Original Article

Prevalence of Hepatitis B & C at Tehsil Headquarter Hospital in Cataract Surgery Patients

Muhammad Yasser Nisar, Taseer Salahuddin

Pak J Ophthalmol 2017, Vol. 33, No. 2

See end of article for authors affiliations

Correspondence to:
Dr. Taseer Salahuddin
DOMS
Eye Specialist
Consultant Ophthalmologist
at THQ Khanpur
E.mail:
salahuddin.taseer@gmail.com

Purpose: To investigate the prevalence of hepatitis B & C in the patients admitted for cataract surgery at THQ Khanpur.

Study Design: Cross sectional study.

Place and Duration of Study: Tehsil Headquarter Hospital, Khanpur from December 2015 till December 2016.

Material and Methods: Patients were informed and tested for hepatitis B and C via diagnostic tests for surface antigen HBsAg (Hepatitis B) and anti HCV (C). Based on the positive results determination of prevalence of hepatitis B, C or both was done. Patient information was recorded on performa and analyzed.

Results: 50 patients were operated for extracapsular cataract extraction (ECCE) at THQ Khanpur during the period of last one year. Mean age of the patients was 57 years. Out of 50 patients 27 were females (54%) and 23 were males (46%). Out of 50 patients, 7 (14%) suffered from hepatitis B, 8 (16%) from hepatitis C and 3 (6%) from both hepatitis B & C simultaneously. Thus, 18 out of 50 (36%) patients were positive for either disease.

Conclusions: Incidence of Hepatitis B and C was higher than the average prevailing rates in Pakistan both in males and females. Percentage in males was higher than females in the sample.

Keywords: Hepatitis B, Hepatitis C, Extra-Capsular Cataract Surgery.

There are multiple variants of hepatitis resulting from different stands of viruses namely A, B, C, D and E. They result in liver cirrhosis and hepatocellular carcinoma[1]. Hepatitis caused due to virus strand B (a DNA virus) is a virus that is life threatening. Incidence of this type of hepatitis is very high with 3 million people being carriers, 2 billion being affected at some stage of their lives and one million dying due to it[2]. Although this disease prevails at global level, however, its occurrence is highest in Asia, Africa and Middle East[3]. High prevalence of hepatitis C has been recorded by World Health Organization WHO to be around 3% of global population or 120-170 million in numbers[4]. Incidence of both Hepatitis B and C is increasing[5], which is an alarming situation. Both these types of hepatitis have same modes of transmission, including prenatal transmission, blood transmission, sexual contacts, drug abuse and use of infected surgical instruments[6]. Hospitals, both private and public ones where B & C screening is not being done especially before surgeries are potential threat in spreading these types of hepatitis[7]. Awareness and knowledge for causes and limiting factors of hepatitis B and C are limited in rural areas and primary health care centers[8]. Prevalence of hepatitis B is 10%[9] and C is 4-7%[10,11] in Pakistan. Realization of the fact that lack of facilities, screening practice and knowledge leads to spread of these diseases in patients also risking surgeons and operating room staff, has led to increased focus of research towards recording the incidence of hepatitis B and C in urban areas[13]. However, in primary care centers in Pakistan there still is a need for research and focus to the screening and recording the occurrence of these types of hepatitis needs to be done. Current research helps to fill this gap both from literature as well as quantitative point of view.

MATERIAL AND METHODS

This was an cross sectional study carried at THQ hospital Khanpur, district Rahimyar Khan, which is a secondary care hospital. Here for the very first time since the beginning of the hospital cataract surgery started last year due to the provision of surgical equipment by the punjab government. All the patients admitted for cataract surgery were included in the study. Patients who were admitted for other surgical procedures like pterygium or extraction of foreign body etc. were not included. Screening of Hepatitis B and C was kept as a necessary step before surgery. Each patient was informed and record was kept on the surgery record register of the surgeon. During one year 50 surgeries were done. All infected patients were referred to medical specialist for treatment and all those who had not been vaccinated were advised for vaccination. Furthermore, separate surgical sets were marked for both types of hepatitis and for each infected patient same type of labeled surgical sets were used. This was done to prevent further spread of these diseases during surgeries. Surgeon and O.T staff took proper precautions for self-safety as well.

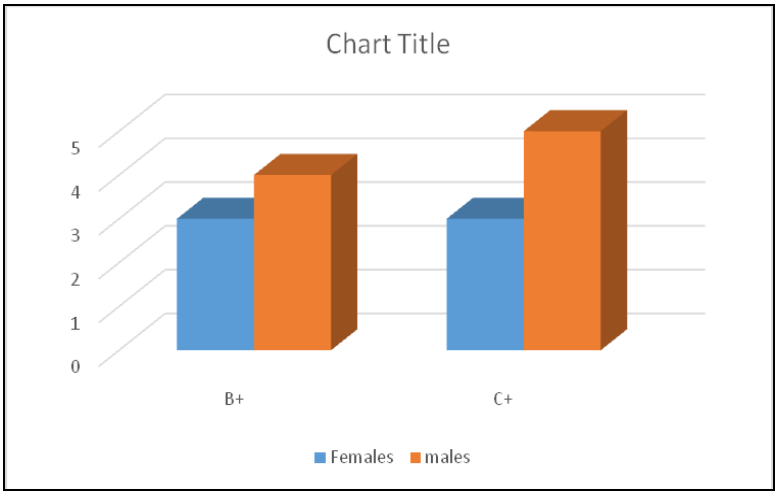
RESULTS

As mentioned earlier a total of 50 patients were operated out of which 27 were females and 23 were males. During analysis following gender distribution of HbsAg and anti-HCV were observed.

There was a clearly high incidence of B (17.3%) and C (21.73%) separately in males as compared to females (11.11%) respectively. When simultaneous incidence of both the types of hepatitis was seen, a comparatively high percentage (7.04%) of females suffered as compared to males (4.34%).

Along with the incidence of disease non-infected cases observed were higher in females as compared to males. 70.37% of females were not infected whereas only 56.52% were not infected. This showed an alarmingly high concentration of males (almost 45%) who were infected by HbsAg and anti-HCV.

Gender distribution of Hepatitis B & C					
Gender	**Total**	**Not infected**	**B+**	**C+**	**Both B & C**
Females	27	19 (70.37%)	3 (11.11%)	3 (11.11%)	2 (7.04%)
Males	23	13 (56.52%)	4 (17.39%)	5 (21.73%)	1 (4.34%)

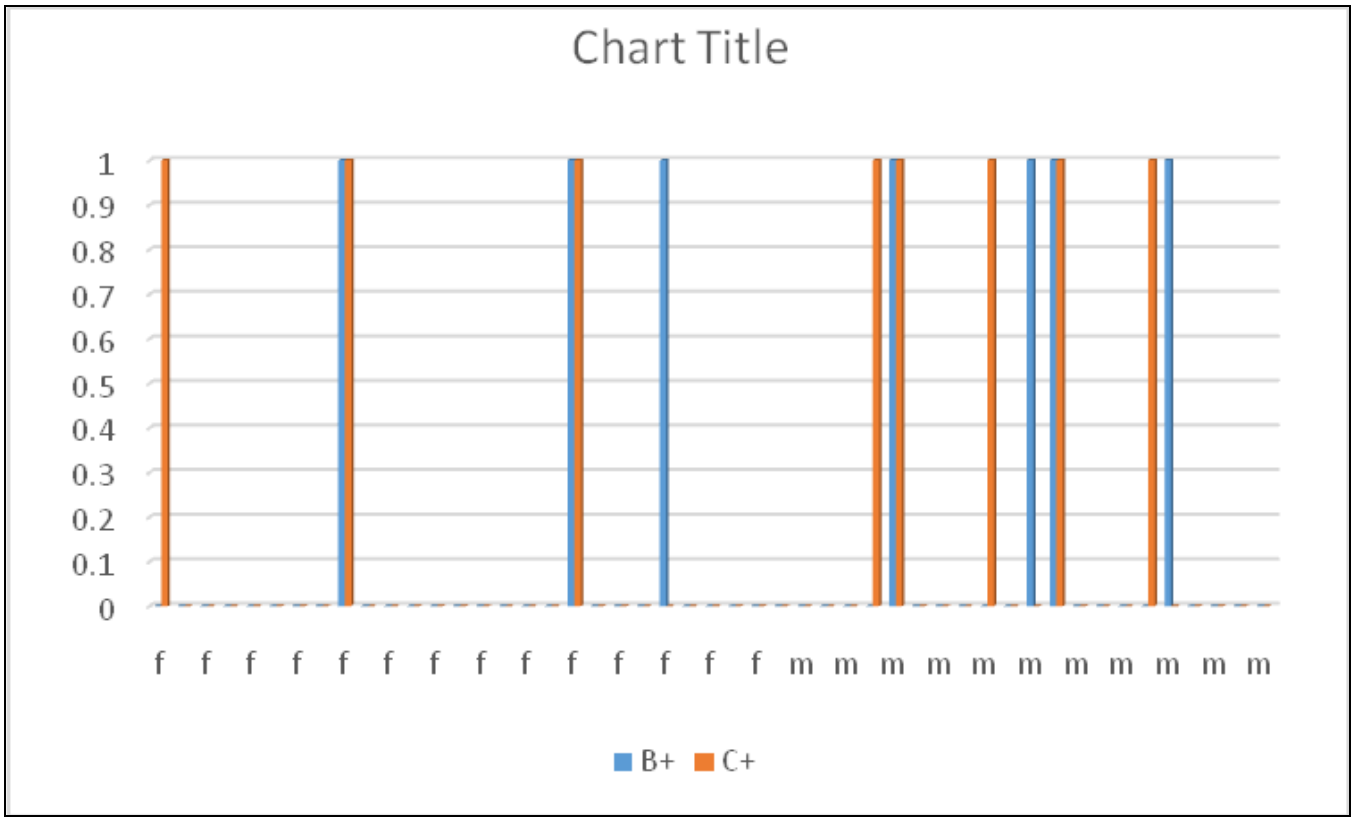


Same situation is evident when a comparative bar chart for genders was drawn for both Hepatitis B and C.

Furthermore, a detailed position chart also showed the concentration of more colored columns of hepatitis B and C in male region as compared to females.

Same was tested for association by running two slightly different versions of the chi-square procedure in Minitab version 14, which gave results for the gender and over all hepatitis B and C prevalence. Results reported by Minitab showed a *p*-value of 0.000, which begin **below** 0.05 is

Pearson Chi-square = 54,367, DF = 1, P-Value = 0.000



Likelihood Ratio Chi-Square = 51.298, DF = 1, P-Value = 0.000

statistically significant. This means that gender and hepatitis B & C prevalence are related in a larger population.

DISCUSSION

Hepatitis B and C increasing incidence is an emerging problem for developing countries like Pakistan. This issue further aggravates in primary and secondary health care centers due to lack of proper protocols and awareness, which is a result of unsafe medical practice[13]. In our study a cross gender comparison has been done to investigate the difference between incidence of hepatitis B & C. Within Pakistan incidence of HbsAg is around 10%[14]. Our study has shown this incidence higher in both females (11.11%) and males (17.39%). This higher incidence in males as compared to females was also observed in another study by Riaz et al[13]. However, for their study B+ prevailed in 7.4% cases as compared to 7% of females. Similarly, for C positive their results were showing same trends with much less percentages. As for their results C positive females were 11.2% of the sample and males were 12.6%, whereas according to our results 11.1% of females were C+ whereas as high as 21.73% males were C positive. Overall 18 out of 50 (36%) of the sample was B and C positive. This is more than three times higher than previously recorded results[9,10,11,12,13]. It is therefore, of utmost importance that government pays special attention to this medical issue at Khanpur. This study also highlights the importance of further investigation of causes of such high incidence of Hepatitis B and C at Khanpur. There is also room of exploration of similar studies in other primary and secondary health care hospitals to see if same trend exists there.

In another study by Abbas Z et al[10] a cross-sectional survey having 873 subjects belonging to 174 families residing in Jarwar, a small town of upper Sindh was done. HBsAg was reactive in 44 (5%), HBcAb in 494 (56.6%) and anti-HCV in 294 (33.7%). In the case control study, independent risk factors for exposure to hepatitis B were male sex, age greater than 16 years, absence of vaccination, previous history of jaundice, and family history of liver disease. Independent risk factors for hepatitis C were age greater than 16 years, previous dental procedures, history of liver disease, lack of vaccination, and 10 or

more injections in a year. There was indication of intrafamilial and household clustering: for hepatitis C, parent to child p = 0.001, sibling-to-sibling p = 0.046; for hepatitis B, spouse-to-spouse p = 0.052 and parent to child p = 0.001.

Proper screening and protocols for limiting the spread of these diseases at least via surgical procedures was followed at our hospital . This sets an example for other primary and secondary health hospitals in Pakistan where safe medical procedures and screening are not being followed. As transmission of HbsAg and anti-HCV is common via injections, needle pricks and surgical malpractices[15-20].

CONCLUSION

Hepatitis B and C have multiple transmission modes, out of which lack of screening before surgical processes and unsafe surgical procedures are important ones. If proper protocols of screening and separating surgical instruments are followed there will be vast reduction in spread of these diseases. Furthermore, practical application of screening tests and patient counseling by the surgeons and medical staffs can be the best awareness scheme for the prevention of both hepatitis B and C spread.

Authors Affiliation

Dr. Muhammad Yasser Nisar
DOMS
Eye Specialist
Consultant Ophthalmologist
THQ Khanpur

Taseer Salahuddin
Mphil, PhD Scholar
National College of Business
Administration & Economics
Independent researcher

Role of Authors

Dr. Muhammad Yasser Nisar
Data collection and Literature Review

Taseer Salahuddin
Manuscript writing and data analysis

REFERENCES

1. Mahale P, Torres HA, Kramer JR, Hwang LY, Li R, Brown EL, Engels EA. Hepatitis C virus infection and the risk of cancer among elderly US adults: A registry-based case-control study. Cancer 2017; 123(7):1202-1211.
2. **Fu-Sheng Wang, Jian-Gao Fan, Zheng Zhang, Bin Gao, and Hong-Yang Wang.** The Global Burden of Liver Disease: The Major Impact of China. 2014, Hepatology Volume 60, Issue 6.
3. **Ali A Mokdad, Alan D Lopez, Saied Shahraz, Rafael Lozano, Ali H Mokdad, Jeff Stanaway, Christopher JL Murray and Mohsen Naghavi.** Liver cirrhosis mortality in 187 countries between 1980 and 2010: a systematic analysis *BMC Medicine* 2014 **12**: 145.
4. **Mohamed AA, Elbedewy TA, El-Serafy M, El-Toukhy N, Ahmed W, Din El Din Z.** Hepatitis C virus: A global view. World J Hepatol. 2015; 7 (26): 2676–80.
5. **Caccamo G, Saffioti F, Raimondo G.** Hepatitis B virus and hepatitis C virus dual infection. *World Journal of Gastroenterolog : WJG*. 2014; 20 (40): 14559-14567.
6. Tseng TC, Kao JH. Elimination of Hepatitis B: Is it a mission impossible? BMC Med 2017;15(1):53.
7. **Pozzetto B, Memmi M, Garraud O, Roblin X, Berthelot P.** Health care-associated hepatitis C virus infection. *World Journal of Gastroenterology: WJG*. 2014; 20 (46): 17265-17278.
8. **Chaudry IA, Khan SA, Samiullah**. Should we do Hepatitis B and C screening on each patient before surgery. Pak J Med Sci. 2005; 21 (3): 278–280.
9. **Wallace J, Pitt,s M, Liu CG, Lin V, Wei L, Richmond J, Locarnini S.** Needs assessment of people with viral hepatitis – China. (ARCSHS Monograph Series No. 105), Melbourne: Australian Research Centre in Sex, Health and Society, La Trobe University. ISBN: 9781921915734 The Summary Report and Full Report are available at http://www.latrobe.edu.au/arcshs/publications
10. **Abbas Z, Jeswani NL, Kakepoto GN, Islam M, Mehdi K, Jafri W.** Prevalence and mode of spread of hepatitis B and C in rural Sindh, Pakistan. Trop Gastroenterol. 2008; 29: 210-6.
11. **Sarwar J, Gul N, Idris M, Rehman A, Farid J, Adeel MY.** Seroprevalence of hepatitis B and Hepatitis C in health care workers in Abbottabad. J Ayub Med Coll Abbottabad, 2008; 20: 27-9.
12. **Khan AJ, Luby SP, Firkee F, Karim A, Obaid S, Dellawala S, et al.** Unsafe injections and the transmission of hepatitis B and C in a periurban community in Pakistan. Bull World Health Organ, 2000; 78: 956-63.
13. **Riaz S, Khan MT, Mehmood K, Akhtar S.** Frequency of Hepatitis B & C in Previously Unscreened Patients admitted for elective cataract surgery. International Ophthalmology with Opthalmic & General Sciences, 2016; 14 (4): 128-130.
14. **Chaudry IA, Khan SS, Majrooh MA, Alvi AA.** Sero prevalence of hepatitis B and C among the patients reporting at surgical OPD at Fauji Foundation hospital Rawalpindi. Pak J Med Sci. 2007; 23: 514-17.
15. **Talpur AA, Ansari AG, Awan MS, Ghumro AA.** Prevalence of hepatitis B and C in surgical patients. Pak J Surg. 2006; 22 (3): 150-153.

16. **Daudpota AQ, Soomro AW.** Sero prevalence of hepatitis B and C in surgical patients. Pak Med Sci. 2008; 24: 483-4.
17. **Bialek SR, Bower WA, Mottram K, Purchase D, Nakano T, Nainan O, Williams IT, Bell BP.** Risk factors for hepatitis B in an outbreak of B and D among injection drug users. J Urban health, 2005; 82: 468-78.
18. **Yazdanpanah Y, De Carli G, Migueres B, Lot F, Campins M, Colombo C, et al.** Risk factors for hepatitis C virus transmission to healthcare workers after occupation exposure: A European case control study. Clin Infect Dis. 2005; 41: 4123-30.
19. **Cholongitas E, Sezolo M, Patch D, Kwong K, Nikolopoulou V, Leandro G, et al.** Risk factors, sequential organ failure assessment and model for end-stage liver disease scores for predicting short term mortality in cirrhotic patients admitted to intensive care unit. Aliment Pharmacol Ther. 2006; 23: 883-93.
20. Wait S, Kell E, Hamid S, Muljono DH, Sollano J, Mohamed R, Shah S, Mamun-Al-Mahtab, Abbas Z, Johnson J, Tanwandee T, Wallace J. Hepatitis B and hepatitis C in southeast and southern Asia: challenges for governments. Lancet Gastroenterol Hepatol. 2016; 1(3):248-255.