

HIV and HBsAg Seropositivity Amongst Patients Presenting for Ocular Surgery at a Tertiary Eye Care Hospital in Nigeria

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Abstract: *Background:* The prevalence of HIV/AIDS and HBsAg sero-positivity is very high in sub-Saharan African. There is a risk of horizontal transmission of these diseases amongst ophthalmic patients.

Aim: To determine the proportion patients for eye surgery who are HIV/AIDS and HBsAg sero-positive at the National Eye Centre, Kaduna, Nigeria.

Methods: Patients selected for eye surgery during a surgical camp at the National Eye Centre, Kaduna were counseled for Voluntary Counseling and Testing (VCT) and HBsAg to determine their viral status.

Results: A total of 650 patients who were selected were screened. The distributions of the indications for selection were as follows: cataract 483 (74.3%); glaucoma 44 (6.8%) and pterygium 123 (18.9%). Two patients (0.2%) were found to be HIV seropositive while 11 (1.5%) were HbsAg positive.

Conclusion: Pre-operative screening of all patients going for ophthalmic surgery for HIV and HbsAg may be desirable in our environment.

Keywords: HIV, HBsAg, ocular surgery, seroprevalence, Nigeria.

BACKGROUND

Ophthalmic surgeries are among the most performed surgeries worldwide. The indications for the surgery in ophthalmology include amongst other cataract (loss of clarity of the crystalline lens); glaucoma (characterized by progressive loss of optic nerve head tissue and constriction of the visual field); retinal detachment; squints and refractive errors, pterygium, globe lacerations from trauma, cornea foreign bodies and lid abnormalities like entropion.

The prevalence of HIV/AIDS and HBsAg sero-positivity is very high in sub-Saharan African [1-4]. Many patients undergoing eye surgery do not know their viral status. Thus there is a risk of horizontal transmission of these diseases amongst ophthalmic patients and eye care providers. We aimed to determine the proportion of patients for eye surgery who were HIV/AIDS and HBsAg sero-positive at the National Eye Centre, Kaduna, Nigeria.

PATIENTS AND METHODS

Patients selected for eye surgery during a surgical camp at the National Eye Centre, Kaduna were advised for Voluntary Counseling and Testing (VCT) for HIV and HBsAg to determine their viral status. The Chembio HIV 1/2 STAT-PAK assay was used in venous whole blood. It is a single-use immuno-chromatographic, rapid screening test for the detection of antibodies to Human Immunodeficiency

Virus Types 1 and 2 (HIV 1/2). The result is interpreted as non-reactive or reactive.

Wondo one step HBSAg serum/plasma test strip was used in determining the hepatitis B surface antigen in the serum. It is a rapid immuno-chromatographic assay. It is a qualitative test. A positive result indicates that the presence of HBsAg is equal to or greater than 1ng/ml, while a negative test indicates that the level of HB surface antigen is zero or below the detection level of the test.

Patients found to be HBsAg and/or HIV positive were not operated on during the camp.

RESULTS

A total number of 650 patients including 65.1% males were screened. The age range was 4 to 96 years with a mean age of 54.4 (SD 12.0). The distributions of the indications for selection were as follows: cataract 483 (74.3%); glaucoma 44 (6.8%) and pterygium 123 (18.9%). Two patients (0.3%) were found to be HIV seropositive while 11 (1.7%) were HBsAg positive.

DISCUSSION

There is a real risk for transmission and spread of HIV and hepatitis B during ophthalmic surgical procedures. The transmission can take place from patient to patient, patient to health care worker or health care worker to patient. This can be through improperly sterilized surgical equipments, contaminated sharps or blood transfusion. Large numbers of ophthalmic surgeries are carried out annually across the world; especially for cataract. In the average cataract,

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surgical rate is around 300 per million population per annum [5].

The traditional medical tests carried before ophthalmic surgeries include fasting blood sugar, complete blood count, bleeding disorders, chest x-ray and electrocardiogram. The aim was to detect systemic conditions that could affect the success of our surgeries and prevent spread of diseases. The benefit or otherwise has been challenged by some ophthalmic Surgeons [6]. Many studies have reported the usefulness or otherwise of pre-operative medical testing before ocular surgery (especially cataract surgery). Schein *et al.* did not find it useful for cataract surgery in a large study involving 19, 150 patients in the USA [6].

In a systematic review, the incidence of adverse events was same in both preoperative testing and no preoperative or selective testing groups. The main adverse events were cardiovascular. The preoperative tests performed were: ECG, complete blood count, and measurement of serum levels of electrolytes, urea nitrogen, creatinine, and glucose [6].

Instead, individualized risk analysis for intra-operative cardiovascular accident should guide the choice for preoperative laboratory test.

It has been suggested that preoperative testing for infectious disease with potential for spread is more useful especially in developing countries where the burdens of these diseases are very high. In this study, we found that 0.3% of the screened patients were HIV positive while 1.7 % were positive for HBsAg. In a report from Eastern Nigeria, 3.7% of eye surgical patients were found to be HIV positive at a rural hospital [7].

Authors are not aware of reports of transmission of HIV or hepatitis B during ophthalmic surgery. But viral particle has been reported in donor cornea tissue for transplant [8].

The benefit of determining the status of our patients will include early detection of infected individual for early commencement of treatment and contribute to the total efforts at the surveillance of these diseases. The surgical team will take extra care in preventing from being infected while treating these patients. The standard preoperative and intra-operative techniques for asepsis should however not be compromised whether the patient is sero-positive or sero-negative.

Preoperative testing for these two viruses may be more desirable as routine test before intraocular surgery in areas with high prevalence like our environment. This can help in

limiting the spread of these two viruses amongst our patients and eye care providers.

There is a need for studies to determine the actual incidence of transmission of these viruses in ocular surgery.

CONCLUSION

There is a negligible but real risk of transmission of HIV and hepatitis B virus during cataract surgery. Pre-operative screening of all patients going for ophthalmic surgery for HIV and HbsAg may be desirable in our environment.

CONFLICT OF INTEREST

The authors confirm that this article content has no conflict of interest.

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DECLARATIONS

None of the authors have any relationship with any of the products mentioned in this article.

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