

# PREVALENCE OF HEPATITIS B AND C AND THEIR RISK FACTORS IN PATIENTS ADMITTED IN ORTHOPAEDIC UNIT

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## ABSTRACT

**Objectives:** To find out the prevalence of Hepatitis B and C and their risk factors in patient admitted in Orthopaedic unit of Khyber Teaching Hospital, Peshawar.

**Material and Methods:** This single centered descriptive study was carried out in Orthopaedic and Medical units of Khyber Teaching Hospital, Peshawar, from April 2007 to May 2009. All patients admitted to our unit were enrolled in the study. They were screened for hepatitis B and C by immunochromatography (ICT) Kit method. Those who were positive on ICT were confirmed by 3<sup>rd</sup> generation enzyme linked immunosorbent assay (ELISA) and polymerase chain reaction (PCR), relevant investigations like liver function tests, abdominal ultrasound, prothrombin time (PT), activated partial thromboplastin time (APTT) were also done.

**Results:** Out of 4215 patients, 3202 (75.96%) were male and 1012 (24.04 %) were female. Hepatitis B and Hepatitis C was present in 392 (9.30%) patients, out of these 392 patients 313 (79.8%) were male and 79 (20.1%) were female. Hepatitis B was present in 130 (3.08%) patients, hepatitis C was present in 249 (5.90%) patients and 13 (0.09%) patients were positive for both hepatitis B and hepatitis C. Out of 392 hepatitis positive patients risk factors were identified among 244 (62.24%) patients, while no risk factor was identified in 148 (37.76 %). History of previous surgery (20.92%) was the commonest predisposing factors.

**Conclusions:** High prevalence of hepatitis B and C suggests that pre-operative screening of patients going for surgery should be mandatory.

**Keywords:** Prevalence, Hepatitis B, Hepatitis C, Risk factors, Orthopaedic.

## INTRODUCTION

Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections are frequent causes of chronic hepatitis worldwide. They create a significant burden to healthcare systems due to the high costs of treatment.<sup>1</sup> It is the 10th leading cause of death worldwide, WHO has estimated that about 2 billion people worldwide are infected with the HBV virus and more than 350 million are chronic carriers of HBV.<sup>2</sup> Approximately 15-40% of the infected patients develop cirrhosis, liver failure, or hepatocellular carcinoma (HCC).<sup>3</sup> HBV infection accounts for 500,000 to 1.2 million deaths each year.<sup>4,5</sup> Regarding HCV, it has been estimated that 170 million persons have chronic infection and that 3 to 4 million new infections occur

each year.<sup>6</sup> Both hepatitis B and C are the leading causes of cirrhosis and hepatocellular carcinoma.<sup>7</sup>

Patients with viral hepatitis may be asymptomatic till the development of complications. Symptomatic patients may present with malaise, anorexia, nausea, abdominal pain, and jaundice.<sup>8,9</sup> Prevalence of HBV and HCV is high among intravenous drug abusers, prisoners, haemodialysis patients, healthcare workers, patients with history of blood transfusion, previous surgery, dental procedure, tattooing and in homosexuals.<sup>10</sup>

There is no vaccine against HCV,<sup>1</sup> but vaccine is available for HBV.<sup>9</sup> Doctors, especially surgeons and paramedical staff have a high occupational risk of acquiring HBV and HCV infection from patients.<sup>11</sup> Surgeons and operating room personnel have the highest risk of occupational exposure.<sup>12</sup> Chances of surgeons contracting hepatitis B infections are 1%.<sup>13</sup> The present study is carried to find out the prevalence of hepatitis B and C and their risk factors in patients admitted in orthopaedic unit of Khyber Teaching Hospital, Peshawar.

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## MATERIAL AND METHODS

We conducted a single centered descriptive study in Orthopaedic unit of Khyber Teaching Hospital, Peshawar from April 2007 to May 2009. We enrolled 4215 consecutive patients after taking informed consent. All the patients who were admitted in the orthopaedic unit for surgery were included in the study. Three (3) ml of blood was collected in a syringe without anticoagulant from antecubital vein with all aseptic precaution. The serum was screened for hepatitis B and hepatitis C by ICT Kit method. Those patients who were positive on ICT were subjected to 3<sup>rd</sup> generation ELISA and PCR; relevant investigations like liver function tests, abdominal ultrasound, PT, APTT were also done. A questionnaire was completed from all positive patients. All the information was entered in a standard form.

## RESULTS

A total of 4215 patients were enrolled in the study. Out of 4215 patients 3202 (75.96%) were male and 1012 (24.04%) were female. Age wise distribution is given in Table 1. Maximum patients were in the age range of 41-60 years. Hepatitis B/Hepatitis C was present in 392 (9.30%) patients, out of these 392 patients 313 (79.8%) were male and 79 (20.1%) were female. Hepatitis B was present in 130 (3.08%) patients and hepatitis C was present in 249 (5.90%) patients, and 13 (0.09%) patients were positive for both hepatitis B and hepatitis C. Prevalence of hepatitis is given in Table 2.

Out of 392 hepatitis positive patients risk factors were identified among 244 (62.24%) patients while no risk factor was identified in 148 (37.76%). Break up of risks factors are shown in Table 3.

**Table 1: Age wise Distribution of Patients**

S. No.	Age range	Frequency with %age
1.	< 20 years	380 (9.01%)
2.	21-40 years	840 (19.92%)
3.	41-60 years	1494 (35.44%)
4.	61-80 years	1296 (30.74%)
5.	81-100 years	201 (4.76%)
6.	> 100 years	4 (0.09%)

**Table 2: Prevalence of Hepatitis**

S. No.	Hepatitis	Frequency with %age
1.	Hepatitis B	130 (3.08%)
2.	Hepatitis C	249 (5.90%)
3.	Hepatitis B & C	13 (0.09%)

**Table 3: Risk Factors of Hepatitis B & C in 392 positive patients**

Risk Factors	Frequency with %age
Previous surgery	82 (20.92%)
Blood transfusion	54 (13.77%)
Dental procedure	33 (8.42%)
Previous hospitalization	27 (6.89%)
Positive family history	20 (5.10%)
Injection & drug abuse	12 (3.06%)
Barber Shaving	13 (3.32%)
Tattooing	3 (0.76%)
No Known risk factor	148 (37.76%)
Total	392 (100%)

## DISCUSSION

Viral hepatitis is the major health problem in the world today including Pakistan. Seroprevalence of HBS Ag and HCV is high in general population.<sup>14</sup> This problem of viral hepatitis in hospitalized patients is not adequately controlled although the asymptomatic patients pose great danger of spreading the infection to other patients and medical personnel.<sup>15,16</sup> Screening of asymptomatic people is an important tool in disease detection, prompt diagnosis and intervention especially in silent killers like HBV and HCV infections. This study therefore was set out to determine the seroprevalence of HBS Ag and Anti HCV antibodies in general population who were presented to Orthopedic unit for different problems.

In our study the higher incidence of hepatitis B and C were in the age range of 41-60 years, which is comparable to the study of Talpur et al.<sup>17</sup> Among 392 patients who were positive for hepatitis B, C or both, 313 (79.8%) were male & 79 (20.1%) were female, male to female ratio was consistent with the study done by Ali et al.<sup>18</sup>

We observed highly variable seroprevalence estimates for both HBV and HCV from different studies. Hepatitis B was present in 130 patients (3.08%), Hepatitis C was present in 249 patients (5.90%), both Hepatitis B and C were present in 13 patients (0.30%), the prevalence of HBV and HCV was comparable to the study of Ali et al.<sup>18</sup>, who found Hepatitis B in (3.6%), Hepatitis C in (5.1%) and both hepatitis B and C in (1.1%) of all the positive patients. In another study prevalence of Hepatitis B was (8.66%) and Hepatitis C was (11.66%).<sup>17</sup> Our results were also consistent with the study conducted by Chaudhry et al.<sup>19</sup> 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%. Prevalence of anti HCV was 3.3% and that of HBS AG was 3.0% in a study conducted by Farooq et al.<sup>20</sup>

It is clear that both HBV and HCV infection are very common in Pakistan such that serious incidence rates of end stage liver disease, both cirrhosis and hepatocellular carcinoma, will plague this nation for many years to come. In comparison to studies from other parts of the world, the prevalence of infection reported in this study was similar to 4.9% for HBV and 10.3% for HCV, reported in Ejele Qu and Sirisena ND respectively.<sup>21,22</sup> In our study among the predisposing factors history of previous surgery was present in 20.92%, blood transfusion in 13.77%, history of dental procedure in 8.42% and no known risk factor was present in 37.76%, which are comparable to the study of Khan MS et al.<sup>23</sup>

## CONCLUSION

Pre operative screening of HBs and HCV for patients going for the surgery should be made mandatory to prevent dreadful complications of Hepatitis B and C.

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