Ophthalmic Manifestations In HIV Patients- A Case Series Study From North India

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Abstract: Background: The ophthalmological problems occur in approximately half of the patients with advanced HIV infection when the CD4 T cell count is usually well below 50/ul and the increasing number and prolonged survival of AIDS patients means that the ocular lesions associated with this syndrome will become more frequent problem. Material And Methods: This was a case series study with no controls. All HIV positive patients were included in this study with or without ocular involvement. 50 known HIV positive cases attending OPD and/or admitted in GM and Associated Hospitals, KGMC, and who were willing to take part in study were enrolled after proper counselling. Detail history of the cases is taken including personal data, occupation, history of any risk factor, detail history of systemic disease and ocular symptom with their duration and course. Results: In our study 33 patients did not have ocular symptoms and signs and the remaining 17 patients were found to have ocular involvement. Among them 6 patients were asymptomatic, but they had ocular signs. Amongst various symptoms 7 patients presented with diminution of vision, one had headache, other visual symptoms including watering itching and foreign body sensation were found in 5 patients. Conclusion: More than half of the cases in this study were either illiterate or had attended primary schooling and mostly from rural area. In view of this there is a need to intensify primary health education programme and awareness about AIDS through mass media and education regarding adaptation of safe sexual practices. The role of Govt. program and various NGOs has become more important in this respect to restrict this 21st century epidemic. [Singh P Natl J Integr Res Med, 2021; 12(1):57-61]

Key Words: AIDS, CSW, HIV, Ocular lesions.

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Introduction Acquired immunodeficiency syndrome, a fatal illness was first recognized in the United States in 198[1]. It is believed to be a few infections in human beings that started from Central Africa which breaks down the body's immune system leaving the victim vulnerable to a host of life threatening opportunistic infections, neurological and ocular disorders or unusual malignancies. The current estimate of the number of cases of HIV infection among adults worldwide is approximately 33 million. More than 95% of new cases remain in developing countries.

In India AIDS epidemic started in late 80's. First case was reported in 1986[2]. At present in India 3.7 million persons have been infected with this virus and most common mode of transmission is heterosexual contact. AIDS is a multi-system infectious progressive immunological deficiency disease caused by HIV virus from retrovirus family. The ophthalmological lesion most commonly associated with HIV-1. In India the first two cases of ocular lesions in AIDS was reported in 1995.

The ophthalmological problems occur in approximately half of the patients with advanced HIV infection when the CD4 T cell count is usually well below 50/ul and the increasing number and prolonged survival of AIDS patients means that the ocular lesions associated with this syndrome will become more frequent problem. Most common ocular lesion is retinal micro vasculopathy caused by cytomegalo virus and this is leading cause of blindness in AIDS patients. CMV retinitis affects about 25-30% of adult AIDS patients[3].

Ocular lesions may precede systemic manifestation and in many patients full blown AIDS is not developed, in this case the role of ophthalmologists becomes important. Therefore the general ophthalmologist should become familiar with this disease and its ocular manifestation so that they can help in early diagnosis and appropriate referral of patients to avoid unnecessary delay in starting the treatment. Early therapy may significantly improve the quality of life of a AIDS patients.

This study has been done in Department of Ophthalmology, King George's Medical College, Lucknow, to find out ocular lesions in AIDS patients.

Material and Methods: This study protocol has received the ethical clearance from the ethical committee of the King Goerge's Medical University, Lucknow, Uttar Pradesh, India. The informed consent was signed by the participants who fulfil the inclusion criteria. Study Design: This is a case series study with no controls. All HIV positive patients were included in this study with or without ocular involvement. Study Subjects:50 known HIV positive cases attending OPD and/or admitted in GM and Associated Hospitals, KGMC, and who were willing to take part in study were enrolled after proper counselling.

Confirmation Of HIV Positivity: HIV seropositivity of each patient was confirmed by testing at HIV surveillance and blood testing centre, Virology Section, Department of Microbiology, King George's Medical College, Lucknow.

Data Collection: Detail history of the cases is taken including personal data, occupation, history of any risk factor, detail history of systemic disease and ocular symptom with their duration and course.

Ocular Examination Of Cases: The Ophthalmo-logical checkup of each patient was done at Department Ophthalmology, KGMC, Lucknow.

Detailed ocular examination including eye and adenexa. Assessment of visual status, near as well as distance. Position of head, symmetry of face, ocular movements are noted. Detailed anterior segment examination using slit lamp, amsler grid. Detailed posterior segment examination with special reference to fundus and fundus fluorescent angiography was done where indicated. Visual field assessment done by Humphrey visual field. Biopsy and microbiological investigation done when indicated. B-scan of eyes done.

Data Analysis: A descriptive data analysis was done to elucidate the various aspects of the outcome. Microsoft office excel 2000 was used to analyze the data.

Result & Discussion: Fifty known HIV positive cases were examined for ocular manifestation between 1st September 2000 and 31st August 2001. Most of the cases (72%) were in the age group of 21-40 years. Mean age was 38.74 ± 10.16 year for male and 32.4 ± 8.41 years for female cases. This is slightly higher than other studies from india[4-6]. In these studies, mean age for male ranges from 30-35 years and in female cases it ranges from 25-30 years and also in studies from abroad mean age of AIDS patients was 33.6 years[7,8].

Male to female ratio in our study was 2.33.1. Other Indian studies[7-9] had similar predominance of males in HIV infected population. The Possible reason for this was probably due to the difference in choice of sex partners and also due to the conservatism of Indian society.

A Large Proportion of men in this study had commercial sex workers as their sex partners. Most of these men were married and many of them are visited metropolitan cities of India in search of livelihood. The wives of these men are monogamous. About 86% of males and females in this study were married and living with the marital partners.

The predominance of married males and females being involved is probably due to unsettled family life caused by financial pressure. There is evidence that the institution of marriage is no longer a barrier to preventing extra-marital physical relations and that instability of the family has crucial role in spread of HIV similar to other sexually transmitted disease (STDs). Previous studies[10] have shown higher prevalence of HIV infection and other STDs among people who live singly in comparison to married people.

Wives of 12 of 31 married male cases were also tested for HIV infection. 9 out of 12 wives (75%) were found to be HIV seropositive. The rest of the wives could not be tested because of refusal or non-accompaniment.

In our study 33 patients did not have ocular symptoms and signs and the remaining 17 patients were found to have ocular involvement. Among them 6 patients were asymptomatic, but they had ocular signs.

Amongst various symptoms 7 patients presented with diminution of vision, one had headache, other visual symptoms including watering itching and foreign body sensation were found in 5

patients. Best visual acuity (with pinhole 1mm) of both eyes of HIV positive cases was recorded. Vision of worse eye was taken for presentation of data.

On recording the visual acuity 40 (80%) HIV positive cases had visual acquity 6/9 or better in worse eye. Only 1 patient had deterioration in vision upto PLPR because of chronic iridocyclitis bilaterally. This reflects that although most of the HIV positive patients have near normal visual acuity even in advance AIDS disease, the severe visual deterioration is usually associated with terminal stage of disease. Seventeen (34%) cases had ocular involvement 7 of AIDS cases and 4 of symptomatic had ocular involvement, of our asymptomatic carrier-6 patients had ocular findings.

Eye is one of the most commonly affected organ in HIV positive state Incidence of ocular changes due to HIV infection ranges between 50-70%[11-13]. According to our study 17 (34%) of HIV positive cases had ocular involvement.

Thirty five percent of our AIDS cases had ocular changes. Freeman WR28 reports a similar incidence while other studies differ. Twenty three percent symptomatic cases but not fitting in criteria of AIDS had ocular changes. This figure is lower than study of Nagata y et al.[13] but 46% of our asymptomatic carrier cases had ocular involvement as against the 1.3% cases mentioned by Jabs DA et al.[14] Jabs DA et al. mentioned in their study that only 1.3% of asymptomatic carrier patients had ocular signs while Nagata mentioned 37% asymptomatic cases has ocular involvement.

Out of 17 patients with ocular involvement most common ocular structure involved was anterior segment (64%) followed by eyelids and adnexa (29%) and then posterior segment (17%).

According to various studies viruses are found in almost all body fluids. The virus has also been isolated from ocular structures like iris, retina, vitreous11, cornea12, and conjunctival epithelium13. It seems from these studies that almost all structures of the eye are affected in HIV disease due to either direct virus invasion or opportunistic infections. Our study also shows that almost all structures of eye were involved in HIV positive patients. Virus and organism analysis could not be carried out due to inadequate facilities available in our hospital.

Eyelid And Adenexal Manifestations: Blepheritis was identified in 5 patients, 2 of whom had associated madarosis. Inflammatory lesions in the eyelids of AIDS patients are rare but subclinical and mild lid infections are quite common. In countries with warm climate like India, the prevalence of Staphylococcus aureus is as high as 95% in lid cultures. Staphylococcus aureas has been found to cause increased mucocutaneous infections as well as deep soft tissue infections and sepsis in patients with AIDS[15].

Due to immunodeficiency the infection was more severe and led to extensive blepharitis with multiple pus points. Few patients had mild blepharitis which may be a response to HIV itself. Biswas J et al[16] and Iordanesus C et al[17] have also reported blepharitis in AIDS patients. Madarosis is a late complication of blephiritis. In our study one patient had severe scarring of both eyelids with loss of eye lashes.

Anterior Segment Lesions: Thirty-five percent patients with ocular manifestation had cataract. However, all these patients were of age >50 years and any evidence of infectious disease were not seen in them. Thus the cataract in these patients was probably age related. There were few published accounts of lenticular opacities in AIDS patients. Schnandigel DE77 in their study found that lens opacities in cortex were presents in 52% patients. Other findings in anterior segment were conjunctivitis, pinguecula, corneal opacity and iritis.

In 4 of our patient corneal opacities were found. In 2 of them there was a past history of corneal ulcer. In literature also bacterial and fungal corneal ulcers have been documented in patients with AIDS but they are uncommon. In rest of two patients there was trichiasis as a result of blephritis which led to constant corneal rubbing resulting in corneal opacity. Conjunctival Kaposi sarcoma was not found in our study though it is reported that it occurs in 30% of all patients with AIDS105. One of our patients had conjuctivities which was allergic in origin and was unrelated to HIV infection. Iritis in AIDS patients necessitates a though ocular examination to rule out anterior and posterior segment involvement. 2 of our patient had iritis.

On further examination one patient had bilateral iritis with oculusio papillae in one eye and posterior synechias in both eyes. The Posterior segment could not be examined due to occlusion pupillae. B-scan of this patient did not reveal any retinal detachment. Chorioretinits was present in the other eye with evidence of vitreous regeneration.

This patient had systemic disseminated tuberculosis. Posterior Segment Lesions: HIV retinopathy is characterized by the presence of cotton wool spots and less frequently by intra retinal hemorrhages. Microaneurysms and telangiectatic vessels3. Cotton wool spots have been reported to occur in 28% to 92% of patients with AIDS, with most of the series studies reporting a frequency of greater than 40%18,19. In our study cotton wool spots were found only in 2 out cases. Cotton wool spots were seen clinically as white fluffy lesions with feathery borders. In most of the cases found along the vessels and around optic disc. Intra retinal haemorrhages occur less commonly with most studies reporting a frequency of less than 20%. Low incidence of CWS in our study as compared to other might be due to lack of long term following up in our study. Most of the patients examined only once. It might be possible that they developed such lesions in later course of disease.

The low incidence of other HIV related post segment lesion in our study is due to small number of patients and lack of long term follow up. In our study no patient was found with neurophthalmic manifestations. All 50 patients had full ocular movements and straight ocular position. On cover test one patient was found with alternate concomitant convergent squint unrelated to this disease.

Table 1: Marital Status Of Study Group

Marital Status	Male (35)	Female (15)	Total
Married	31	12	43(86%)
Unmarried	4	3	7(14%)

Table 2: Best corrected visual acuity of worse eye of HIV positive cases

Visual acuity	Stage of Disease			Total
	AIDS	Symptomatic	Asymptomatic	
>6/9	15	13	12	40(89%)
6/12-6/18	-	4	1	5(10%)
6/24-6/60	4	-	-	4(8%)
<6/60	1	-	-	1(2%)

Conclusion: More than half of the cases in this study were either illiterate or had attended primary schooling and mostly from rural area. In view of this there is a need to intensify primary health education programme and awareness about AIDS through mass media and education regarding adaptation of safe sexual practices. The role of Govt. programme and various NGOs has become more important in this respect to restrict this 21st century epidemic.

It is likely that the ocular disorders associated with this syndrome will become more frequent problems for the ophthalmic community, therefore, the need for a higher index of suspicion among patients at grass root level.

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