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VIRAL MARKERS;

MANDATORY VIRAL MARKERS (HBV & HCV) AND ITS PREDISPOSING RISK FACTORS FOR PATIENTS UNDERGOING OCULAR SURGERY ADMITTED IN EYE WARD KDA TEACHING HOSPITAL KOHAT.

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ABSTRACT… Objectives: To know the prevalence and predisposing risk factors of HBV and HCV in patients undergoing ocular surgery. **Study Design:** Descriptive study. **Setting:** Department of Ophthalmology Khyber Medical University Institute of Medical Sciences / K.D.A Teaching Hospital Kohat. **Period:** January 2015 to December 2016. **Materials and Methods:** All admitted patients in eye ward for surgery. Informed consent was taken from patients. Detailed history including surgical, medical treatment, blood transfusion and other relevant was taken. All those patients who were not previously diagnosed as HBV and HCV positive were included in the study. ICT method was used for screening. Those who were positive with ICT were confirmed by Eliza test. Eliza negative patients were excluded. During these two years total 2547 patients with mean age of 63.4 years were admitted in eye ward. **Results:** By ICT method 43(1.68%) patients were HBC positive in which 24(55.81%) were male and19(44.18%) were female. 121(4.75%) patients were HCV positive, out of them 44(36.36%) were male and 77(63.63%) were female. All positive patients were confirmed by ELIZA test. Regarding predisposing risk factors. in HBV positive, 13(30.23%) patients had history of major surgical procedure, 9(20.93%) patients had dental extraction, 6(13.95%) had blood transfusion, 6(13. 95%) had quackery injection with non disposable syringes, 2(4.65%) patients had routine face and armpit shave in barber shops and no significant history in 7(16.27%) patients**.** In HCV positive, 29(23.96%) patients had history of major surgical procedure, 22(18.18%) patients had blood transfusion, 18(14.87%) patients had dental extraction, 16 (13.22%) patients had history of injection by quack using non disposable syringe, 13(10.74%)had routine face and armpit shave in barber shops and 23(19.00%) patients had no significant history. **Conclusion:** HBV and HCV are common among community. HCV is more prevalent as compared to HBV. Every patient should be screened before surgery.

Key words: Hepatitis B Virus (HBV), Hepatitis C Virus (HCV).

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INTRODUCTION

Hepatitis B and C viruses are global health problems particularly in low income with poor living standard countries.

According to WHO reported data about two hundred million people have infection with HBV and more than 350 million people have chronic liver diseases due to these viruses.[1] Both Hepatitis B and C are the key viruses which can cause acute and chronic hepatitis.[2] Prevalence of HCV is nearly 3% in world.[3]

Prevalence of HBV and HCV is going up in Pakistan. According to some studies population affected by HBV and HCV is round about 10% and 4-10% respectively in Pakistan.[4,5,6] Deficient knowledge and low standard health care services affecting the safe surgery are the core predisposing risk factors for spread of HBV & HCV in the community. Special efforts should be carried out by health personnel and the community to combat this challenging disaster.[7] Prevalence of HBV and HCV is variable nationally as well as internationally as reported by studies.

There are various sources through which Hepatitis B & C viruses can be spread. Most important reported channels of spread are uses of non disposable syringes by quacks, unsterilized instruments and blood transfusion. Additionally sexual contact and addicted iv drugs

abusers also have a pivotal role in spread of these deleterious viruses.[8] Some hospitals do not screen patients for HBV and HCV predisposing health care providing staff and patients to serious threats.[9] According to a study infected mothers can transmit the viruses to babies at the time of birth.[10]

Risk of exposure in ophthalmology includes OPD procedures like syringing, biometry, tonometry cleaning and exchanges of instruments and disposal of biomedical waste.

Keeping in view this global problem, the objective of this study was focused on the prevalence of Hepatitis B and C viruses and to point out important predisposing risk factors for spread of these viruses in patients to be surgically operated for various eye problems in our hospital.

MATERIALS AND METHODS

This study was carried out in Department of Ophthalmology Khyber Medical University Institute of Medical Sciences / K.D.A Teaching Hospital Kohat from January 2015 to December 2016. The aim of the study was to know prevalence and find out predisposing risk factors for Hepatitis B and C viruses in patients admitted for surgery for different ocular diseases .All patients were admitted in the ward. Appropriate proforma for documentation of patients was prepared. Informed consent was taken from patients. Proper history embracing all specific and relative questions regarding medical and surgical treatment, blood transfusion and risk factors was taken. Those patients were included in study who were not previously diagnosed to be suffering from HBV and HCV. ICT method was used for screening of HBV and HCV. Eliza test was used to confirm the patients who were positive by ICT. Eliza negative patients were excluded from the study.

RESULTS

Total 2547 patients with mean age of 63.4 years admitted in ward were screened for HBV and HCV and risk factors. Out of these patients 1163(45.66%) were male and 1384(54.34%) were female (Table-I). In these patients 2193(86.10%) were cataract, 152(5.96%) DCR, 84(3.29%) were trauma/repair, 79(3.10%) trabeculectomy and 39(1.53%) squint (Table-II).

By ICT method 43(1.68%) patients were HBV positive and 121(4.75%) patients were HCV positive (Table III). In HBC positive patients 24(55.81%) were male and 19(44.18%) were female while in HCV positive patients 44(36.36%) were male and 77(63.63%) were female (Table IV). All the ICT positive were declared positive by confirmation with ELIZA. None of the patients was both HBV and HCV positive.

Regarding predisposing risk factors, in HBV positive patients, 13(30.23%) patients had history of major surgical procedures, 9(20.93%) had history of dental extraction, 6(13.95%) had blood products transfusion history, 6(13.95%) patients had history of non using disposable syringes by quack 2(15.38%) had history of barber shops shave routinely while no significant history was noted in 7(16.27) patients (Table-V).

In 121 Hepatitis C positive patients 29(23.96%) patients had history of major surgical procedures, 22(18.18%) patients had history of blood transfusion, 18(14.87%) patients had dental extraction history, 16(13.22%) patients had undergone quackery injection with non disposable syringes, 13(10.74%) patients had history of routine face and armpit shave in barber shops and 23(19.00%) patient had no significant history (Table-VI).

Gender	No of patients	Percentage
Male	1163	45.66
Female	1384	54.34

Table-I. Gender distribution. No 2547

Surgery	No of patients	Percentage
Cataract	2193	86.10
DCR	152	5.96
Trauma /Repair	84	3.29
Trabeculectomy	79	3.10
Squint	39	1.53

Table-II. Surgeries distribution. No 2547

Virus	No of patients	Percentage
HBV	43	1.68
HCV	121	4.75

Table-III. HBV and HCV positive patients.

Gender	HBV with percentage	HCV with percentage.
Male	24(55.81%)	44(36.36%)
Female	19(44.18%)	77(63.63%)

Table-IV. HBV and HCV positive patients according to gender.

Risk Factors	No of patients	Percentage
Major surgical procedure	13	30.23
Dental extraction	9	20.93
Blood transfusion	6	13.95
Non-disposable syringes use by quacks.	6	13.95
Face and armpit shave in barber shop.	2	4.65
No significant history	7	16.27

Table-V. Predisposing risk factors for HBV. No. 43

Risk Factors	No of patients	Percentage
Major surgical procedure	29	23.96
Blood transfusion	22	18.18
Dental extraction	18	14.87
Non Disposable syringe use	16	13.22
Face and armpit shave in barber shops	13	10.74
No Significant history	23	19.00

Table-VI. Predisposing risk factors for HCV. No. 121.

DISCUSSION

Hepatitis B & C are global health problem more prevalent in poor countries. Reported data ensure that the magnitude of HBV & HCV is going up accounts for nearly 75% of all liver diseases due to these viruses being more prevalent in Asian world.[11,12] The high prevalence of these viruses in patients undergoing surgery make the health personnel at high risk for acquired blood born diseases from patients to be operated.[13]

The prevalence of Hepatitis B and C has created grave and challenging issue in some places in our country. The prevalence of HBV and HCV is on rise but due to massive campaign in some developed countries it has been brought down.

Our study has reported HBV and HCV in 1.86% and 4.75% patients respectively. These results are similar as well as different in some aspects with national and international studies. Khan S.B et al have reported prevalence of HBV and HCV 3.93% and 9.69% respectively almost double of our study.[14] The reason may be that they have selected patients only for cataract, less sample size and territorial based. National study revealed prevalence of hepatitis B in 2.67% and hepatitis C in 6.17% patients. These figures are higher as compared to our study but their sample size was less.[15] National studies have revealed high prevalence and being more in female.[16] Huda W U. has reported prevalence of HBV&HCV 26.92% & 73.07% respectively in patients of cataract in urban area.[17] This high ratio may be due to lack of education, ignorance because our study was conducted in more educated area and more public awareness regarding this potential problem. Similar study carried out by Naeem S.S has shown high prevalence.[18]

Some international studies have reported variables results on this issue. Al Hassan M.B conduced study in Nigeria and reported prevalence of HBV 1.5% and other study has revealed HBV in 2.0% patients.[19,20]

Ibraheem A.M et al has reported prevalence of HBV & HCV 0.7% and 0.4% respectively which is lesser than our study while Venkataia Y et al has shown prevalence of HBV 1.77% comparable to our study.[21,22]

Various predisposing risk factors have been documented for HBV & HCV in our patients. These risks factors are relative being co-related with history in response to questionare. In both HBV & HCV based on history surgical procedure, blood products transfusion and dental extraction were significant predisposing risk factors. Non use of disposable syringes, barber shop routine shave were also contributory factors in the spread as observed.

Professional blood donors had been pointed out to be significant risk factor in spread of HBV.[23] Local study has noticed various predisposing risk factors for transmission of HBV & HCV in community based survey. These factors are

nearly comparable to our results.[24]

Some international studies have identified multiple predisposing risk factors like major and minor surgical procedure, dental extraction and blood transfusion being comparable to our study.[25]

Unsterilized needles used by quacks have been co-related with transmission of HCV to high extent in community.[26]

Blood transfusion is a major risk factor in spread of HBV and HCV as obvious from various studies. Efforts are required to eliminate transfusion paid donors and to improve the safety of blood supply.[27]

Sterilized blades and razors should be used by barbers. Their unsterilized use has been documented to be contributory factor in transmission of hepatitis B & C viruses in community.[28]

High prevalence of risk of infection with HBV and HCV is associated with history of surgery, so it needs that safety parameters for surgical procedures should be improved to the standard.

CONCLUSION

HBV and HCV are potentially grave problems for the community.HCV is more prevalent than HBV. The prevalence is boosting up. Screening of all patients for surgery must be done. Public awareness programmes should be carried out utilizing all means. Electronic as well as print media should play a significant role in this noble deed. Regular seminars for general public and health workers should be held.

REFERENCES

1. Khokhar N. Gill ML, Malik GI. **General Seroprevalence of hepatitis B and C infection in the population.** J Coll Phys Surg Pak 2004; 14:534.
2. Hepatitis B. **Fact sheet No 204, Geneva, World Health Organization: 200 C.** (www.who.int/media.centre/fact sheet/fs 164/en access 31 May 2004.S
3. Shepard CW, Finelli L and Alter MJ. **Global epidemiology of hepatitis C virus infection.** Lancet Infec Dis 2005, 5 (9): 558-67.
4. Dubois F, Decenclos JC, Merriote N, Condean **A and the collaboration study group. Hepatitis C in a French population based surgery, 1994. Seroprevalence surgery of viremia, genotype distribution and prognostic risk factors.** Hepatol, 1997; 25(6):1490-1496., doi:10.1002/hep.510250630.
5. Yousaf A, Mahmood A, Ishaq M, Yousaf M. **Can we afford to operate on patients without HBsAg screening?** J Coll Phy Surg Pak.1996; 9:98-100.
6. Malik IA, Luqman M, Ahmad A et al. **The serological markers of hepatitis A & B in healthy population in Northern Pakistan.** J Pak Med Association.1988; 38:69-72.
7. Umer M, Bushra HT, Shoaib A ,et al. **Spectrum of chronic liver disease due to HCV infection.** J Coll Phy Surg Pak 1999; 9(4):185-186.
8. Qureshi H, Arif A, Riaz K et al. **Determination of risk factors for HBV&HCV in male patients suffering from chronic hepatitis.** BMC Research Notes 2009; 2:212.
9. Ali SA, Donahue RMJ, Qureshi H, Vermund Sh. **Hepatitis B and hepatitis C in Pakistan prevalence and risk factors** Int J Int fect Dis 2009,13:9-19.
10. Chaudhry IA, Khan SA. **Should we do Hepatitis B & C screening on each patient before surgery.** Pak J Med Sci, 2005; 21(3):278-280.
11. Smelzer SC , Bare BG, **Brunner and Suddarth's Textbook of Medical Surgical Nursing,** Lippincott Williams &Wilkins, Philadelphia, USA, 2003.
12. Ghavanini AA,Sabir MR. **HBsAg andante HCV AB among blood donors in Islamic Republic Of Iran.** Eastern Mediterranean Health Journal 2000; 6:1114-16.
13. Masood Z, Jawaid M etal **Screening for HBV&HCV a routine preoperative investigation?** Pak J Med Sci OCT-DEC 2005 Vol,21 No 4-455-459.
14. Khan SB, Alam M, Khan MA, Marwat M et al. **Frequency & risk factors of hepatitis B & C virus infection in patients undergoing cataract surgery.** Gomal J Med Sci July- 2013; 11:155-158.
15. Tahir MA, Cheema A,Tareen S. **Frequency of hepatitis B&C in patients undergoing cataract surgery in tertiary care centre.** Pak J Med Sci 2015;31(4):895-898.
16. Nandrejo KM, Qureshi MA, Sahtoo AA, Siddique SJ. **Prevalence of HBC & HCV in patients undergoing cataract surgery at eye camp.** Pak J Ophthalmol 2011; 27(1):27-29.

17. Huda W, Jameel N, Fasih U, etal. **Prevalence of Hepatitis B & C in urban patients undergoing cataract surgery.** Pak J Ophthalmol. Vol 29 No 3 July-Sep 2013.

18. Naeem SS, Siddique EU,Kazi AN, et al. **Prevalence of HBC & HCV among preoperative cataract patients jn Karachi.** Naeem et al. BMC Research Notes 2012, 5:492.

19. Alhassan MB, Unung P, Adejor GO. **HIV & HBsAg seropositivity among patients presenting for ocular surgery at a tertiary eye care hospital in Nigeria.** The Open Ophthalmology Journal, 2013, 7.18-19.

20. Okoye O, Eze B, Ogbonnaya C et al. **Prevalence and associations of HBC Seropositivity in a Rural African Ophthalmic Surgical Population.** Open Journal Ophthalmology, 2016, 6,6-11.

21. Ibraheem AM, Mohiadeen FA, Babakir-Mina M **Prevalence, Knowledge and practices of HBC&HCV among patients undergoing surgery in Sulaimani City.** J Rare Disord Diagn Ther.2016,2:6.

22. Venkataiah Y, Lakshmi VV,Sreelakshmi G. **Importance of Screening for HBV& HIV in cataract surgery cases.** International Journal of Recent Scientific Research.Vol.6 Issue, 7, pp5268-5271, July,2015.

23. Ahmed M. **Hepatitis B surface antigen study in professional and volunteer blood donors.** Ann Abbasi Shaheed Hospital Karachi. Med Dental Coll. 2001;6:304–6.

24. Majid A, Khan MS, Ullah S. **Rising prevalence of Hepatitis B and C and risk factors at District Head Quarter Teaching Hospital Bannu. Khyber-Pakhtunkhwa.** Journal of the College of Physicians and surgeons Pakistan 2010, Vol. 20 (7): 492 – 493.

25. Ayele AG, Gebre-Selassie S. **Prevalence and risk factors of hepatitis B and hepatitis C virus infections among patients with chronic liver diseases in public hospital in Addis Ababa, Ethiopia.** Hindawi Publishing corporation ISRN Tropical medicine volume 2013. Article ID 563821.

26. Simonsen L, Kane A, Lloyd J, Zaffran M, Kane M. **Unsafe injections in the developing world and transmission of bloodborne pathogens: A Review.** Bull World Health Organ 1999; 77:789 – 800.

27. Luby S, Khanani R, Zia M, Vellani Z, Ali M, Qureshi AH, Khan AJ, Abdul Mujeeb S, Shah SA, Fisher-Hoch S. **Evaluation of blood bank practices in Karachi, Pakistan, and the Governments response.** Health Policy Plan 2000; 15:217 – 222.

28. Janjua NZ, Nizamy MA. **Knowledge and practices of barbers about hepatitis B and C transmission in Rawalpindi and Islamabad.** J Pak Med Assoc 2004; 54: 116 – 119.

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