002; 29(3): 168-72.

42) Wassenberg Nir et al. Colorectal cancer in HIV infected patients. Colo Surg Israel, Aug 2003; 41(2): 739-41.

PROFORMA

SCHEME OF CASE TAKING:

1) Name : CASE NO :

2) Age/sex : IP NO :

3) Religion DOA :

DOS :

4) Occupation : DOD :

5) Residence :

6) Chief Complaints :

7) Past History-

8) Treatment history – Any surgery

Systemic illness.

9) Personal History – Diet

Appetite

Bowel/Bladder

Sleep

Habits

10) Family History -

11) General Physical Examination -

Built	Nourishment
Pulse	Pallor:
BP	RR
Temp	Jaundice
Clubbing	Cynosis
Edema	Lymphadenopathy

12) Local examination:

13) Other systemic examination :

- Abdominal system
- Respiratory system.
- Cardiovascular system.
- Central nervous system.

14) INVESTIGATIONS UNDERGONE BY PATIENT:

Blood routine

Urine routine

BT/CT

Random blood sugar

Serum ELISA for Hiv / Tridot test

Chest x-ray

Serum urea, creatinine

USG Abdomen

Others

15) FINAL DIAGNOSIS:

16) SURGICAL DISEASES ENCOUNTERED:

SURGICAL DISEASES	PRESENT	ABSENT
ABSCESS		
PERIANAL SEPSIS		
ANORECTAL ULCERS		
FISSURE IN ANO		
ACUTE ABDOMEN		
OTHERS		

17) INFERENCE :

18) COMMENTS:

INFORMED CONSENT FORM :

TITLE OF THE PROJECT	:	THE STUDY OF CLINICAL PROFILE OF SURGICAL DISEASES AMONG HIV POSITIVE PATIENTS.
GUIDE	:	Dr. TEJASWINI UDACHAN (PROFFESOR OF SURGERY)
CO- GUIDE	:	
P.G. STUDENT	:	Dr. MANDAR B. DHAMANGAONKAR

PURPOSE OF RESEARCH:

I have been informed that this study is conducted to know the surgical diseases among HIV positive patients. I have also been given free choice of participation in this study.

PROCEDURE:

I am aware that in addition to routine care received I will be asked series of questions by the investigator. I have been asked to undergo the necessary investigations and treatment, which will help the investigator in this study.

RISK AND DISCOMFORTS:

I understand that I may experience some pain and discomforts during the examination or during my treatment. This is mainly the result of my condition and the procedures of this study are not expected to exaggerate these feelings which are associated with the usual course of treatment.

BENEFITS:

I understand that my participation in the study will help to know the surgical diseases in HIV positive patients.

CONFIDENTIALITY:

I understand that the medical information produced by this study will become a part of hospital records and will be subject to the confidentiality. Information of sensitive personal nature will not be part of the medical record, but will be stored in the investigations research file. If the data are used for publication in the medical literature or for teaching purpose, no name will be used and other identifiers such as photographs will be used only with special written permission. I understand that I may see the photograph before giving the permission.

REQUEST FOR MORE INFORMATION:

I understand that I may ask more questions about the study at anytime Dr. Mandar B. Dhamangaonkar. at the department of surgery who will be available to answer my questions or concerns. I understand that I will be informed of any significant new findings discovered during the course of the study, which might influence my continued participation. A copy of this consent form will be given to me to keep for careful reading.

REFUSAL FOR WITHDRAWAL OF PARTICIPATION:

I understand that my participation is voluntary and that I may refuse to participate or may withdraw consent and discontinue participation in the study at any time without prejudice. I also understand that Dr. Mandar B. Dhamangaonkar may terminate my participation in the study after he has explained the reasons for doing so.

INJURY STATEMENT:

I understand that in the unlikely event of injury to me resulting directly from my participation in this study, if such injury were reported promptly, the appropriate treatment would be available to me. But, no further compensation would be provided

by the hospital. I understand that by my agreements to participate in this study and not waiving any of my legal rights.

I have explained to _____the purpose of the research, the procedures required and the possible risks to the best of my ability.

_____ _____

Dr. Mandar B. Dhamangaonkar (Investigator) Date

STUDY SUBJECT CONSENT STATEMENT:

I confirm that Dr. Mandar B. Dhamangaonkar has explained to me the purpose of research, the study procedure, that I will undergo and the possible discomforts as well as benefits that I may experience in my own language. I have been explained all the above in detail in my own language and I understand the same. Therefore I agree to give consent to participate as a subject in this research project.

_____ _____

(Participant) Date

_____ _____

(Witness to signature) Date

KEY TO MASTER CHART

Abs	- Abscess Formation
PA	- Peri-anal abscess
PW	- Parietal Wall abscess
Br	- Breast abscess
Gu	- Gluteal abscess
Pa	- Parapharyngeal abscess
PU	- Peri-Urethral abscess
Coa	- Cold abscess
Se	- Septal abscess
Bn	- Brain abscess
Vl	- Vulval abscess
Spc	- Splenic abscess
RilA	- Right inguinal abscess
Paro	- Parotid abscess
Fis	- Fissure in ano
Fit	- Fistula in ano
Ple	- Pleural effusion
Pnx	- Pneumothorax
Hydro	- Hydrocele
Ly	- Lymphadenopathy
AK	- Abdominal Koch’s
Hae	- Haemorrhoids
App	- Appendicitis
PH	- Portal Hypertension

Pan	- Pancreatitis
HI	- Head Injury
Urc	- Ureteric calculi
InH	- Inguinal Hernia
DVT	- Deep Vein Thrombosis
Gas	- Gastritis
EIAO	- External Iliac Artery Occlusion
DiE	- Diaphragmatic Eventration
Mad	- Mesentric adenitis
Spi	- Splenic injury
CR	- Carcinoma Rectum
CAG	- Carcinoma Gall Bladder
Hyp	- Hypothyroidism
Cell	- Cellulitis
BCB	- Bladder calculi with Benign Prostatic Hyperplasia
VV	- Varicose Veins
Lip	- Lipoma
COC	- Colostomy closure
IOC	- Ileostomy closure
CCho	- Calculous Cholecystitis
MM	- Malignant Melanoma

SL NO.	NAME	AGE	SEX	IP NO.	Abs	Fis	Fit	Ple	Pnx	Hydro	Ly	AK	Hae	App	PH	Pan	HI	Urc	InH	DVT	Gas
1	GANAPATI	30	M	7245	Coa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	SIDDARAM	55	M	1734	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	SHOBHA	30	F	1942	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
4	SURESH	37	M	1142	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	JOGENDRA	40	M	1196	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	YAMUNAPPA	45	M	1093	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	RAJASHREE	38	F	6658	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	KANTAPPA	46	M	6811	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
9	SURESH	36	M	4486	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
10	SHRISHAIL	45	M	3141	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
11	SHANKAR	40	M	4186	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	GIRIJA	36	F	6177	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
13	PARASHURAM	43	M	6156	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
14	YALLAWWA	20	F	1540	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	SATTEWWA	45	F	1534	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	SHIVANAND	35	M	1622	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
17	MAHANANDA	34	F	486	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	SOMANING	27	M	450	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	LAXMIBAI	20	F	586	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
20	SHANTAMMA	30	F	630	Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	SUNANDA	16	F	672	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
22	MALAKAJI	30	M	613	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	SHRISHAIL	39	M	939	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
24	BASAVRAJ	40	M	3617	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
25	SHIVALAL	46	M	4853	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
26	MALLAMMA	40	F	3067	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-
27	MALLAYYA	40	M	3098	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	SHIVAPPA	39	M	2647	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
29	BISMILLA	24	M	7286	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
30	BHIMARAYYA	45	M	7307	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	MAHANTAPPA	43	M	2015	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
32	SHENAZ	38	F	532	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-

33	SOMANING	27	M	450	PU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34	KRISHNA	42	M	1597	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35	YALLAWWA	11	F	1540	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36	HANAMANTH	40	M	272	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	PADMASHRI	38	F	1049	Pa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	LAXMIBAI	60	F	16647	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39	MADUKAPPA	42	M	12317	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
40	RAMESH	50	M	12318	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	BHIMAPPA	65	M	10231	PW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42	AMBIKA	27	F	15406	Se	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43	GIRIMALLAPPA	70	M	10556	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
44	HANAMANTH	35	M	12964	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
45	MALLAPPA	36	M	12408	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46	RENUKA	30	F	11092	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-
47	SUBHAS	10	M	6242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48	DATTARAYYA	42	M	7589	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
49	SOMANING	27	M	459	PU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50	HANAMANTRAYYA	40	M	278	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	MADDURAO	39	M	17386	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	SANGEETA	25	F	15932	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53	IRAYYA	35	M	8486	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54	MADEVI	35	F	8425	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
55	RAJA	30	M	17698	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	TAMMANNA	75	M	15971	Gu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	SAVITRI	28	F	17745	Gu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58	GULAPPA	55	M	17483	Pa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59	APPASHI	22	M	17373	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60	AMRUT	55	M	186	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61	MALASIDDA	23	M	10705	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62	DUNDAPPA	39	M	416	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
63	SADASHIV	40	M	211	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	BASHETTAPPA	63	M	939	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65	MANOHAR	40	M	1018	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-

66	SHAKUNTALA	35	F	14462	Vl	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67	SIDDARAM	35	M	19628	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
68	MUDAKAPPA	32	M	655	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69	MARIYAPPA	45	M	364	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70	RAJU	40	M	398	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71	RAMESH	36	M	858	Bn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72	SHIVANAND	35	M	546	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
73	GUJAWWA	50	F	19447	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74	MALLANGOUDA	30	M	946	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
75	MALLU	23	M	10807	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76	AKHIL	35	M	15637	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
77	SABU	75	M	9801	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78	BHIMANNA	60	M	10321	PW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	CHINAWWA	40	F	8233	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	SUNANDA	30	F	19493	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
81	MUDAKAPPA	32	M	203	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	SUDHIR	40	M	246	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	GODAWWA	65	F	11783	Br	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	GODAMMA	35	F	264	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	CHANDAMMA	40	F	2439	PW	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
86	ANNAPURNA	45	F	16157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	MANGALA	34	F	16077	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
88	CHANDBAI	60	F	15891	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
89	NAGAMMA	26	F	15401	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90	PRAKASH	50	M	207	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
91	IRANNA	38	M	6870	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
92	BALKRISHNA	51	M	3020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	MALLAPPA	35	M	3827	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	SUBHASH	53	M	5183	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95	AYAPPA	65	M	6498	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96	GOUDAPPA	45	M	6623	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97	MALLIKARJUN	45	M	9672	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
98	SHREEDHAR	26	M	9622	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-

99	LAXMIBAI	40	F	9939	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-
100	SHARANAPPA	49	M	9823	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
101	SUBANNA	37	M	9716	Spc	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	MALATI	25	F	9801	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
103	SHRISHAIL	40	M	8003	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	BABU	30	M	10582	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105	GURUSHANT	32	M	11043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
106	DURGAWWA	38	F	21968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107	SHANKREPPA	35	M	21371	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	BASAVRAJ	28	M	20321	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
109	ULAVAPPA	40	M	13884	RilA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
110	SANJEYA	34	M	13889	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111	MAHABUB	45	M	13871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
112	BANEPPA	30	M	14904	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
113	SHASHIKALA	26	F	14839	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114	DROPATI	63	F	14742	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
115	MUTTU	46	M	11301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
116	MANOHAR	48	M	12492	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117	SUBHASH	40	M	11657	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
118	BHAGIRATHI	55	F	16908	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
119	GAJANAN	35	M	16208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
120	NINGAPPA	60	M	8737	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
121	TUKARAM	30	M	17829	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-
122	NURASI	43	M	17773	Paro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
123	PARAPPA	45	M	17076	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
124	YALAPPA	52	M	13043	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
125	PARAVATHI	36	F	1778	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
126	MUKTABAI	32	F	2114	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
127	GURULINGAYYA	48	M	2340	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
128	ASKOK	51	M	3017	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
129	HANAMANTH	30	M	8084	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
130	JAYASHREE	28	F	2255	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
131	JAMALU	42	M	4912	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

132	SHIVGOUDA	52	M	5244	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
133	ASKOK	50	M	7218	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
134	RAJASHREE	30	F	7124	PA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
135	RAJU	28	M	7359	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
136	BALAGOND	58	M	7463	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

ElAO	DiE	Mad	Spi	CR	CAG	Hyp	Cell	BCB	VV	Lip	COC	IOC	Ccho	MM
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	+	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	+	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
+	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	+	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	+	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	+	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	+	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	+
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-