

AGE AND OCULAR MANIFESTATIONS IN HIV PATIENTS AT VCT POLYCLINIC, PROF. DR. IGNG NGOERAH HOSPITAL, DENPASAR PERIOD JUNE 2020 TO APRIL 2023: A HOSPITAL BASED ANALYTIC RETROSPECTIVE STUDY

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ABSTRACT

Ocular manifestation in HIV refers to a wide range of eye problems. The likelihood of experiencing at least one visual symptom increases with age in HIV patients. The possible explanation is that older people may be more susceptible to other health problems that can exacerbate ocular manifestations. People who have had HIV for a longer period also may experience decline in the immune function, and accumulation of chronic inflammation and damage over time therefore increasing their risk of complications. Examining the possible clinical correlation between age and ocular manifestation in HIV patients was the primary objective of the research. 159 HIV-positive Patients at Prof. IGNG. Ngoerah Central General Hospital Voluntary Counseling and Testing (VCT) Clinic in Denpasar, Bali were examined for ocular-related complaints between June 2020 and April 2023 as part of this hospital-based analytic retrospective study. The research found no statistically significant correlation between age and the occurrence of ocular symptoms ($p = 0.276$). However, the percentage of HIV patients that have ocular manifestations increase along with older age group. Age and ocular manifestation did not correlate significantly in the HIV patient population. To further understand the relationship between age, length of HIV infection, and the onset of ocular symptoms, further research is required.

Keywords: Age, HIV, Ocular Manifestations

ABSTRAK

Manifestasi okular pada HIV merujuk pada berbagai masalah mata yang timbul pada pasien dengan HIV. Kemungkinan mengalami setidaknya satu gejala pada mata meningkat seiring bertambahnya usia pada pasien HIV. Penjelasan yang mungkin adalah bahwa orang yang lebih tua mungkin lebih rentan terhadap masalah kesehatan lain yang dapat memperburuk manifestasi okular. Selain itu, orang yang telah hidup dengan HIV untuk jangka waktu yang lebih lama mungkin mengalami penurunan fungsi kekebalan tubuh serta akumulasi peradangan kronis dan kerusakan seiring waktu, sehingga meningkatkan risiko komplikasi. Mengetahui adanya korelasi klinis antara usia dan manifestasi okular pada pasien HIV adalah tujuan utama dari penelitian ini. 159 pasien positif HIV di Klinik Konseling dan Tes Sukarela (VCT) Rumah Sakit Umum Pusat Prof. IGNG. Ngoerah di Denpasar, Bali diperiksa untuk keluhan terkait kesehatan mata antara Juni 2020 dan April 2023 sebagai bagian dari studi retrospektif analitik berbasis rumah sakit ini. Penelitian ini tidak menemukan korelasi yang signifikan secara statistik antara usia dan kejadian gejala okular ($p = 0.276$). Namun, persentase pasien HIV yang memiliki manifestasi okular meningkat seiring dengan kelompok usia yang lebih tua. Usia dan manifestasi okular tidak berkorelasi signifikan pada populasi pasien HIV. Untuk lebih memahami hubungan antara usia, lama infeksi HIV, dan munculnya gejala okular, diperlukan penelitian lebih lanjut.

Kata Kunci: HIV, Manifestasi Okular, Usia

INTRODUCTION

The retrovirus known as the Human Immunodeficiency Virus (HIV) infects and multiplies inside certain types of immune cells, namely CD4 T cells. HIV may be passed from one person to another by many body fluids, including blood, sperm, vaginal secretions, and breast milk.

The virus targets the immune system, causing it to gradually weaken and ultimately expose the body to cancer and opportunistic diseases.

Joint United Nations Program on HIV/AIDS (UNAIDS) estimates put the global HIV population at 38.4 million in 2021, with a range of 33.9 to 43.8 million. It is projected that there were 49,000 to 50,000 new cases of HIV infection in Indonesia in 2019, with an additional 640,443 people living with the virus. There was a 24% rise in the number of new HIV infections in Indonesia from 2010 to 2020, with an expected 36,000 new infections in 2020 alone. Reports of this pandemic have come in from 34 provinces and 308 out of 504 districts/cities, or 61% of the total. It has spread throughout Indonesia.

Ocular manifestation in HIV refers to a wide range of eye problems that can occur as a result of HIV infection. Seventy to eighty percent of individuals will have ocular signs at some point in their lives⁴. Both direct and indirect effects of the HIV virus on the eye may be seen via a variety of opportunistic diseases. The conjunctiva, cornea, iris, optic nerve, and retina are all susceptible to infection by this virus. The most common ocular manifestations in HIV including conjunctivitis, dry eye disease, keratitis, CMV retinitis, HIV retinopathy, herpes zoster ophthalmicus, ocular toxoplasmosis, retinal necrosis, and kaposi sarcoma.

Having an HIV comorbidity was four times more likely in older persons (OR = 4.7 (3.1-7.0)) than in younger adults. Living in an urban environment (OR = 2.6; 1.8-3.7) and being female (OR = 1.6; 1.1-2.4) both enhanced the likelihood of HIV comorbidity.

Several studies have shown that HIV-associated ocular manifestations tend to increase with age particularly in individuals with long-standing HIV infection. There are a number of possible explanations for why older adults are more likely to have HIV-related eye symptoms. One possibility is that people who have had HIV for a longer period may experience decline in the immune function, and accumulation of chronic inflammation and damage over time therefore increasing their risk of complications. Additionally older people may be more susceptible to other health problems that can exacerbate ocular manifestations.

One study by Jabs *et al*, 2007 that included 1632 HIV positive participants with ocular manifestations found that the ocular manifestation mostly found in the 35-44 and > 45 years old group of participants, and a number of participants is higher in the >45 years old group compared to 35-44 years old group. This outcome was also reported in a 2021 research in the Journal of International Medical Research. The research indicated that the incidence of ocular symptoms rose with age, and it comprised 441 HIV-positive subjects. Participants older than 40 years old had a higher prevalence of ocular symptoms in the research. This research aims to examine the relationship between age and ocular symptoms in HIV patients seen at the VCT Polyclinic at Denpasar's I.G.N.G. Ngoerah Central General Hospital.

METHODS

Over the course of 35 months, from June 2020 to April 2023, researchers in the ophthalmology department of a tertiary care teaching hospital in Denpasar, Bali, Indonesia, analyzed data from patients seen in the institution's own records. Participants comprised all HIV-positive individuals who visited the Voluntary Counseling and Testing Clinic and were evaluated for eye-related issues by an ophthalmology resident. The research did not include patients who did not have a final diagnosis from the ophthalmology department or who refused to comply with the examination. Although 160 HIV individuals were initially screened, only 159 met the inclusion and exclusion criteria and were subsequently enrolled in the research.

Age, gender, profession, ocular symptoms, length of ART, and duration of illness were among the socio-demographic variables captured in a predesigned and pretested semi-structured interview schedule. Each patient has received a thorough ophthalmological examination in the following order, after a history gathering process according to the proforma.

Statistical evaluations and analyses of the data were conducted using SPSS. While percentages were used to describe qualitative data, standard deviation and mean were used to express quantitative data. The Bivariate Chi-Square test was used to examine the connection between the age group variable and the ocular manifestation variable. Statistical significance was defined as a p-value lower than 0.05.

RESULT

The study was conducted with 159 subjects. During the study, there are a total of 104 men (65,4%) and 55 women (34,6%) with average age of 39.30 ± 10.62 years of age. There were 1 (0,6%) of the patients in the < 20 years old group, 32 (20,1%) patients in the 20 – 29 years old group, 50 (31,4%) patients in the 30 – 39 years old group, and 76 (47,8%) patients in the ≥ 40 years old group of age. Table 1 below displays the study's demographic data.

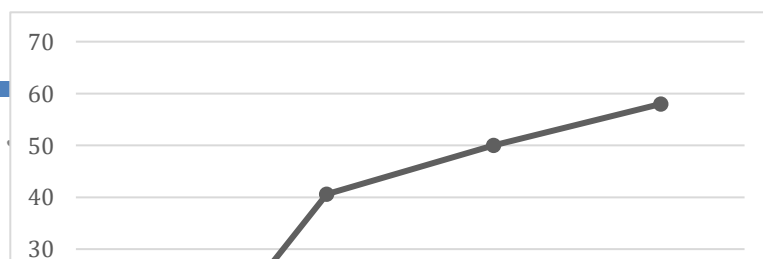
Table 1. Demographic Data of Subject

Subject Characteristic	n	%
Gender		
Male	104	65,4
Female	55	34,6
Age (years old)		
< 20	1	0,6
20 – 29	32	20,1
30 – 39	50	31,4
≥ 40	76	47,8
Ocular Manifestation		
Yes	82	51,6
No	77	48,4

One subject were excluded from this study because there was no definitive assessment from ophthalmology department related to ocular manifestation. From the data, we found the mean of age was 39.30 ± 10.62 . From 159 subjects. A total of 82 (51,6%) of subjects have ocular manifestations from all age groups (table 2). The Bivariate Chi-Square Correlation test was used to examine the relationship between age and ocular manifestation. The results were not statistically significant, as shown by the p-value of 0.276. Results were shown in table 2.

Table 2. Correlation between age and ocular manifestations

Variable		Ocular Manifestations		p-value
		Yes n (%)	No n (%)	
Age (years old)	< 20	0 (0)	1 (100)	0,276
	20 – 29	13 (40,6)	19 (59,4)	
	30 – 39	25 (50)	25 (50)	
	> 40	44 (57,9)	32 (42,1)	
Total	All Age Group	82 of 159 (51,6%)	77 of 159 (48,4%)	



Age

Figure 1. Number of patients with ocular manifestation

DISCUSSION

From total of 159 patients included in this study, At age group < 20 years old, there was 1 patient. This patient didn't have ocular manifestations. At age group 20-29 years old, from total of 32 patients there were 13 patients (40,8%) that have ocular manifestation. At age group 30-39 years old, from total of 50 patients there were 25 patients (50%) that have ocular manifestations. Finally at age group \geq 40 years old, from total of 76 patients there were 44 patients (57,9%) that have ocular manifestation. The most common ocular manifestation that can be found from this study were dry eye disease (52,5%); cataract (13,9%); pterygium (7,9%); HIV retinitis (5%); uveitis, vitreous opacity, and retinal detachment (4% for each of ocular manifestation); conjunctivitis (1,9%); vitritis, blepharitis, keratitis, corneal cicatrix, CSME, color blindness, and optic neuritis (0,9% for each of ocular manifestation).

Statistical analysis test employed in this study is bivariate Chi Square test to determine whether there is correlation between age and ocular manifestation. There was no statistically significant correlation (*p value*: 0,276). between age of patients with HIV and ocular manifestation. However, the percentage of HIV patients that have ocular manifestations increase along with older age group (table 2, figure 1).

Patients with HIV are more likely to get ocular manifestations if they are older. Participants in this trial are receiving antiretroviral medication. There are scant evidences supporting the link between HIV patient age and ocular manifestations. However, there are increased percentage of patients who develop ocular manifestations as they get older (Figure-1). According to one study from. Ghate M *et al*, 2021, the percentage of ocular manifestation within \leq 40 years old group was 7,2% and in $>$ 40 years old group of age was 29,5%, with total patients 441. That fact is comparable to result from this study in which, the occurrence of ocular manifestations increased with older age.

This study still has some limitations. The length of time someone has been HIV positive and how it relates to the frequency of eye symptoms is not taken into account in this research.

CONCLUSION

There was no statistically significant correlation between age and ocular manifestations among HIV patients at the VCT Polyclinic at I.G.N.G. Ngoerah Central General Hospital, Denpasar.

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