

# Seropositivity of Hepatitis B & C Virus in Surgical Patients Undergoing Elective & Emergency General Surgery at Pak Red Crescent Teaching Hospital

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## ABSTRACT

**Aim:** To assess the seropositive cases of hepatitis B & C in surgical patients admitted for both emergency & elective surgery.

**Methodology:** This study was conducted in the surgery department of Pak Red Crescent Teaching Hospital. The design of the study was descriptive observational. All the 1238 patients undergoing emergency and elective surgery were enrolled in this study by convenient sampling. Demographic data of all the patients were recorded. Along with routine preoperative tests, all the patients were screened for hepatitis B & C virus infection. Immunochromatography (ICT) method was adopted for both HBsAg and Anti-HCV screening. In patients with week positive results further test of enzyme-linked immunosorbent assay (ELISA) was performed. Operation theater staff and surgeon were informed about seropositive patients to take special precautionary measures during handling of the sharp objects. Biological waste of such patients is disposed of by using Biosafety protocols. Demographic data along with risk factors, HbsAg & Anti-HCV status were collected and analyzed with Microsoft Excel 2019.

**Results:** A total number of 1238 patients were enrolled in our study, out of them 708 were male and 530 were female. Average age of the patients was 40.05±16 years. Out of 1238 patients, HBV was found in 14(1.13%) patients and HCV was found in 121 (9.77%) patients both hepatitis B & C was found in 3(0.24%) patients.

**Conclusion:** Preoperatively screening of hepatitis B and C should be performed mandatory in all patients regardless of the nature of surgery. Before operating seropositive patients, surgeon and operation theater staff should be informed to take precautionary measures while handling the sharp objects. Used infected material of such patients should be disposed of by using Biosafety protocols. All the health works must be vaccinated against hepatitis B virus.

**Keywords:** Hep B infection, Hep C Infection, Seropositive.

## INTRODUCTION

The hepatitis B (DNA) virus was first discovered by Blumberg<sup>1</sup> in 1963 and Hepatitis C (RNA) virus was discovered in 1989. Hepatitis B virus causes a life-threatening infection of the liver (fulminant hepatitis)<sup>2</sup>. Hepatitis B viral infection also cause chronic infection and puts the patient at high risk of death from cirrhosis and liver cancer. Hepatitis C virus can cause both acute and chronic infection. Most of acute hepatitis C viral infections are asymptomatic. Fortunately, spontaneously clearance of hep C virus upto 30% is seen within 6 months of the infection without any treatment. Rest of the individuals (70%) will eventually develop chronic HCV infection<sup>3</sup>. In 2019, the World Health Organization (WHO) estimated approximately 296 million individuals are suffering from chronic hep B viral infection and another approximately 58 million individuals are suffering from chronic hep C virus infection. WHO is estimated the rate of new infection in both hepatitis B & C is 1.5 million per year<sup>2,3</sup>.

Hepatitis B & C virus transmission spread by the reuse of infected syringes, needles, surgical blades, sharing of shaving blades etc. In underdeveloped countries transfusion of unscreened blood & blood products is another important risk factor. Piercing, tattooing and In health care setting, exposure to infected person saliva, seminal fluids, vaginal bleeding can also spreads the disease<sup>2</sup>. In 1992, an effective vaccine against hepatitis B was introduced with 98% to 100% protection<sup>2</sup>. Unvaccinated persons with multiple sexual partners are at high risk of getting hepatitis B virus<sup>2</sup>. Currently no vaccination is available for Hepatitis C virus infection. Although antiviral medicines are readily available against hep C infection even in under developed countries, such antiviral drugs have a cure rate of > 95%.

Hepatitis B & C is highly endemic in Pakistan and its incidence is on rise<sup>4,5</sup>. Majority of such cases are asymptomatic, health care workers specially surgeons and all operation theater staff are at high risk to get this serious infection. The most effective preventive measure to spread of infection to health care workers is identification of the asymptomatic seropositive patients. So, if we know preoperatively the viral status of the patient, we can take preventive measure to protect our staff. Our teaching hospital is situated in periphery of Lahore, Pakistan, where quackery and unhealthy barbers practice is at rise.

To best of our knowledge no such study is conducted in this area so, we decided to carry out a study to assess the seropositive cases of hepatitis B & C virus in our surgical patients admitted for both emergency & elective surgery.

## METHODOLOGY

This study was conducted from Jan 2020 to Sep 2021 in the surgery department of Pak Red Crescent Teaching Hospital. The design of the study was descriptive observational. Ethical review committee approved the study. All the patients undergoing emergency and elective surgery during above said period were enrolled in this study by convenient sampling Demographic data of all the patients were recorded. Along with routine preoperative tests, all the patients were screened for hepatitis B & C virus infection. Immunochromatography (ICT) method was adopted for both HBsAg and Anti-HCV screening. In patients with week positive results further test of enzyme-linked immunosorbent assay (ELISA) was performed. In Hepatitis B & C positive cases bleeding profile, liver function test and platelets counts were also checked. Operation theater staff and surgeon were informed about seropositive patients to take special precautionary measures during handling of the sharp objects (scalpel, hallow needles, solid needles, trocars, etc). Used infected material and biological waste

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of such patients is disposed of by using Biosafety protocols. Demographic data along with risk factors, HbsAg & Anti-HCV status were collected and analyzed with Microsoft Excel 2019.

## RESULTS

A total number of 1238 patients were enrolled in our study. Gender distribution is shown in table 1.

Table 1.

Male	708 (57.19%)
Female	530 (42.81%)
Total Number of Patient	1238

Table 2.

Gender	HBV Seropositive	HCV Seropositive	Both HBV and HCV Seropositive
Male	11 (78.57%)	47 (38.84%)	02 (66.67%)
Female	3 (21.43%)	74 (61.16%)	01 (33.33%)
Total	14 (1.13%)	121 (9.77%)	03 (0.24%)

Parenteral injection (24.64%) was found a highest risk factor followed by barbers shave (13.04%). Risk factors identified in total seropositive patients (n=138) are summarized in table 3.

Table 3.(n=138)

Risk Factor	n	%age
IV injections	34	24.64
Barbers Shave	18	13.04
Unprotected Sex	17	12.32
Blood Transfusion	14	10.14
Dental treatment	11	7.97
Previous Surgery	9	6.52
Drug Addict	2	1.45

Mean age of the patient was 40.05±16 years, median was 40, mode was 50, max age was 97 years and minimum age was 02 years. Out of 1238 patients 138 patients were seropositive. HBV was found in 14(1.13%) patients and HCV was found in 121(9.77%) patients both hepatitis B & C was found in 3(0.24%) of the patients. Segregation on basis of gender is given in table number (Table 2).

## DISCUSSION

Viral hepatitis is a major global health problem especially in underdeveloped countries<sup>6</sup>. Pakistan is also suffering from hepatitis B & C virus infections and its incidence is at rise<sup>4,5</sup>. Health care workers specially surgeons and operation theater staff are at high risk of such deadly infection, because they are more frequently exposed to infected blood, contaminated body fluids, sharp objects, hollow and solid needle sticks injuries during operation<sup>7,8</sup>.

In our study we try to see prevalence of hepatitis B & C preoperatively in emergency and elective surgery. We found HCV is more prevalent (9.77%) in our representative population than HBV (1.13%). The prevalence of HBV and HCV vary from one part to another in Pakistan<sup>9</sup>. However, to date reported incidence in Pakistan for HBV varies from 1.8% to 5.74% and HCV incidence varies from 1.2% to 12.8%<sup>9,10,11,12</sup>. Our results are consistent with other studies carried out elsewhere in the Pakistan.

Worth mentioning fact is that, all these patients were presented to department of surgery (whether in emergency or outpatient department) other than hepatitis symptoms. They were also not only unaware about their viral status but also having asymptomatic disease of hepatitis.

In rural areas low literacy rate, medical / dental quackery and barbers are spreading this disease<sup>13</sup>. In our study barbers shave 13.04% was found a highest risk factor followed by parenteral injection (24.64%).

## CONCLUSION

Due to high incidence of the hepatitis B & C, preoperatively viral screening should be performed mandatory in all patients regardless of the nature of surgery. Before operating seropositive patients, surgeon and operation theater staff should be informed to take special precautionary measures during handling of the sharp objects (scalpel, hollow needles, solid needles & trocar). Used infected material and biological waste of such patients should be disposed of by using Biosafety protocols. All the health works must be vaccinated against hepatitis B virus.

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