



Original Research Article

Ocular manifestation in human immunodeficiency virus patients presenting to tertiary eye care centre in rural area

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ABSTRACT

Background: The ocular manifestations of HIV/AIDS may lead to visual impairment or blindness. The need of hour is an understating of ocular sequelae of HIV infection leading to an early diagnosis of AIDS so that we can start early and effective treatment as per conditions.

Objectives: 1. To study the prevalence of ocular manifestations in HIV patients; 2. To study relation of CD4 T Cell count with ocular diseases.

Results: The study concluded that HIV/AIDS is a significant cause of ocular disease. Almost around 39% patients having HIV/AIDS have eye disease. HIV Retinopathy is most common in posterior segment and lens involvement is most common in anterior segment manifestations.

Conclusion: Usually, early presentation of ocular manifestations in HIV/AIDS patients is asymptomatic or with very less symptoms, which leads to delay in diagnosis and treatment.

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1. Introduction

Human immunodeficiency virus causes chronic, potentially life threatening condition. HIV interferes with immunity that is ability of body to fight with organism that causes disease by damaging immune system.

Since its discovery in 1981, human immunodeficiency virus/ acquired immunodeficiency syndrome has emerged as a global health problem. According to WHO latest data of 2017, globally, 36.9 million people living with HIV. Upto 50-75% of HIV/AIDS patients present with ocular manifestation in their life time. It can involve any part of eye from anterior segment, posterior segment, and even adnexa. CD4 count less than 500 cells/mm³ is seen with Kaposi sarcoma, lymphoma and tuberculosis and Counts less than 250 cells/mm³ are associated with Pneumocystis and Toxoplasma infections, and counts of less than 100 cells/mm³ with microvasculopathy, CMV retinitis, varicella zoster retinitis, cryptococcus and HIV

encephalopathy. Herpes zoster ophthalmicus is an important early clinical marker for AIDS especially in high risk younger patients.

Increasing use of ART is improving the survival of AIDS patients and changing the scenario of ocular manifestations. Since HIV/AIDS is disease of young individual who are economically and sexually active, early diagnosis and treatment of ocular lesion prevents permanent loss of vision, so that person earns his livelihood and independent life.

Keeping this in view, this study has been undertaken and present work aims at evaluating the ocular manifestation of HIV and relation with CD4 count.

2. Objectives

1. To study the prevalence of ocular manifestations in HIV/AIDS patients.
2. To study relation of CD4 T cell count with ocular diseases.

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3. Materials and Methods

This study was hospital based cross sectional study of HIV positive patient presenting to out patient department of tertiary eye care hospital in rural area. DESIGN: Cross sectional study.

3.1. Sample size

400.

3.2. Study period

Present study was conducted during 2019-2020. Sampling Technique: Systematic random sampling.

3.3. Inclusion criteria

1. All age group.
2. Patient diagnosed with HIV on blood investigation.
3. Both gender (male/female).
4. Any patient irrespective of treatment status.

3.4. Exclusion criteria

1. HIV/AIDS patients who are terminally ill/comatose and cannot be examined completely.

3.5. Study statistics

Data was entered in excel sheet and tabulated and examine in open epi version 2.3, value considered as significant, if it is < 0.5.

4. Observation and Results

The present study was conducted on 400 HIV positive patients with HIV positive reports. The data was tabulated as follows:

Table 1: Routes of exposure to HIV infection (n = 400)

Route of transmission	Frequency	Percentage
Blood transfusion	1	0.25
Heterosexual	240	60
Homosexual	26	6.5
Not specified	129	32.25
Perinatal	4	1
Total	400	100

Our study found sexual route as the most common mode of transmission of HIV seen in 66.5% of patients, of which heterosexual was the most common mode seen in 240 patients (60%).

Our study showed the prevalence of ocular manifestations among HIV positive patients as 39%.

In our study, the majority of HIV infected patients with CD4 count less than 100 has ocular manifestations i.e., 14 patients (87.5%) out of 16 with CD4+ T cell counts < 50

Table 2: Ocular manifestations in HIV/AIDS (n = 400)

Condition	Frequency	Percentage
withocular manifestation	156	39
withoutocular manifestations	244	61

Table 3: Correlation of ocular manifestations of AIDS with CD4+ T cell count in HIV infected patients (n=400)

S.No	CD 4 T cell count	Total no of patients	Patients with ocular manifestations	Percentage
1	0-50	16	14	87.5
2	51-100	40	32	80
3	101-500	288	105	36.45
4	>500	56	5	8.92
5	Total	400	156	39

cells /ml and 32 patients (80%) out of 40 with CD4 count between 51- 100.

Chisquare analysis was done which showed significant correlation (p = 0.001) between ocular manifestations in HIV and lower CD4+ T cell counts.

Table 4: Ophthalmic manifestations involving adnexa of eye of HIV/AIDS patients (n=400)

Part of eye involved	Diseases	No. of patients
Adnexa	Herpes zoster ophthalmicus	4
	Molluscum contagiosum	5
	Eyelid infections	10
	Conjunctivitis	10
	Squamous cell carcinoma	2

Table 5: Ophthalmic manifestations in anterior segment of HIV / AIDS patients (n=400)

Part of eye involved	Disease	No. of patients
Anterior segment	Dry eye	13
	Bacterial keratitis	5
	HSV keratitis	5
	Fungal keratitis	3
	Anterior Uveitis	3
	Panuveitis	2
	Microvasculopathy	3
	Glaucoma	1
	Cataract	19
	Pterygium	7
	Limbal stem cell deficiency	5
	Episcleritis	2
	Scleritis	3

In the present study, adnexa of eyes involved in total 31 patients of HIV/ AIDS (7.75%). In the present study, anterior segment manifestations were more common

Table 6: Ophthalmic manifestations in posterior segment of HIV/AIDS patients (n = 400)

Part of eye involved	Disease	No. of patients
Posterior segment	HIV retinopathy	18
	CMV retinitis	06
	Viral retinitis	05
	Progressive outer retinal necrosis	01
	Acute retinal necrosis	02
	Toxoplasma retinochoroiditis	02
	Ocular syphilis	02
	Mycobacterium infection	04
	Cryptococcus infection	02
	CRVO	01

Table 7: Ophthalmic manifestations involving orbit and neuro-ophthalmic involvement of HIV/AIDS patients (n = 400)

Segment involved	Disease	No. of patients
Orbit	Orbital cellulitis	3
	Preseptal cellulitis	2
Neuro-ophthalmology	Cranial nerve palsies	1
	Papilledema	2
	Optic neuropathy	3

compared to posterior segment manifestations in HIV / AIDS patients. Posterior segment manifestations of HIV/AIDS were seen in 43 patients out of 156 patients with ocular involvement (27.56%). The most common ocular manifestation of posterior segment in HIV patients in our series was HIV retinopathy (18 patients) followed by CMV retinitis (6 patients).

5. Discussion

Our study found sexual route as the most common mode of transmission of HIV seen in 66.5% of patients. Study by Mukta S et al. showed that heterosexual transmission was most common mode of transmission in 84%. Our study showed the prevalence of ocular manifestations among HIV positive patients as 39%. Sujani Bairy showed that 56.8% had ocular manifestations. Shivayogi K et al. conducted showed that 46%. In our study, the majority of HIV infected patients with CD4 count less than 100 has ocular manifestations i.e., 14 patients (87.5%) out of 16 with CD4+ T cell counts < 50 cells /ml and 32 patients (80%) out of 40 with CD4 count between 51-100.

In the present study, adnexa of eyes involved in total 31 patients of HIV/ AIDS (7.75%). Anterior segment

manifestations were more common compared to posterior segment manifestations in HIV / AIDS patients. The most common ocular manifestation of posterior segment in HIV patients in our series was HIV retinopathy (18 patients) followed by CMV retinitis (6 patients). Orbital and neuro-ophthalmologic complications of HIV/AIDS were seen in 11 patients out of 156 patients with ocular involvement (7.05%).

6. Conclusion

The study concluded that HIV/Aids is a significant cause of ocular disease. Almost around 39% patients having HIV/AIDS have eye disease. Usually, early presentation of ocular manifestations in HIV/AIDS patients is asymptomatic or with very less and unnoticed symptoms, which further leads to delay in diagnosis and treatment leading to major disease occurrence.

Thus, regular screening of positive patients and comprehensive ophthalmic examination will help in identifying ocular morbidity earlier.

7. Ethical Consideration

Complete confidentiality of data was maintained throughout the research. It was the sole responsibility of principal investigator. We started the research only after written permission from the IEC.

8. Source of Funding

No funding and expenses.

9. Conflict of Interest

No conflict of interest.

Author biography

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