

INCIDENCE OF HEPATITIS “B” IN PATIENTS UNDERGOING OPERATIVE PROCEDURES AT DHQ HOSPITAL FAISALABAD

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Abstract: The incidence of hepatitis B was determined in patients undergoing operative procedures in surgical wards of DHQ Hospital Faisalabad from 26 April to 28 July 2010. All the patients undergoing operative procedures were screened for hepatitis B. In the present study, a total of 620 preoperative patients were screened for hepatitis B among them 13 (2.09%) were positive for hepatitis B. The incidence of hepatitis B was 38.5% in females and 61.5% in males respectively. The results were compared with the previous study conducted in other areas of Pakistan. As comparisons, the result was somewhat similar to conducted study but also showed some variation on the other hand. Precautions were also suggested to protect the patients, patient family members, and medical personnel or? Who are at high risk. The present study suggested that all patients must be routinely screened for hepatitis B before going to surgery. Due to the high incidence of hepatitis B in this study, it is suggested that all patients who are admitted for any surgery must be screened for hepatitis B. Those patients who were found positive for hepatitis B by using simple assays like rapid chromatography immunoassay must be confirmed by ELISA technique. At the same time, there must be ways to aware people of hepatitis B. Such hepatitis patients must be operated in separate operation theaters to protect other patients who are at high risk.

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KEY WORDS: Hepatitis B, Incidence, Surgery.

INTRODUCTION

Viral hepatitis is a global problem and this malady has affected most parts of the globe. The word hepatitis "means inflammation of the liver" in which the liver is badly affected and unable to function properly (1). Viral hepatitis can be transmitted enterically, by direct contact with infected people's feces or consumption of fecally contaminated food, or water may result in an ample amount of virus entering through the oral route to cause infection and parenterally by transfusion of infected blood and body fluids (2). Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV).

HBV infects the human liver that can lead to inflammation called hepatitis, initially recognized as "serum hepatitis" (3). Hepatitis B infection, although recognized nearly 40 years ago with the identification of Australian antigens, remains a global health problem (4). Hepatitis B virus is a DNA virus

of a unique class when observed under transmission scanning electron microscope it appears as a double-shelled virus-like spherical particle 42nm in diameter. These particles circulate in large quantities in the blood of infected patients. Acute HBV infection is associated with inflammation of the liver with generalized symptoms including nausea, loss of appetite, vomiting, mild fever, body aches, and itchy skin that can ultimately progress toward jaundice. The symptoms can last for a few weeks to months and most infected individuals recover in a few weeks. The infected patients can develop chronic hepatitis that continues for more than 6 months. The immune system among these patients is incapable to eradicate the viruses which lead to liver scarring (cirrhosis) that end up in liver failure and/or liver cancer (5). The availability of the HBV vaccine protects non-infected individuals and therefore can limit the infection, transmission, and

hepatocellular carcinoma. Other preventive measures to avoid transmission include avoidance of unprotected sex, re-use of contaminated needles and syringes, and blood transfusions. The infants should be vaccinated as per the vaccination schedule whereas the health care professional clinical medical laboratory and blood bank staff dealing with blood and blood products must strictly follow the standard guidelines to minimize the risk of accidental needle injury. Routine screening procedures for blood and blood products before transfusion is helpful to reduce the potential risk of HBV transmission (6). Chronically infected patients with persistently increased serum alanine aminotransferase (ALT) levels and HBV DNA levels should be treated (7,8). The available drugs are unable to clear the infection however, decreasing or halting the viral replication can therefore minimize liver damage. The babies born to HBV-infected mothers may be treated with antibodies to the hepatitis B virus (HBV) (9).

Globally, there were around 350 million HBV-infected persons as reported in a study in 2004. The region-wise prevalence varies with more than 10% in Asia and less than 0.5% in the United States and Northern Europe (10). The prevalence of HBV infection varies between 2–7% in Russia, Eastern Europe, and Japan. South East Asia, China, and Africa have the highest prevalence rates, and HBV transmission during childbirth or childhood is foremost common (11).

The diagnosis of HBV infection includes the symptoms, physical findings, and blood tests for anti-viral antibodies, liver enzymes, and viral DNA (12). These tests not only help in diagnosis but also the prognosis during the treatment (5). Bilirubin level also increases in hepatitis patients from normal value (less than 1.2 mg/dL) (13).

The most important indicator of HBV infection is the presence of HBsAg in the plasma or serum of infected individuals.

HBsAg is routinely detected using Enzyme Immuno Assay (EIA) and was first described by Engvall, Perlmann, van Weemen, and Schuurs (14). The EIA is based on antigen-antibody reactions and the formation of color due to enzyme-substrate interaction (15). HBeAg is another marker that can be used to diagnose and monitor HBV infection.

Various studies have reported the prevalence of hepatitis B and C as 2.5% and 4.9% respectively in different areas of Pakistan. The prevalence of HBV infection is higher in Baluchistan province (4.3%) while hepatitis C is more common in Punjab (6.7%) and Sindh (5.0%). Certain districts in Punjab and Sindh have a very high prevalence ranging between 6% - 13% (5).

MATERIALS AND METHODS

Patients, who were admitted for elective surgery in surgical wards of District Head Quarter (DHQ) Hospital Faisalabad, were screened for hepatitis B. A total of 620 patients were screened for hepatitis B (ages ranging from 1 – 80). Among 620 patients, 354 patients were male and 266 were female.

A blood sample was drawn from the antecubital vein of the patient; the blood was placed in sample tubes and allowed to clot. The sera were separated from cells, stored, and tested within 72 hours using standard procedures in the biochemistry lab of DHQ Hospital, Faisalabad. Rapid chromatographic immunoassay was used to detect the presence of HBsAg in serum or plasma specimens. The patients who were positive for hepatitis B were confirmed by enzyme-linked immunosorbent assay (ELISA). The incidence of hepatitis B was determined by using statistical tools.

RESULTS

In this study, 620 patients, who were undergoing the operative procedure were studied for hepatitis B (Table 1).

HBsAg was positive in 13/620 (2.09%) patients. The incidence of hepatitis B was 38.5% (5/13) in females and 61.5 (8/13) in males which are also shown in Table 2.

During the study, it was felt that most of the patients were not aware of their disease of hepatitis B, but they did know when they were suggested by doctors to conduct a test for hepatitis before going for a surgical procedure.

Only about 15% of patients were aware and 85% were not aware which is also represented by Figure 1. In this study age was also considered, hepatitis B was highly prevalent in the age group ranging between 11- 20. The prevalence of HBV in other age groups is shown in Table 3. In this study, it is found that most young people are affected by hepatitis B. Use of contaminated syringes and unsterilized surgical instruments was the major cause of hepatitis B transmission. The incidence of hepatitis B was found high in males than in females according to my finding, which can be seen by the graphical representation shown in Figure 2.

DISCUSSION

The incidence of hepatitis B in this study is 2.09% in patients presenting for surgery. The incidence is high in males 8(61.5%) than in females 5(38.5%). Hepatitis B is highly prevalent in ages ranging between 11-20 years. This study it is concluded that most young people are affected by hepatitis B and the use of contaminated syringes and unsterilized surgical instruments are the major cause of hepatitis B transmission. The result of this study has been compared with a previous study conducted in other regions of Pakistan. The prevalence of hepatitis B was found as 2.02% in a study carried out among inpatients admitted to the Department of Orthopedics, Ayub Teaching Hospital Abbotabad, Pakistan.

A study carried out in the Department of Ophthalmology PMC Nawabshah the frequency of hepatitis B was 2.18% with higher rates among male as compared to females. In another study from Rawalpindi, Pakistan, the prevalence of Hepatitis B was found as 2.8%. These results are comparable with this conducted study. However, according to a study carried out at Jacobabad Sindh, the incidence of hepatitis B in surgical patients was 9.33%. The incidence of hepatitis B was 6.5% among admitted patients in a tertiary care hospital in Karachi, Pakistan. The reason may be the high population of Karachi and Sindh (16,17). The use of contaminated surgical instruments and the reuse of contaminated syringes-infected blood products were the risk factors reported in this study. They concluded that the incidence of HBsAg in hospitalized surgical patients is very high. They suggested that all the patients admitted for surgery must be screened routinely to avoid the spread of hepatitis. As comparisons, the results are somewhat similar to conducted study but also show some variation on the other hand (18,19).

CONCLUSION

Due to the high incidence of hepatitis B in this study, it is suggested that all patients who are admitted for any surgery must be screened for hepatitis B. Those patients who were found positive for hepatitis B by using simple assays like rapid chromatography immunoassay must be confirmed by ELISA technique. At the same time, there must be ways to aware people of hepatitis B. Such hepatitis patients must be operated in separate operation theaters to protect other patients who are at high risk.

ACKNOWLEDGMENTS

The authors are thankful to Dr. Shazia Anwar Bukhari and Dr. Muhammad Jamil.

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Table 1: Total patients investigated

No. of patients	620
Age group	01-80 years
Mean age	40 years
Male	354
Female	266

Table 2: HBV positive cases

Total No. of Patients investigated	620
HBV Positive	13(2.09%)
Male	8 (61.5%)
Female	5(38.5%)

Table 3: Age wise frequency of HBV

Age (years)	HBV Positive
1-10	Nil
11-20	6
21-30	4
31-40	3
41-50	Nil
51-60	Nil
61-Above	Nil
Total	13

