

Original Research Article

HIV and HBsAg Sero-Positivity amongst Patients Presenting for Ocular Surgery at a Tertiary Centre

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Abstract: *Aim:* To determine proportion of patients for eye surgery who are HIV and HBsAg seropositive. *Method:* This observational hospital based study was performed in a tertiary care centre between August 2019 to February 2020. Voluntary counselling and testing for HIV and HBsAg was done to determine viral status of the patients. They were screened by immune-assay based rapid diagnostic card tests for viral infection. Positive cases were confirmed with ELISA test. Result was interpreted as reactive or non reactive. *Result:* Total 560 patients were screened. The distribution of the indications for selection were-cataract(73.8%), glaucoma(6%), and pterygium(20.2%). Seven patients were found to be HIV seropositive while twelve were HBsAg positive. *Conclusion:* Awareness of prevalence along with knowledge of rate of accidental exposure and risk of transmission would help to understand cost effectiveness of universal preoperative screening before surgery.

Keywords: HIV, HBsAg, cataract surgery, risk of transmission patients, immuno-chromatographic assay.

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INTRODUCTION

Ocular surgeries are among the most performed surgeries worldwide. Ophthalmic surgeries include cataract, glaucoma, retinal detachment, squint, refractive errors, pterygium, globe lacerations and lid abnormalities. Cataract is a preventable cause of blindness and cataract surgery is the most common surgery performed worldwide to restore vision. India is performing 6 million cataract surgeries every year [1].

Many patients undergoing eye surgery do not know their viral status and hence, there is a risk of horizontal transmission of these diseases amongst patients to eye care provider. The HIV infection leads to chronic carrier state in 60% of affected individuals [2]. Surgeons and paramedical staff are at increased risk to get infected.

According to WHO studies, out of 2 billion people who have been infected with hepatitis B virus, more than 350 million have lifelong infection. These patients are at a higher risk of death from cirrhosis of liver and liver cancer [3].

Hence, the main aim of the present study is to highlight the importance of screening for HIV and hepatitis B among patients undergoing ophthalmic surgeries.

Aim

1. To determine proportion of patients for eye surgery who are HIV and HBsAg sero positive.
2. To study the sero positivity of these infections in relation to different variables like age, sex etc.

MATERIALS AND METHODS

This observational hospital based study was performed in a tertiary care centre of Jharkhand between August 2019 to February 2020.

A total of 560 patients were screened, voluntary counselling and testing for HIV and HBsAg was done to determine the viral status of these patients. Patients were screened by single use immuno-chromatographic, rapid screening test for detection of antibodies to Human Immunodeficiency virus Types 1&2. The result was interpreted as reactive or non-reactive.

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.

Patients who were found to be HIV and for HBsAg positive were not operated.

3. Patients with cardiovascular diseases.

Inclusion Criteria

All patients screened for HIV and Hepatitis B as part of pre-operative assessment before surgery after informed consent for testing.

Exclusion Criteria

1. Patients who were not screened.
2. Patients who were not willing to participate in the study.

RESULT

Total 560 patients were screened.

Table 1: Sex Distribution

Sex	No. of patients	Percentage
Male	372	66.4%
Female	188	33.6%
Total	560	100.0%

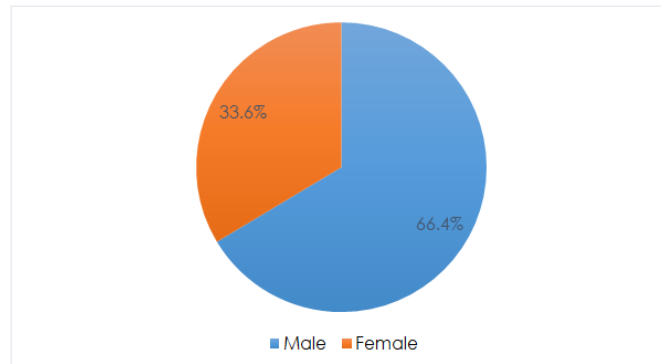


Fig 1: Diagram showing sex distribution

Male predominance was seen. Out of 560 patients, 372 were male and the rest female.

Table 2: Age group Distribution

Age (in yrs.)	No. Of patients	Percentage
<20	0	0
21-30	27	4.8%
31-40	92	16.4%
41-50	125	22.3%
51-60	132	23.6%
61-70	110	19.6%
71-80	74	13.2%
Total	560	100

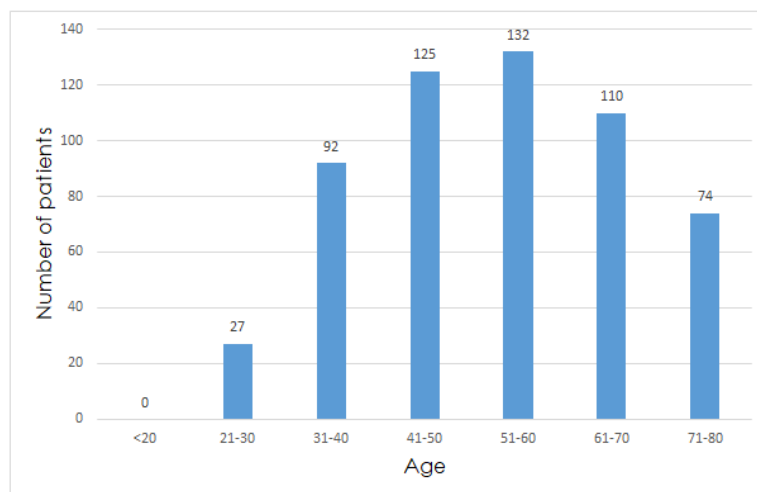


Fig 2: Age group Distribution

Minimum patients were in the age group 21-30 years and maximum between 51-60 years.

Table 3: Distribution of indication

Type of Ophthalmic Surgery	No. of Patients	Percentage
Cataract	413	73.8%
Glaucoma	34	6 %
Pterygium	113	20.2%
Total	560	100.0%

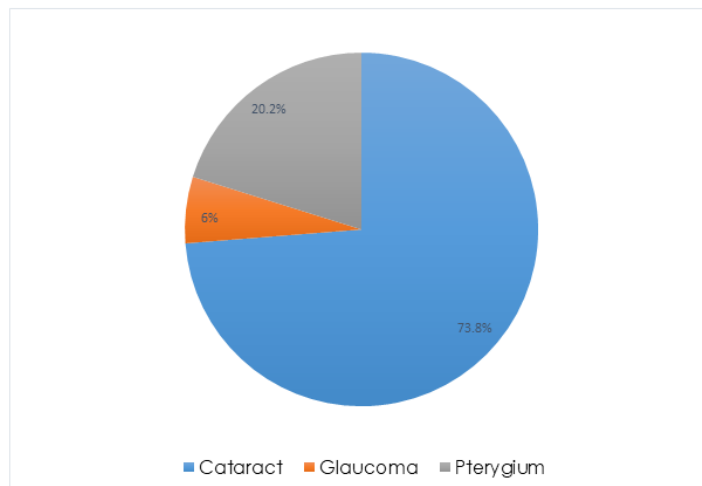


Fig 3: Type of Ophthalmic surgery

Maximum number of cases that underwent surgery had cataract.

Table 4: Seropositive Cases

	Number of cases	Percentage
HIV	7	1.25
HBsAg	12	2.14

7 patients were found to be HIV seropositive while 12 were HBsAg positive.

DISCUSSION

There is a risk for transmission and spread of HIV and HBV during surgical procedure. This transmission can take place from patient to patient. Health care worker to patient or patient to health care worker. This can either be through improperly sterilized surgical equipments or through contaminated instruments.

Male predominance can be due to more males coming for treatment and testing in our setting. This finding is comparable to a number of studies [4-8].

Maximum number of patients were in the age group 41-60 years, it could be due to majority of the screened patients that were included in the study had cataract. The common medical tests carried before any ophthalmic surgeries includes fasting blood sugar, complete blood count, bleeding disorders, chest X-ray and electro-chromatogram. The purpose was to detect any systemic conditions that may affect the success of surgeries and prevent spread of diseases. The benefit

has otherwise been challenged by some ophthalmic surgeons⁽⁹⁾. Many studies have shown the usefulness of pre-operative medical testing. Schein et al did not find it useful for cataract surgery [9].

In a study, the incidence of adverse events were same in both preoperative testing and no preoperative testing. The main adverse events were that of cardiovascular [9].

It is suggested that preoperative testing for any infectious disease is more useful, especially in developing countries. In this study of ours, we found that 1.25% of the screened patients were HIV positive while 2.14% were HBsAg positive. In a report from Eastern Nigeria, 3.7% of eye surgical patients were found to be HIV positive at a rural hospital [10].

Surgeons and authors are unaware of reports of transmission of HIV or Hepatitis B during surgery, but viral particle has been seen in donor cornea tissue from transplant [11].

The purpose of our study is to detect early the status of infected individual for early commencement of treatment. The surgical team will take extra care in preventing from being infected. However, the standard preoperative and intra operative techniques should not be compromised irrespective of the viral status of the patient.

Preoperative testing for these two viruses may be more useful before surgery in areas of high prevalence to limit the spread.

CONCLUSION

There is a negligible but real risk of transmission of HIV and Hepatitis B virus during cataract surgery. Awareness of prevalence along with knowledge of rate of accidental exposure and risk of transmission would help to understand cost effectiveness of preoperative screening before ocular surgeries. Need for mass immunization against Hepatitis B and awareness regarding it should be promoted among doctors, paramedical staff and general public.

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