

PREVALENCE OF HUMAN IMMUNODEFICIENCY VIRUS IN OPHTHALMIC SURGICAL PATIENTS.

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ABSTRACT

Aim: The aim of this study was to determine the incidence of human immunodeficiency virus in one hundred and sixteen (116) ophthalmic patients who had surgery over a two year period (July 2003 to June 2005) in the Department of Ophthalmology of the University of Benin Teaching Hospital, Benin City.

Materials and Methods: A two year prospective study was carried out on 116 ophthalmic patients who had surgery between July 2003 and June 2005, A total of 116 patients were screened for HIV 1 & 2. An informed consent was obtained from all the patients. Patients who did not give their consent were excluded from the study.

Results: The total number of patients screened was one hundred and sixteen (116). There were 61 males and 55 females. The age range was 1 year to 78 years with a mean age of 46 ± 22.2 years (SD). The highest number of patients, 25 was found in the age group 61-70 years, comprising 21.6% of the total number of patients, followed by 24 patients in the 51-60 years age group. Three (3) patients comprising 2.6% were HIV positive. There were 2 females aged 25 and 50 years and a male aged 42 years. The 25 year old female presented with squamous cell carcinoma of the conjunctiva, while the 57 year old woman had panophthalmitis. The male patient had herpes zoster ophthalmicus. He developed corneal opacities as complications of herpes zoster and had a peripheral iridectomy done to improve his vision.

Conclusion: Although the HIV seropositivity rate of 2.6% is low, there is a need to do routine testing for HIV seropositivity in ophthalmic surgical patients who are billed for surgery as it gives them an opportunity to know their HIV status, thus enabling them to take appropriate preventive or treatment measures where necessary. HIV screening should be mandatory for high risk patients such as those with panophthalmitis, herpes zoster and squamous cell carcinoma of the conjunctiva that are markers for HIV.

Key Words: Ophthalmic, surgical, patients, incidence, prevalence, HIV seropositivity. (Accepted 8 April 2008)

INTRODUCTION

Human Immune Deficiency Syndrome/ Acquired Immune Deficiency Syndrome (HIV/AIDS) is an important cause of public health morbidity in sub-Saharan Africa and the increasing incidence and prevalence require a greater proportion of the already limited financial, medical and human resources^{1, 2}. The first HIV case in Nigeria was that of a thirteen year old sexually active girl from Benue state which was reported in 1986³, but presently Nigeria is a major locus of HIV infection in Sub-Saharan Africa with a national sero-prevalence of 4.4%⁴. Some persons infected with HIV develop the full blown disease (AIDS), while others may remain symptomless, thus carriers constitute a good source for the transmission of the virus⁵. The ocular findings of AIDS which represent the late stages of the disease include ocular opportunistic infections such as herpes zoster ophthalmicus, cytomegalovirus

retinitis, retinal haemorrhages, cotton wool spots, Kaposi sarcoma and squamous cell carcinoma of the conjunctiva⁶⁻⁸. Umeh⁹ from Enugu and Adegbehingbe¹⁰ from Ife reported that 4 out of 6 patients with herpes zoster ophthalmicus who presented at their Hospitals, were HIV positive while Osahon¹¹ found that 3 out of 4 patients with herpes zoster ophthalmicus at the University of Benin Teaching Hospital were HIV positive. Nwosu¹² reported that four (5.3%) out of seventy six ophthalmic patients were HIV positive., 75% of these had herpes zoster ophthalmicus and 25% had uveitis. A good knowledge of the incidence and prevalence of HIV infection among ophthalmic surgical patients is important for the provision of effective measures that will control cross infection within the hospital. It will also help the affected patients to take appropriate treatment and preventive measures against transmission of the disease.

The University of Benin Teaching Hospital, Benin City is a tertiary institution that serves a wide spectrum of communities in various states of Nigeria including Edo, Delta, Ondo, Kogi, Anambra.

The aim of this study is to determine the incidence of HIV seropositivity among ophthalmic surgical patients at the University of Benin Teaching Hospital, Benin City with a view to identifying and treating such patients. It will also help in reducing the risk of transmission of the disease from affected patients to surgeons and other health care personnel

MATERIALS AND METHOD

This study is a prospective study in which one hundred and sixteen (116) consecutive patients who had ophthalmic surgeries (ocular) between July 2003 and June 2005 in the Ophthalmology Department of the Hospital were screened for HIV1 and 2. They were patients of all the consultant ophthalmologists in the department. The patients gave informed consent before the investigation was done. Eighty eight patients who did not give their consent were excluded from the study. These patients were mainly those for minor surgeries who did not understand why they should be subjected to HIV serotesting. There was no statistically significant difference in sex between the patients who were tested and those refused to be tested. p value=0.3129 and the type of operation $p > 0.05$.

Three cubic centimeters of venous blood withdrawn from each patient into a non-heparinised test tube was sent to the virology Laboratory of the Hospital where the tests were done. The parallel testing method using a 2 step algorithm was used. The main screening methods used were rapid ELISA tests, for example Capillus TM HIV1/ HIV2 (Trinity Biotech PLC) or HIV1/2 Stat Pak and Determine HIV1/2 to screen the specimen. If indeterminate from the first two techniques, both tests were repeated. Specimen that are positive in Determinate test and negative in the other test (HIV 1/2 stat pack or Capillus TM HIV1/HIV2) were reported as discordant. Then the Genie technique (ELISA) was used as a tie braker for discordant cases. Specimen that were positive in Genie 11 tests were reported as positive for HIV1 and HIV2. Specimen that were positive in Determinate test and negative in Genie 11 were reported as discordant cases. Their true serostatus were determined using western blot (WB) or polymerase chain reaction (PCR) or repeated a month later.

The biodata of the patients as well as the diagnosis and the result of the HIV screening were noted. The data were then analysed. EPI INFO was used. p value ≤ 0.05 was accepted as significant.

RESULTS

The total number of patients screened was one hundred and sixteen. There were 61 males and 55 females. The age range was 1 to 78 years with a mean age of 46 ± 22.2 years (SD). The highest number of patients, 25 was found in the age group 61 - 70 years comprising 21.6 % of the total number of patients,

followed by 24 patients in the 51 - 60 years age group (see Table 1). Three (3) patients comprising 2.6% were HIV positive. There were 2 females aged 25 and 50 years and a male aged 42years. The 25 year old female presented with squamous cell carcinoma of the conjunctiva while the 57 year old woman had panophthalmitis. The male patient had herpes zoster ophthalmicus. He developed corneal opacities as complications of herpes zoster and had a peripheral iridectomy done to improve his vision. Table 2 shows the diagnoses of the patients. Cataract was the most common diagnosis and indication for surgery in 63 (54.3%) patients followed by pterygium in 15 (12.9%) patients. The other diagnoses were chalazion in 13 patients, orbito ocular tumours in 10 patients, trauma in 9, panophthalmitis in 3, glaucoma in 2, herpes zoster and strabismus in one patient each.

Table 1: Age Group of Patients.

Age groups (years)	Frequency	Percentage
1-10	9	7.8
11-20	11	9.5
21-30	15	12.9
31-40	9	7.8
41-50	11	9.5
51-60	24	20.7
61-70	25	21.5
>70	12	10.3
Total	116	100

Table 2: Diagnosis of Patients.

Diagnosis	No. of Patients	%
Cataract	62	53.5
Pterygium	15	12.9
Chalazion	13	11.2
Tumours	10	8.6
Trauma	9	7.8
Panophthalmitis	3	2.6
Glaucoma	2	1.7
Herpes Zoster	1	0.9
Strabismus	1	0.9
Total	116	100

DISCUSSION

Knowledge of their serostatus will help individuals to take personal steps to prevent the spread of the disease. Recent evidence suggests that less than 10% of people living with HIV/AIDS know they have the disease¹³. The vast majority are completely oblivious of their carrier status and therefore continue to spread the disease¹⁴.

Patients who are booked for surgery should be given the opportunity to test their HIV status. The reported HIV seroprevalence rate in Nigeria is 4.4% but this may be higher in certain selective groups. Onakewhor et al¹⁵ reported a seroprevalence rate of 2.5% in pregnant women in Benin City while Halim et al¹⁶ found a positive seroprevalence rate of 3.5% among blood donors in Benin City. A seroprevalence rate as high as 11.8% has been reported in adolescents in Benin City¹⁷. Meeran¹⁸ reported a 5% HIV seroprevalence rate in surgical patients in Zambia, although these patients also had leprosy or tuberculosis. Nwosu¹² in a similar study on HIV seropositivity in ophthalmic patients found that four patients (5.3%) were positive. Three of these patients had herpes zoster while one had uveitis. There was no case of HIV seropositivity in the routine elective ophthalmic surgical cases¹².

A similar study on ophthalmic surgical patients at Enugu found a prevalence rate of 3% which is higher than that of 2.6% found in this present study¹⁹.

The three patients who were HIV positive in this study had lesions which are known markers for HIV/AIDS⁶⁻⁸, they had herpes zoster ophthalmicus, squamous cell carcinoma of the conjunctiva and panophthalmitis respectively. Herpes zoster infection is a common first presentation of HIV infected patients to the ophthalmologist in Africa^{7, 11, 20-22}.

Umeh⁹ found that four out of six patients with herpes zoster ophthalmicus screened for HIV were seropositive. Kestelyn et al²⁰ reported a 100% prevalence of HIV infection in their patients with herpes zoster ophthalmicus while Osahon¹¹ reported that 3 out of 4 patients (61%) with herpes zoster ophthalmicus were HIV positive. Onunu²³ reported that 69.2% of patients with herpes zoster in Benin City were HIV positive. Squamous cell carcinoma of the conjunctiva is a marker for HIV^{7, 8, 20}. Waddel et al⁸ reported that 71% of their patients in Uganda with squamous cell carcinoma of the conjunctiva were HIV positive compared with 16% of controls while 86% of 32 Malawi patients with squamous cell carcinoma of the conjunctiva were HIV positive. There is no link between the type of ocular presentation in HIV disease and the mode or risk of disease transmission.

CONCLUSION

The low prevalence rate of HIV seropositivity of 2.6% in this study compared with the National prevalence rate of 4.4% could be because most of the patients were elderly, above 50 years of age and this is a hospital based study. The incidence of HIV has been found to be higher in the younger age group and people with multiple partners^{17, 24}. Ejele²⁴ in Port Harcourt found that 77% of blood donors who were

HIV seropositive were aged between 16 and 45 years. Although the HIV seropositivity rate of 2.6% in this study is low, there is a need to do routine testing for HIV seropositivity for ophthalmic surgical patients undergoing operations for cataract and glaucoma as it gives them an opportunity to know their HIV status, thus enabling them to take appropriate preventive or treatment measures where necessary. HIV screening should be mandatory for high risk patients such as those with panophthalmitis, herpes zoster, squamous cell carcinoma of the conjunctiva that are markers for HIV. Screening ophthalmic surgical patients is an opportunity for HIV positive patients to be identified and managed appropriately. Universal precautions must be adhered to at all times as this will help to reduce the potential danger of transmitting HIV infection to eye care workers or from one patient to the other.

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