



Original Research Article

Seroprevalence of HIV, Hepatitis B and Hepatitis C infections in cataract surgery patients

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ABSTRACT

Background and Aim: In India the frequency of Hepatitis B and C virus infection are high in the general population with variations in different parts of the country. Patients undergoing any surgical procedure may have these infections, demanding special precautions. The aim of this study was to determine frequency of hepatitis B and C among patients undergoing elective cataract surgery and also study the seropositivity of these infections in relation to different variables like age, sex etc.

Materials and Methods: It was a Cross sectional Study. All patients who underwent screening for cataract surgery in our Institute from May 2017 to April 2019 and were tested for HIV, HBs Ag and Anti-HCV Ab were included in the study.

Results: In the present study, the seropositivity of HIV, Hepatitis B and Hepatitis C were statistically not significant ($p > 0.10$) either for age-group or gender.

Conclusion: Screening of blood borne viral infections has great importance in minimizing the transmission of the virus to the patients, doctors and paramedical staff through sharp knives, needles and other surgical instruments. The alarming percentage of positive viral infection gives us an idea of the risks involved and how to adopt practices which ensures the safety from these Infections.

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1. Introduction

Hepatitis B and HIV are major diseases affecting mankind and a serious global public Health problem. According to WHO studies, out of 2 billion people who have been infected with the hepatitis B virus (HBV), more than 350 million have chronic (life long) infection. These chronically infected persons are at high risk of death from cirrhosis of liver and liver cancer.¹

Cataract is a preventable cause of blindness and cataract surgery is the most common surgery performed worldwide to restore vision. As per NPCB2011 (National Program for Control of Blindness), 1% of the Indian population (121 core) is blind. Of this, 62% are blind due to cataract. Incidence of cataract is 0.4% to 0.5%. Approximately, 7 million people are/become blind due to cataract at any point

of time. India is performing 6 million cataract surgeries every year.²

The HIV infection leads to chronic carrier state in 60% of affected individuals.³ Surgeons and paramedical staff and other staff are at increased risk to get infected, especially in a surgical setup where unknown carriers of the virus are undergoing various procedures.

Risk of exposure during surgery in ophthalmology includes out-patient (OPD) procedures like syringing, biometry, Tonometry and OT procedures during anaesthesia, handling of sharp instruments (Blade, side-port, needles) and during cleaning and exchange of instruments, disposal of biomedical waste.

Hence the main aim of the present study is to highlight the importance of screening for HIV, Hepatitis B and Hepatitis C among cataract patients

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2. Objectives

1. To analyse the data and find seroprevalence of HIV, HepatitisB, and Hepatitis C among cataract patients
2. To study the seropositivity of these infections in relation to different variables like age, sex etc.

3. Materials and Methods

Approved by Institutional Ethics Committee & Institutional Research Committee

3.1. Study Design

Cross sectional Study

3.2. Population

All patients who underwent screening for cataract surgery in our Institute from May 2017 to April 2019 and were tested for HIV, HBsAg and Anti-HCV Ab were included in the study.

3.3. Inclusion criteria

All patients screened for HIV, HBV and HCV as part of Pre-operative assessment before cataract surgery after informed consent for testing

3.4. Exclusion criteria

1. Patients of Ophthalmic diseases other than cataract
2. Patients who are not screened for all three infections (only screened for HIV and HBsAg, but not AntiHCVAb)

3.5. Statistical Analysis

In the present study, the data analyzed by using following statistical tools.

1. Pearson’s correlation coefficients
2. Chi-square test
3. Fisher’s Exact test and
4. Likelihood Ratio

4. Results and Observations

The seropositivity of HIV, Hepatitis B and Hepatitis C were statistically not significant ($p>0.10$) either for age-group or gender

In the total study population (N=2766) male were predominant than females.

The present finding showed that HBV seroprevalence is more when compared to other infections.

In the present study, seroprevalence was more in males than in female cataract patients. HCV data was not significant when compared with HBV and HIV.

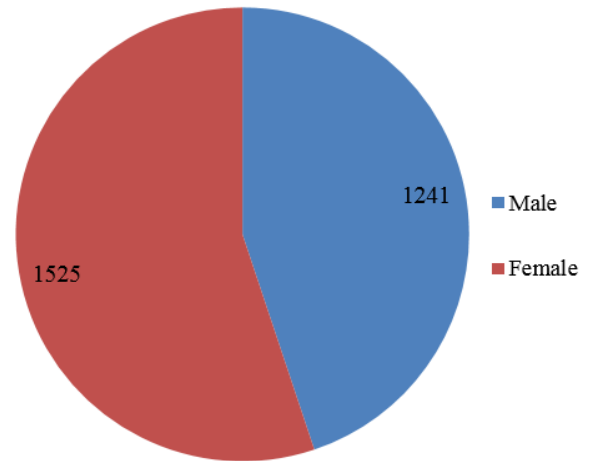


Fig. 1: Total number of patients and sex ratio

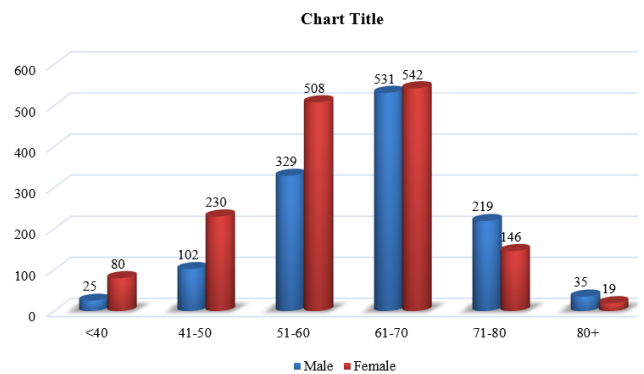


Fig. 2: Age of patients

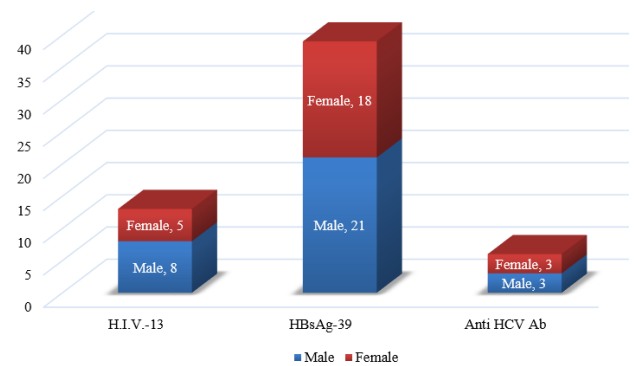


Fig. 3: Gender wise serospecificity

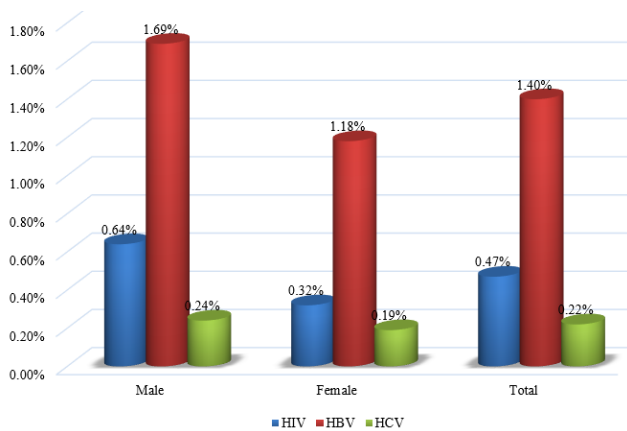


Fig. 4: Seroprevalence

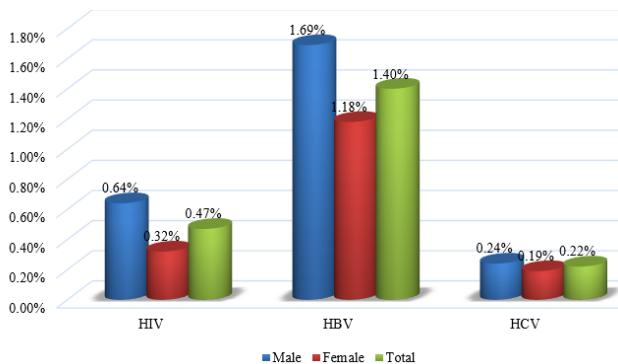


Fig. 5: Seroprevalence in cataract patients

5. Discussion

The alarming situation of both HBV and HIV infection require that preoperative screening is necessary to avoid the transmission of blood-borne pathogens. This early detection is important while doing surgeries.

The frequency of HBV was more in males than females while there was not much gender difference found as far as HCV was concerned.

The greater frequency of HBV infection in males as compared to females could be a reflection of more males coming for treatment and testing in our setting. Besides it could be due to more social mobility in males than females and thus greater vulnerability to be infected. This finding is comparable to a number of studies,^{4–8} while contradicting results of other studies conducted in different parts of the country.^{9,10}

In the present study, the seropositivity of the three virus infections in relation to age and gender were not statistically significant. This is comparable to other studies conducted for prevalence of HIV, HBV, and HCV infection in general population and cataract surgery patients.^{4–7}

Both hepatitis B and C are highly prevalent in the age group between 55 – 64 years. It could be due to study being conducted among cataract patients, majority of whom are

of old age, while prevalence of HBV and HCV infections is least in the age group 25–34 years.

The results show that the rate of HBV infection is higher than HCV in this study, which is in line with other studies carried out at national^{11,12} and International level.^{13,14}

6. Conclusion

Finally our findings concluded that, it is very important to screen all cataract surgery patients for HIV, HBV and HCV. Larger population based studies are needed to confirm the results. The high prevalence of HBs Ag and anti-HCV in the eye patients presenting for cataract surgery provides evidence for routine preoperative screening of all patients for surgery. Need for mass immunization against hepatitis B, and awareness regarding hepatitis B and C should be promoted among doctors, paramedical staff and general public. Periodic screening is to be made mandatory to detect latent cases of seropositivity to reduce the occupational hazard of health care professionals. The patients who are diagnosed with these infections can be sent for therapy as required for the particular virus infection. This prevents the complications and helps decrease the morbidity of these patients.

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8. Source of Funding

None.

9. Conflict of Interest

None.

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