

FREQUENCY AND RISK FACTORS OF HEPATITIS B AND C VIRUS INFECTIONS IN PATIENTS UNDERGOING CATARACT SURGERY

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ABSTRACT

Background: Hepatitis B virus and Hepatitis C virus infections are major health problems all over the world. The objective of this study was to determine the frequency and identify risk factors of HBV and HCV in patients undergoing cataract surgery.

Material & Methods: This descriptive study was conducted in the Department of Ophthalmology, District Head Quarter Teaching Hospital, Gomal Medical College, D.I. Khan, Pakistan, from January 2010 to June 2012. A sample of 330 patients was selected using purposive non-probability sampling technique. Screening for HBV and HCV was done with ICT method. All positive patients were confirmed by ELISA test. Descriptive statistics were applied as number (frequency) and percentage.

Results: The mean age of the sample was 63.7 with SD 5.83 (45-80) years. Out of 330 patients, 165 (50%) were males and 165 (50%) females. Thirteen patients (3.93%) were HBV positive and 32 (9.69%) were HCV positive. Out of 13 HBV positive cases, 8 (61.64%) were males and 5 (38.36%) were females. Out of 32 HCV positive patients, 19 (59.37%) were males and 13 (40.63%) were females.

Conclusion: Hepatitis B virus and Hepatitis C virus infections are common infections in our setup. HCV is more prevalent than HBV. All patients booked for any type of surgery must be screened for HBV & HCV. Public awareness programs regarding risk factors for these diseases should be carried out through print and electronic media.

KEY WORDS: Hepatitis B virus, Hepatitis C virus, Cataract, ELISA (Enzyme-Linked Immunosorbent Assay).

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INTRODUCTION

Hepatitis B virus (HBV) and Hepatitis C virus infections (HCV) are major health problems all over the world, particularly in developing countries like Pakistan and underdeveloped world.¹ The frequency of HBV & HCV infections has variation world wide as well as territorially in the same country. The prevalence of HBV and HCV has made alarming situation in Pakistan.

According to WHO estimate, about 130 to 170

million people have clinical infection with HCV and more than 0.3 million people die from liver disease due to hepatitis C each year.² WHO has further estimated that about two billion people have infection with HBV and more than 350 million have chronic liver infection.³ HBV and HCV are the main contributors of infectious diseases in the world.⁴

Lack of information and health education regarding the safe practices seem to be the major risk factors for transmission of HBV and HCV in the community. This is the reason why mass health care awareness drives need to be carried out for both health care providers and the public to reduce this menace.⁵

HBV and HCV can be transmitted by various means. Common modes of transmission are; use of contaminated needles and instruments, unsafe blood product transfusion, IV drugs abuse, face and

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armpits shaving by barbers, ear and nose piercing, poor personal hygiene, quackery and adultery.⁶⁻⁸ Transmission can be made through sexual act and from infected mothers to babies at the time of birth.⁹

A recent report by WHO has stated that every twelfth person in the world is living either with HBV or HCV infection.¹⁰ Both HBV & HCV are global diseases being endemic in many countries. World data shows that HBV with combination of HCV accounts for 75% of all cases of liver diseases. These diseases are highly endemic in Asian countries.¹¹ Pakistan is an endemic area for hepatitis B & C. Some recent studies have reported prevalence of HBV and HCV to be 2.5% and 5% respectively.¹²

This study was conducted with the objective to determine the frequency and identify risk factors of HBV and HCV in patients undergoing cataract surgery in our set up.

MATERIAL AND METHODS

This descriptive study was conducted in the Department of Ophthalmology, District Head Quarter Teaching Hospital, Gomal Medical College, D.I. Khan, Pakistan, from January 2010 to June 2012.

A sample of 330 patients was selected using purposive, non-probability sampling technique. All the patients enrolled for elective cataract surgery were included. All those already suffering from HBV & HCV were excluded from the study.

Screening for HBV and HCV was done with ICT method. All positive patients were confirmed by ELISA test. Detailed history including past treatment, surgical or medical, history of any blood transfusion or other related risk factors was taken. All patients underwent extra capsular cataract extraction with posterior chamber intra ocular lens implantation uneventfully. Gender & age in years were demographic variables. Major surgical procedure, blood transfusion, dental extraction, barber face and armpit shave, non disposable syringes use and no significant history were the research variables. Descriptive statistics were applied as number (frequency) and percentage.

RESULTS

The mean age of the sample was 63.7 with SD 5.83 (45-80) years. Out of 330 patients, 165 (50%) were males and 165 (50%) females. Table 1 presents

Table 1: Gender distribution of patients for cataract surgery with HBV & HCV.

Gender	Number	Percentage
Male	165	50%
Female	165	50%
Total	330	100%

Table 2: Gender-wise frequency of HBV & HCV in patients for cataract surgery.

Infections	Sample size	Male frequency	Female frequency	Total frequency	Percentage
HBV	330	8	5	13	3.93%
HCV	330	19	13	32	9.69%

the descriptive statistics of the sample regarding gender distribution.

Table 2 presents gender-wise distribution of infections. Thirteen patients (3.93%) were HBV positive and 32 (9.69%) were HCV positive. Out of 13 HBV positive cases, 8 (61.64%) were males and 5 (38.36%) were females. Out of 32 HCV positive patients, 19 (59.37%) were males and 13 (40.63%) were females.

Table 3 presents distribution of risk factors for HBV & HCV. Out of HBV patients, 4 (30.76%) patients had history of major surgical procedure, 2 (15.38%) patients had blood transfusion, 2 (15.38%) patients had dental extraction, 2 (15.38%) patients had history of routine face and armpit shaving by barber, 1 (7.69%) patient had history of injection by quack using non disposable syringe and 2 (15.38%) patients had no significant history. In HCV positive 7 (21.87%) patients had history of major surgical procedure, 8 (25.00%) patients had blood transfusion, 6 (18.75%) patients had dental extraction, 5 (15.62%) patients had history of quackery injection and 6 (18.75%) patients had no significant history.

DISCUSSION

There are many national and international studies reporting different results. A study was conducted by Hameed¹³ who has reported frequency of HBV in 2.35% and HCV in 6.37% patients. These values are lower as compared to our results i.e. HBV and HCV in 3.93% and 9.69% patients respectively but his frequency in males is higher than females just like our study.¹³ Similarly Soomro et al have reported higher frequencies in males than females which is like our study.¹⁴ On the contrary, Qureshi et al have shown lower frequencies of HBV and HCV in their study i.e. 2.5% and 4.8% respectively.¹⁵

According to another national study the prevalence of HBV and HCV was 2.1% and 11.1% respectively and this study has also reported co-infection of HBV and HCV in one patient. This study from some aspect is comparable to our study but our study has shown no co-infection.¹⁶

There are multiple risk factors for HBV and HCV in our patients. In both HBV, HCV major surgical procedure, blood transfusion, dental extraction,

Table 3: Frequency of risk factors for HBV & HCV in cataract patients.

S.No.	Risk Factors	HBV positive patients	Percentage	HCV positive patients	Percentage
1	Major surgical procedure	4	30.76%	7	21.87%
2	Blood transfusion	2	15.38%	8	25%
3	Dental extraction	2	15.38%	6	18.75%
4	Barber Face and armpit shave	2	15.38%	0	0
5	Non Disposable syringes use	1	7.69%	5	15.62%
6	No significant history	2	15.38%	6	18.75%
Total		13	100%	32	100%

use of non disposable syringes, routine barber shop face and armpit shave were the main risk factors as mentioned in the results. Ahmed & Erdent et al has reported high have prevalence of HBV in professional blood donors.^{17,18}

Study of Majid et al has reported risk factors for spreading HBV and HCV in community. They have demonstrated use of non disposable syringes, blood transfusion, surgical and dental procedure, barbers shop face and armpit shaving to be high risk factors¹⁹. Ayele et al study regarding the risk factors is comparable to our study. They have reported major and minor surgical procedure, dental extraction and blood transfusion to be the risk factors.²⁰ Yasir et al have reported blood transfusion and injectable drug abuse as high risks for spread of HBV and HCV.²¹ HCV spread has been reported to be more due to unsafe and unnecessary needles.^{22,23} Barbers do not use sterilized blades and razors due to which it is considered to be a contributing factor in transmission of HBV and HCV among the population.^{23,24} The cumulative greater HBV and HCV risk of infection associated with history of surgery substantiates the need for improving the safety of surgical care.

CONCLUSION

Hepatitis B virus and Hepatitis C virus infections are common infections in our setup. HCV is more prevalent than HBV. All patients booked for any type of surgery must be screened for HBV & HCV. Public awareness programs regarding risk factors for these diseases should be carried out through print and electronic media.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.