ORIGINAL ARTICLE

Hepatitis C is more Common than Hepatitis B among Surgical Patients and Previous Surgery is the most common Risk Factor

KHALID JAVED, ZAHRA ISHRAT, NIGHAT SULTANA, *FARIDA NAZ, ANJUM ANWAR*

ABSTRACT

Objective: To find out the seroprevalence of hepatitis B and C and their risk factors among the surgical patients.

Methodology: This is a prospective observational study carried out from May 2008 to October 2008 on 1155 patients admitted in the surgical departments of Mayo Hospital, Lahore and Obstetrical & Gynaecological Departments of Sir Ganga Ram Hospital, Lahore. Patients of either sex, of all ages undergoing surgery with no previous history of hepatitis B and C or chronic liver disease were included in the study. All patients underwent screening for Hepatitis B and C.

Results: Prevalence of hepatitis B is 1.73% and seroprevalence of hepatitis C is 9.09%, while 0.43% were positive for both hepatitis B and C. Among risk factors, previous surgery is the most common risk factor. Among positive patients 5.8% had previous surgeries and 4.32% gave history of blood transfusion, history of dental extraction was present in 0.6% and liver functions were deranged in 1.03%.

Conclusion: Hepatitis C is more common than hepatitis B among surgical patients with the most common risk factor as history of previous surgery. Therefore, preoperative screening of patients for hepatitis B and C should be mandatory and all preventive measures should be adopted to prevent further spread of these viral infections.

Key words: Prevalence, hepatitis B, hepatitis C

INTRODUCTION

Hepatitis B and C is one of the major health problem worldwide especially in developing and underdeveloped countries due to lack of community health education, illiteracy and poverty. It is responsible for significant morbidity and mortality in these countries[1].

World Health Organization estimates that about two billion people have been infected with hepatitis B virus and 350 million have chronic life long infection[2]. In Pakistan this number is estimated around 7 million with a 5% reporting rate[3,4]. HBV infection may lead to either persistent infection or a carrier state. It may progress to chronic liver disease or hepatocellular carcinoma.

The prevalence of hepatitic C is higher and varies from 0.5% to 29% in different part of the world and it is estimated that about 170 million people are chronically infected while three to four million people are newly infected every year[5], and are at the risk of developing liver cirrhosis or hepatocellular carcinoma.

Department of Anaesthesia, Fatima Jinnah Medical College/ Sir Ganga Ram Hospital, Lahore
Department of Anaesthesia, King Edward Medical University/ Mayo Hospital, Lahore
Correspondence to Dr. Khalid Javed, Associate Professor Email: butt fjmc @ yahoo.com.

Both of these infections present with malaise, anorexia, abdominal pain and jaundice but sometime there are no symptoms till the development of cirrhosis, portal hypertension, oesophageal varices, ascites, encephalopathy or liver malignancy[6,7]. Majority of these patients are asymptomatic and pose great danger of spreading these infections to the society and medical personnel particularly[8].

Pakistan has huge burden of these viral diseases, the common risk factors are blood transfusion, haemodialysis, thalassemia, use of unsterilized syringes, barber shaving, tattooing, injury with contaminated sharp instruments and sexual abuse[8,9].

Hepatitis B virus circulates in high titres in blood and lower titres in other body fluids and is hundred times more infections than HIV infections and ten times more than HCV[10]. Chances of surgeons[11] contracting hepatitis B infections are 1%. In another study[12] HCV transmission to anaesthetist through accidental exposure is 2%.

The objective of this study is to find out the prevalence of hepatitis B and C and their risk factors among the surgical patients.

PATIENTS AND METHODS

This study was conducted in the surgical patients of Mayo Hospital, Lahore, obstetrical and gynaecological patients of Sir Ganga Ram Hospital,

Lahore from May 2008 to October 2008. All the patients undergoing surgical procedure were screened for hepatitis B and C using ICT KIT method. Patients were asked about previous history of jaundice, surgery, blood transfusion, intravenous injections, dental extraction, barber shave and history of jaundice in family. Patients who were known to be positive for hepatitis B and C in past were excluded from the study.

Liver function tests, prothrombin time and abdominal ultrasound of all positive cases were also done All the information were entered on a proforma and were analyzed statistically at the end of study.

RESULTS

During the study period 1155 patients (age ranging from 6 years to 80 years) which included 83 male and 1072 female were screened. Hepatitis B and C was present in 130(11.3%) patients. Hepatitis C is more common than hepatitis B. One hundred and five (9.09%) patients were found to be positive for hepatitis C while 20(1.73%) were positive for hepatitis B. only 5(0.43%) patients were positive for both hepatitis B and C.

Table 1: Prevalence of hepatitis B and C of 1155 screened patients.

	=n	%age
Hepatitis B	20	1.73
Hepatitis C	105	9.09
Hepatitis B & C	05	0.43

Table 2: Risk factors of hepatitis B and C among 130 positive patients

Risk Factors	=n	%age
Previous surgery	67	5.80
Blood transfusion	50	4.32
Dental work	7	0.60
Deranged LFT	12	1.03

Among risk factors, previous surgery is the most common risk factor. Among positive patients 67(5.8%) had previous surgeries and 50(4.32%) gave history of blood transfusion, history of dental extraction was present in 7(0.6%) patients and liver functions were deranged in 12(1.03%) patients.

DISCUSSION

Viral hepatitis is a serious global health problem. Prevalence rates in developing and underdeveloped countries are much higher as compared to developed countries. Poor knowledge and lack of awareness about hepatitis B and C virus among the general public is the main cause of its rapid spread in our country[1,13].

Common cause of chronic hepatitis, liver cirrhosis, and hepatocellular carcinoma is hepatitis B virus all over the world. Common modes of transmission of hepatitis B virus are blood transfusion, injury with contaminated sharp instruments, infected needle stick injuries, sexual contacts and perinatally from mother to newborn. HBV infection is more prevalent in drugs addicts and in those patients who received multiple blood transfusion e.g., thalassemia patients[10].

About 5% of patients with HBV infection become chronic carrier and a high rate of hepatocelluar carcinoma occur in chronic carrier[14].

Prevalence of hepatitis B in Pakistan is reported from 2.8% to 10% in different studies conducted at different places in the past[15,16].

Seroprevalence of hepatitis B in our study is 1.73%, lower than reported by Chaudhry et al[17] and Shah NH[15], they reported as 2.11% and 2.5% respectively.

Hepatitis C virus was first identified in 1988[18]. Since then it has become a major health issue world wide. HCV spread almost through the same manner but the risk of transmission through needle stick injury is less than HBV and more in drug users[10].

Seventy five percent of the patients with HCV become chronically infected and among them about 10% develop chronic active hepatitis, cirrhosis or hepatocellular carcinoma. Due to its long asymptomatic course it is often neglected[14].

The seroprevalence of hepatitis C in Pakistan varies from 3% to 7% in different studies conducted in the past[19]. Seroprevalence of hepatitis C observed in our study is 9.09% which is lower than that observed by Chaudhry et al[17] and Talpur AA[16], they reported as 11.26% and 11.6% respectively in their studies. Khan et al[19] from Mardan have reported prevalence of HCV as 9% which is similar to 9.09% observed in our study.

Chaudhry et al[1] also conducted another study among patients reporting in surgical OPD of Fauji Foundation Hospital, Rawalpindi during 2006. They screened 2056 patients and found prevalence of hepatitis B as 2.8% and seroprevalence of hepatitis C was 7.56%.

Our study of risk factors for HBV and HCV transmission showed that among positive patients (5.8%) had previous surgeries and 4.32% gave history of blood transfusion. History of dental extraction was present in 0.6%.

In a study conducted by Daudpota et al[20] in 2007, they found that among positive patients 14.28% had previous surgeries and 5.7% gave history of blood transfusion in the past which is quite similar to our study.

The risk factors for hepatitis B and C in a study conducted by Talpur et al[16],are previous hospitalization in 3.2% and history of blood transfusion in 25% of positive cases.

Mohammad N, Jan MA conducted a study and they found that the risk factors in hepatitis B and C transmission were major surgery in 6.92%, previous blood transfusion 1.06%, dental procedure 9.72% and shaving by community barbers in 44.2% of positive cases[18].

In a study conducted by Masood et al[21], 387 patients admitted for elective surgery. After screening they found that 6% of the patients were positive for both HBV and HCV that is much higher than 0.43% in our study. There is insignificant data in literature regarding co-infection of hepatitis B and C virus. They also reported in their study that 6.5% of patients were positive for HBV and 11.3% were positive for HCV. Risk factors in the study included reuse of contaminated syringes, surgical instruments and blood products.

High prevalence of hepatitis B and C among surgical patients in our study as well as other studies suggests that all patients undergoing surgery including dental procedure should be routinely screened for hepatitis B and C.

Previous surgery and history of blood transfusion still remain the most significant risk factor for acquisition of hepatitis B and C virus infections. More effective screening of blood donors and effective sterilization of all the surgical instruments can significantly reduce the risk of hepatitis B and C viral infection.

The following precautions are recommended to reduce the risk of transmission of HBV and HCV.

- Disposable equipment should be used when possible both for surgery and anaesthesia.
- Non disposable equipment should be decontaminated with 2% gluteraldehyde, washed with soap and water and left in gluteraldehyde for further 3 hours.
- Bacterial filters should be placed between tracheal tubes and anesthetic breathing system in all patients to prevent cross infection from patient with undiagnosed infection.
- All needles and other sharp objects should be disposed of in an appropriate tough disposable bin. Card board bins are unsatisfactory.
- Needles which have been in contact with patients must not be resheathed.
- In order to protect the theatre staff, it is further recommended that all should receive active immunization against hepatitis B. Gloves must be worn during performance of vene punctures, insertion of any intravascular cannula, during insertion or removal of airway and tracheal tubes.
- A plastic apron, mask and eyes protectants should be worn if substantial spillage of blood is anticipated.
- Equipments, notes and other articles must not be handled with contaminated gloves.
- Cuts and abrasions on hand should be covered with water proof dressing.
- If a needle stick injury or contaminations of a cut or abrasion occurs, bleeding should be encouraged, the skin washed thoroughly with soap and water.
- Single dose of hepatitis B immunoglobulin combined with active immunization is required immediately if an unprotected individual is inoculated with infected material.
- There should be policy by the government for protection of medical personnel who are exposed to these patients and there should be compensation for those who get infected during their services.

Keeping in view high frequency of hepatitis B and C in our country, health education of public regarding spread of infection through unscreened blood transfusion, reuse of syringes and other medical and dental equipment, avoidance of tattooing, ear and nose piercing from market, circumcision and shaving from the barbers and so on is extremely important to control its further spread.

CONCLUSION

Hepatitis C is more common than hepatitis B among surgical patients with the most common risk factors as history of previous surgery and blood transfusion.

Therefore preoperative screening of patients for hepatitis B and C should be mandatory and all preventive measures should be adopted to prevent further spread of these viral infections.

REFERENCES

1. Chaudhry IA, Khan SS. Seroprevalence of hepatitis B and C among the patients reporting in surgical OPD. Pak J Med Sci 2007; 23(4): 514-17.
2. Hepatitis B fcat sheet No.204. Geneva. World Health Organization; 200C (http/www.who.int/mediacentre/fact sheet/fs 164/en access 31 st May 2004)
3. Ali NS, Jamal K, Qureshi R. Hepatitis B vaccination status and identification of risk factors for hepatitis B in health care workers. J Coll Phys Surg Pak 2005;15(5): 257-60.
4. Qasmi SA, Aqeel S, Ahmed M. Detection of hepatitis B virus in normal individuals of Karachi. J Coll Phys Surg 20000;10(12): 467-9.

5. Hepatitis C Fact Sheet No.164. Geneva World Health Organization; 200C (http/www.who.int/media.centre/fact.sheet/fs 164en/accessed 31st May 2004).
6. Hayes PC, Sympson KJ, Garden OJ. Editors. Davidson Principles and Practice of Medicine; 19th ed. Philadelphia Churchill Livingstone; 2002.
7. Cuschieri SA, Steel RJC, Moosa AR editors. Essential surgical practice. 4th ed. London Arnold; 2002.
8. Choudhary IA, Khan SA, Samiullah. Should we do hepatitis B and C screening on each patients before surgery. Pak J Med Sci 2005; 21: 278-80.
9. Meri K, Maria E, Joanna M, Stelosis S et al. Prevalence of hepatitis B and C markers in high risk hospitalized patients in crete. BMC Public Health, Greece 2001; 1-17.
10. Levinson W, Jawetz E (eds) Hepatitis viruses. In: Medical Microbiology Immunology 7th edition McGraw Hill London 2003; 257-65.
11. Harpaz R, Seidlein LV, Averhoff FM et al. Transmission of hepatitis B virus to multiple patients from a surgeon without evidence of inadequate infection control N Engl J Med 1996; 334: 549-54.
12. Jackson SH, Cheung EC. Anesthesiol clin North America related articles links 2004; 22: 357-77.
13. Khokhar N, Grill ML, Yawar A. Interspousal transmission of hepatitis C virus. J Coll Physc Surg Pak 2005; 15(10): 587-9.
14. Friedman LS. Liver, biliary tract and pancreas; In: Tierney LM McPhee SJ, Papadakis MA (editors) Current Medical Diagnosis and Treatment. McGraw-Hill London 2004; 639-42.
15. Shah NH, Shabbier G. A review of published literature on hepatitis B and C prevalence in Pakistan. J Coll Phys Surg Pak 2002; 12(6): 368-71.
16. Talpur AA, Ansari AG, Awan MS, Ghumro AA. Prevalence of hepatitis B and C in surgical patients. Pak J Surg 2006; 22(3): 150-53.
17. Chaudhary IA, Khan SA, Samiullah. Should we do hepatitis B and C screening on each patients before surgery. Analysis of 142 cases. Pak J Med Sci 2005; 21(3): 278-80.
18. Muhammad N, Jan MA. Frequency of hepatitis C in Buner, NWFP. J Coll Phys Surg Pak 2005; 15(1): 11-14.
19. Khan MSA, Khalid M, Ayub N, Javed M. Seroprevalence and risk factors of hepatitis C virus in Mardan, NWFP. Rawal Med J 2004; 29(2): 57-60.
20. Daudpota AQ, Soomro AW. Seroprevalnece of hepatitis B and C in surgical patients. Pak J Med Sci 2008; 24(3): 483-4.
21. Masood Z, Jawaid M, Khan RA, Rehan S. Screening for hepatitis B and C. A routine pre operative investigation. Pak J Med Sci 2005; 21(4): 455-9.