International Journal Dental and Medical Sciences Research
Volume 3, Issue 5, Sep-Oct 2021 pp 404-409 www.ijdmsrjournal.com ISSN: 2582-6018

A Study Of 50 Cases Of Opportunistic Infections And It's Relation With Cd4 Count In Hiv Aids

Dr Abhishek Singh Rajput , Dr Manisha Panchal
Senior resident, Medicine department, PDU medical college
Associate professor, Medicine Department, PDU gov medical college

Submitted: 10-09-2021 Revised: 22-09-2021 Accepted: 25-09-2021

I. INTRODUCTION

In world(2019), prevalence of HIV is 0.8%, total 38 million people are living with HIV. In India (2019), prevalence of HIV is 0.26%. Total 2.1 million people are living with HIV, 80,000 new HIV Infection & 62,000 AIDS related death. 50% of adults are on Anti retroviral therapy.

The clinical profile of AIDS in India is seen to be different from what is seen in the developed world, since the HIV infected individual in India lives in an environment with high prevalence of infectious diseases [1]. The major causes of morbidity and mortality in HIV infected patients are the opportunistic infections (OIs).

HIV infection can be divided into the following stages:

1. Viral transmission
2. Acute HIV infection (also called primary HIV infection or acute seroconversion syndrome)
3. Chronic HIV infection, which can be further subdivided into the following stages:
4. Chronic infection, without AIDS

a) AIDS, characterized by a CD4 cell count <200 cells/µl or the presence of any

b) AIDS-defining condition.

5. Advanced HIV infection, characterized by a CD4 cell count <50 cells/µl

II. GOALS OF ANTIRETROVIRAL THERAPY(ART)

ART cannot cure HIV infection, as the currently available ARV drugs cannot eradicate the virus from the human body. This is because a pool of latently infected CD4 cells is established during the earliest stages of acute HIV infection.80 It persists within the organs/cells and fluids (e.g., brain, liver and lymphoid tissue) despite prolonged suppression of plasma viraemia by ART to<50 copies/ml.The primary goals of ART are maximal and sustained reduction of plasma viral levels and restoration of immunological functions. The reduction in the viral load also leads to reduced transmissibility and reduction in new infections.

Clinical goals	Increased survival and improvement in quality of life
Virological goals	Greatest possible sustained reduction in viral load
Immunological goals	Immune reconstitution, that is both quantitative and qualitative
Therapeutic goals	Rational sequencing of drugs in a manner that achieves clinical, virological and immunological goals while maintaining future treatment options, limiting drug toxicity and facilitating adherence
Preventive goals	Reduction of HIV transmission by suppression of viral load

International Journal Dental and Medical Sciences Research
Volume 3, Issue 5, Sep-Oct 2021 pp 404-409 www.ijdmsrjournal.com ISSN: 2582-6018

III. PRINCIPLES OF ANTIRETROVIRAL THERAPY

A continuous high level of replication of HIV takes place in the body right from the early stages of the infection. At least one billion viral particles are produced during the active stage of replication. The antiretroviral drugs act on various stages of the replication of the virus in the body and interrupt the process of viral replication.

Block binding of HIV to the target cell (Fusion Inhibitors and CCR 5 co-receptor blockers)

1. Block the viral RNA cleavage and one that inhibits reverse transcriptase (ReverseTranscriptase Inhibitors)
2. Block the enzyme integrase, which helps in the proviral DNA being incorporated into the host cell chromosome (Integrase Inhibitors)
3. Block the RNA to prevent viral protein production
4. Block enzyme protease (Protease Inhibitors)
5. Inhibit the budding of virus from host cells

IV. AIMS & OBJECTIVES

I. To study various parameters & pattern of clinical manifestations of Oppurtunistic infection in HIV/AIDS
II. To study the prevalence of Oppurtunistic Infection with respect to CD4 Count
III. To study the prevalence of Adherence to HAART & its relation to Ois
IV. To emphasize the importance of early institution of prophylactic therapy for OIs in HIV/AIDS group

V. MATERIALS & METHOD

A group of 50 number of cases who were HIV seropositive diagnosed with Oppurtunistic Infections registered in ART Centre Rajkot or admitted in P.D.U Medical College Rajkot & Hospital during the time period of September 2019 to august 2018 were included in the study.

A. Study Population & Design

Fifty patients(n=50) of both the sexes, of all the age groups, newly diagnosed or known cases of HIV seropositivity attending the outpatient department of general medicine, respiratory medicine, ART Centre & admitted in wards of PDU Medical College & Hospital, Rajkot who fulfilled the inclusion criteria & not having exclusion criteria were included in the study

B. Inclusion Criteria

All cases of Patient living with HIV/AIDS including newly diagnosed or known case registered in ART Centre Rajkot.

Patient living with HIV/AIDS admitted in P.D.U Medical College & Hospital.

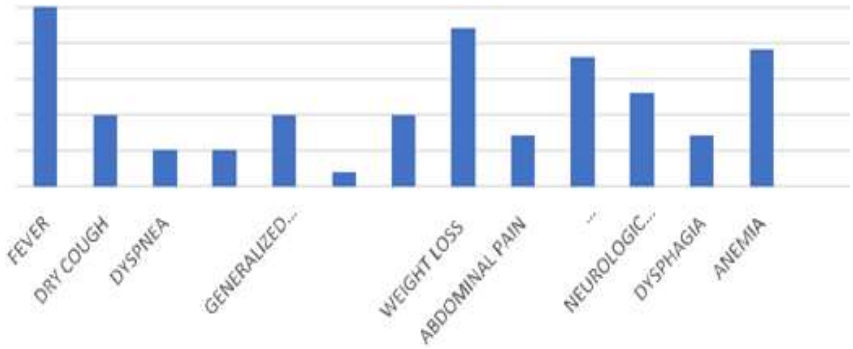
Patients must be having concomitant Oppurtunistic Infection.

C. Exclusion Criteria

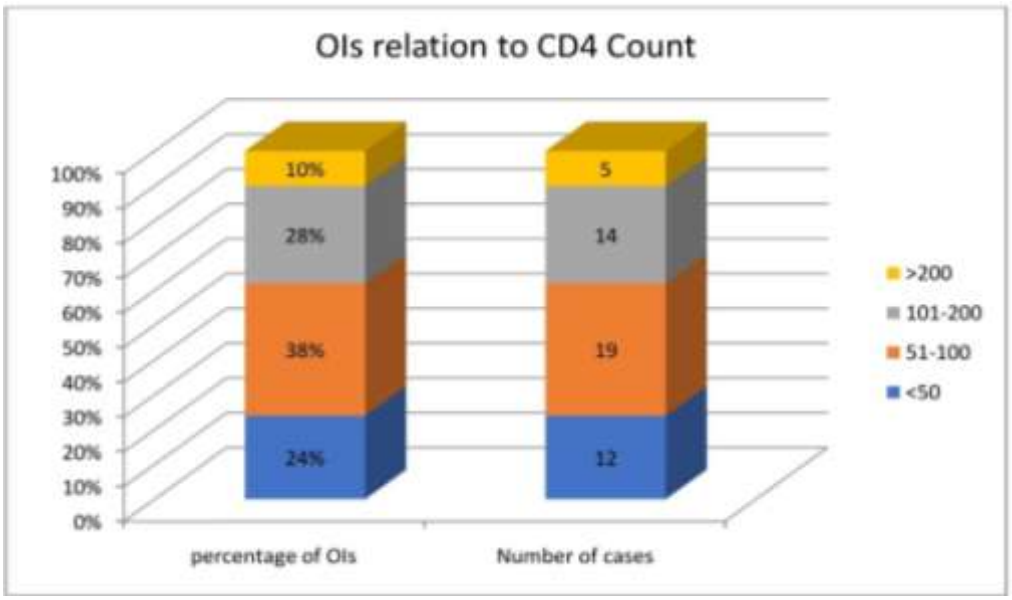
Patient having clinical manifestations attributed to cause other than Oppurtunistic Infection

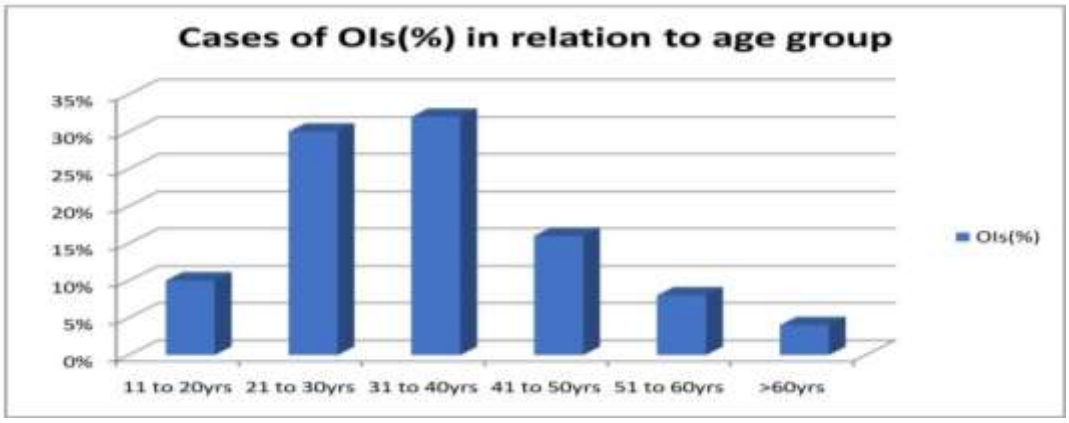
VI. OBSERVATIONS AND ANALYSIS

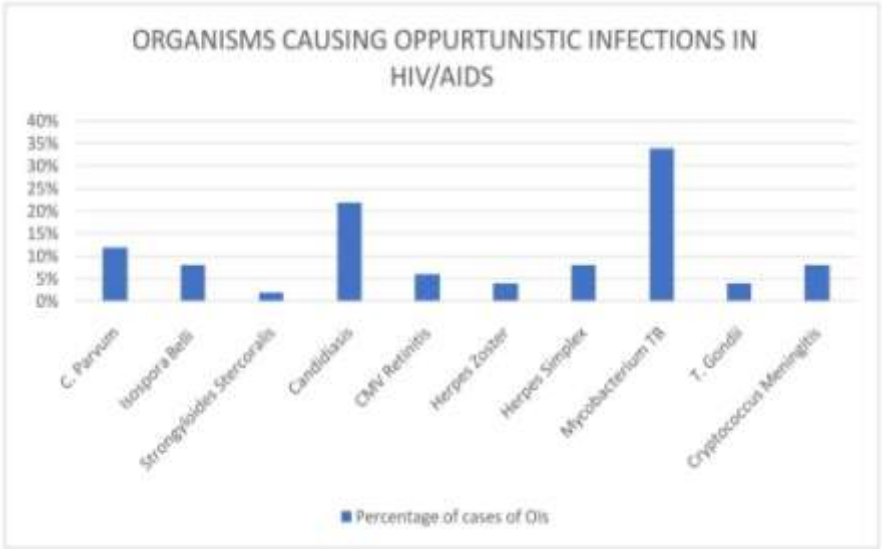
A. Clinical manifestations of OIs in HIV/AIDS



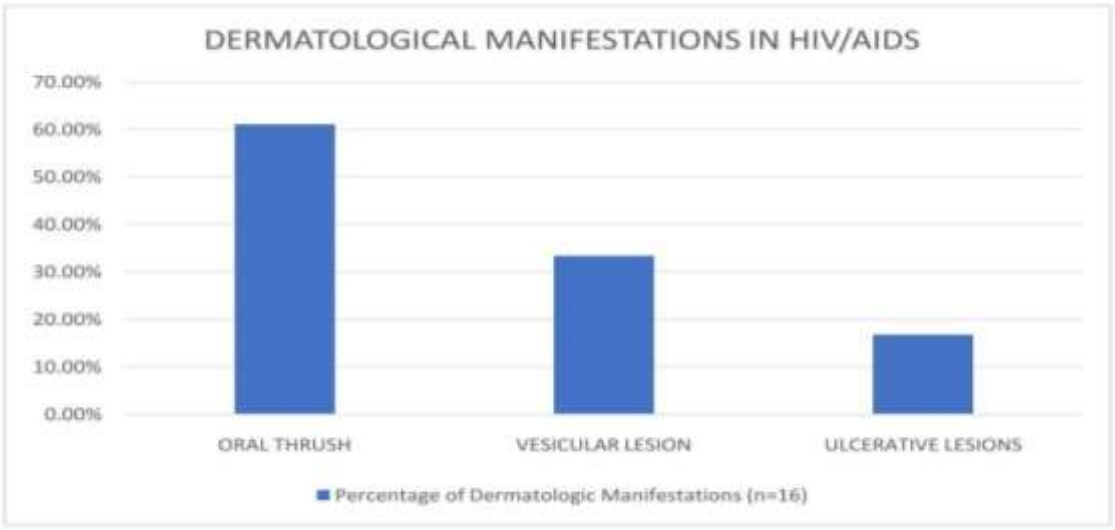
International Journal Dental and Medical Sciences Research
Volume 3, Issue 5, Sep-Oct 2021 pp 404-409 www.ijdmsrjournal.com ISSN: 2582-6018

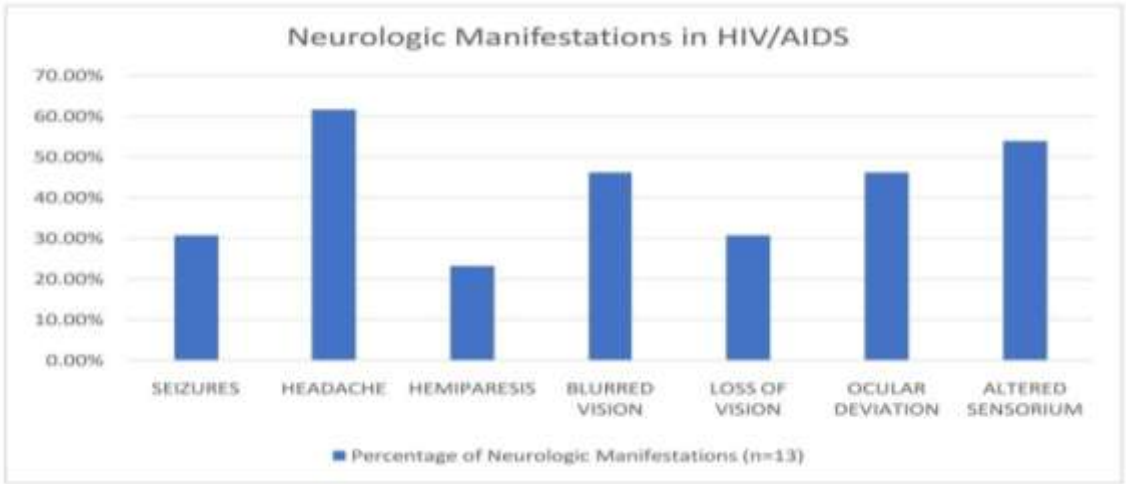


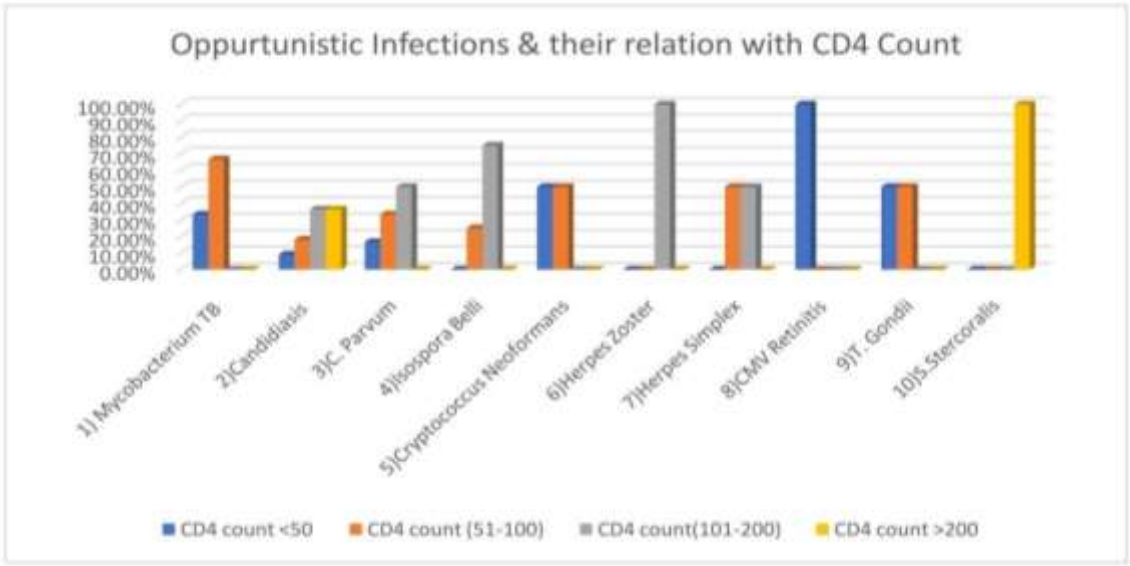




International Journal Dental and Medical Sciences Research
Volume 3, Issue 5, Sep-Oct 2021 pp 404-409 www.ijdmsrjournal.com ISSN: 2582-6018







International Journal Dental and Medical Sciences Research
Volume 3, Issue 5, Sep-Oct 2021 pp 404-409 www.ijdmsrjournal.com ISSN: 2582-6018

PERCENTAGE OF OPPURTUNISTIC INFECTIONS(OIs) IN HIV/AIDS

OIs	Percentage of cases (n=50)	OIs	Percentage of cases (n=50)
1)C. Parvum	12%(06)	6) Herpes Zoster (Shingles)	04%(02)
2)Isospora Belli	08%(04)	7)Herpes Simplex	08%(04)
3) Strongyloides Stercoralis	02%(01)	8) Mycobacterium T.B	34%(17)
4) Candidiasis	22%(11)	9)T. Gondii	04%(02)
5) CMV Retinitis	06%(03)	10) Cryptococcus Meningitis	08%(04)

VII. SUMMARY & CONCLUSION

- Important Highlights of the present study is as follow
- The most common opportunistic infection was Mycobacterium Tuberculosis followed by Candidiasis.
- The prevalence of Pulmonary TB & Extrapulmonary TB was equal .
- The mean CD4 Count was 114.88 cells/µl. Majority of OIs fall in the CD4 Count group (51 to 100)
- The age group with highest number of cases was 31-40 years followed by 21-30years with overall male preponderance.
- Adherence > 95% was present only in only 36% cases of OIs with only 5.5% In Mycobacterium Tuberculosis group.
- The study shows the importance of overall burden of OIs in HIV serpositive group as majority of such patients are in reproductive age group
- Study highlights the importance of understanding the type of OI prevalent in the region & CD 4 count associated with OIs. HIV seropositive patients once fit in the criteria to start HAART should be started as early as possible, as this will increase the CD 4 Count & thus decreases the risk of opportunistic infections
- Individuals who continue to have low CD4 count while on ART should be aggressively evaluated for OIs, & practical efforts to optimize the immunological recovery should be made. Prophylaxis for TB & Fungal infections, especially candidiasis, should be widely implanted in the routine management of PLHIV after exclusion of active disease irrespective of ART use.
- ART adherence counseling should be intensified in patient receiving ART. Better accessibility to ART centers is needed. Optimal doctor patient ratio is necessary to deliver a quality service. Effective counseling regarding the disease, OIs & its complications, treatment & its reactions & awareness regarding them, regular follow up & compliance to therapy are very essential.
- P.D.U Medical college, Rajkot is the tertiary health Centre in Saurasthra area of Gujarat where patients from different districts used to come particularly from rural areas . Hence Intervention programs & services especially to rural & remote ares rather than urban areas should be given. Special facilities to be given to needy people that would avoid late transfer of patient & late diagnosis.

REFERENCES

[1]. Fiebig EW, Wright DJ, Rawal BD, et al. Dynamics of HIV viremia and antibody seroconversion in plasma donors: implications for diagnosis and staging of primary HIV infection, AIDS, 2003, vol. 17 13(pg. 1871-1879)

[2]. World Health Organization. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. http://www.who.int/hiv/pub/arv/arv-2016/en/ (Accessed on June 22, 2016).

[3]. Daar ES, Pilcher CD, Hecht FM. Clinical presentation and diagnosis of primary HIV-1 infection. Current Opinion HIV AIDS 2008; 3:10.

[4]. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Services. Available at http://aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL. pdf (Accessed on August 05, 2019).

[5]. Pantaleo G, Demarest JF, Schacker T, et al. The qualitative nature of the primary immune response to HIV infection is a prognosticator of disease progression independent of the initial level of plasma viremia. Proc Natl AcadSci U S A 1997; 94:254.

[6]. Musey L, Hughes J, Schacker T, et al. Cytotoxic-T-cell responses, viral load, and disease progression in early human immunodeficiency virus type 1 infection. N Engl J Med 1997; 337:1267.

[7]. Mellors JW, Kingsley LA, Rinaldo CR Jr, et al. Quantitation of HIV-1 RNA in plasma predicts outcome after seroconversion. Ann Intern Med 1995; 122:573.

[8]. Lavreys L, Baeten JM, Chohan V, et al. Higher set point plasma viral load and more-severe acute HIV type 1 (HIV-1) illness predict mortality among high-risk HIV-1-infected African women. Clin Infect Dis 2006; 42:1333.

[9]. Madec Y, Boufassa F, Porter K, et al. Spontaneous control of viral load and CD4 cell count progression among HIV-1 seroconverters. AIDS 2005; 19:2001.

[10]. Osmond D, Chaisson R, Moss A, et al. Lymphadenopathy in asymptomatic patients seropositive for HIV. N Engl J Med 1987; 317:246.

[11]. Sterling T, Chaisson R. General clinical manifestations of Human Immunodeficiency Virus infection (including the acute antiretroviral syndrome and oral, cutaneous, renal, ocular, metabolic, and cardiac diseases). In: Principles and Practice of Infectious Diseases, 7, Mandell GL, Bennet JE, Dolin R (Eds), 2010. p.1705.

[12]. Wei X, Ghosh SK, Taylor ME, et al. Viral dynamics in human immunodeficiency virus type 1 infection. Nature 1995; 373:117.

[13]. Henrard DR, Phillips JF, Muenz LR, et al. Natural history of HIV-1 cell-free viremia. JAMA 1995; 274:554.

[14]. Ho DD, Neumann AU, Perelson AS, et al. Rapid turnover of plasma virions and CD4 lymphocytes in HIV-1 infection. Nature 1995; 373:123.