

## Frequency of Hepatitis B and C in Pre-operative Patients for Elective Surgery

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### ABSTRACT

**OBJECTIVE:** To document frequency of Hepatitis B and C in patients undergoing elective surgery.

**DESIGN:** Descriptive case series

**SETTING:** Surgical Unit II Civil Hospital Karachi, from June 2005 to May 2006.

**METHODS:** All patients undergoing elective surgery were screened for Hepatitis B and C by enzyme immunoassay (EIA). Risk factors for hepatitis B and C virus infections were also recorded.

**RESULTS:** Out of 496 screened patients, HBsAg was found positive in 25 (5.0%) patients. Out of 25 HBsAg positive patients 14 (56%) were females and 11 (44%) were males. Anti-HCV was reported positive in 60 (12.0%) patients in which 38 (63.3%) were females and 22 (36.6%) were males. Overall 19.7% subjects had been vaccinated against HBV.

**CONCLUSION:** We conclude that the high prevalence of hepatitis B and C in pre-operative patients is present in our population.

**KEYWORDS:** Hepatitis B, Hepatitis C, Screening, Surgery.

### INTRODUCTION

Hepatitis B (HBV) is one of the most common infections worldwide with the prevalence of about 2 billions.<sup>1</sup> Over a million die annually due to HBV related complications.<sup>2,3</sup> HBV was first isolated in 1960. Infectivity of Hepatitis B is 8 times greater than HIV.<sup>2</sup> Hepatitis C (HCV) is also a big health-care problem all over the world with 130 million patients infected with this virus world over.<sup>4,5</sup> As both share the similar routes of spread, co-infections also occur and compound the management of these patients.<sup>6</sup> Health-care workers (HCW) are at increased risk for acquiring these infections.<sup>7</sup> The prevalence of HBV is now reported at about 4-5% while that of HCV at 7-8% in Pakistan, while there exist pockets of high density in some areas.<sup>8-12</sup> Screening for HBV and HCV is usually not routinely done in all cases admitted to hospitals exposing the HCW at increased risk of exposure. Any surgical procedure in the ward or in the operation theatre is an important mode of transmission of these viruses. Contaminated needles, surgical equipments, surgical disposables, blood transfusion, and self prick during procedures can be the cause of transmission of virus from patient to patient and to the doctors and paramedical staff.<sup>13-15</sup> This study was carried out to document frequency of HBV and HCV in patients who were admitted for elective surgery at a tertiary care hospital in Karachi, Pakistan.

### METHODS

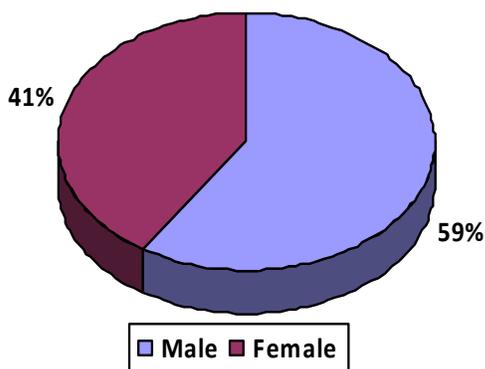
All patients undergoing elective surgery regardless of age, gender and nature of operations at Surgical Unit-II, Civil Hospital Karachi, were selected for the study after taking informed consent. Patients were enrolled between the period of June 2005 and May 2006. History and physical examination was done and recorded with special reference to risk factors and vaccination status. HBsAg and Anti-HCV were done by enzyme immunoassay (EIA) using Roche Amplicor. Frequencies of both viruses were calculated. Frequencies for risk factors and vaccination status were also calculated.

### RESULTS

During the study period 496 elective surgeries were done; out of these, 293 (59.1%) were males (mean±SD age 28.4 ±3.8 years) and 203 (40.9%) were females (mean±SD age 30.6±3.1 years) also shown graphically in **Figure I**. Majority of patients were in 2<sup>nd</sup> and 3<sup>rd</sup> decade of life. Most common risk factors identified were shaving by barber (61.4%) and dental procedures (41.3%); details are given in **Table I**. Ninety-eight (19.7%) were vaccinated for hepatitis B. These included 62 males and 36 females. HBsAg was positive in 25 (5.0%) patients. Out of 25 HBsAg positive patients, 14 (56%) were females and 11 (44%) were males. Anti HCV was reactive in 60 (12.1%) pa-

tients. Out of these 38 (63.3%) were females and 22 (36.6%) were males. Both HBsAg and Anti HCV were present in 03 (0.6%) patients.

**FIGURE I:  
DISTRIBUTION ACCORDING TO GENDER OF  
TOTAL SURGERIES DONE**



**TABLE I:  
RISK FACTORS IDENTIFIED IN HEPATITIS B AND  
C REACTIVE PATIENTS**

Risk Factors	Count	%
Barber shave	305	61.4
Dental procedure	205	41.3
Surgical procedure	143	28.8
Frequent users of injections	89	18.0
Blood transfusion	74	15.0
History of contact	26	5.2
Drug addicts	16	3.2

## DISCUSSION

Hepatitis B and C are global problems. About 5% of general population and 10% of the adult population has been reported carrying this virus; it is transmitted through parenteral roots. Surgeons and health-care workers are being exposed to an increased risk through pricks especially through hollow needles.<sup>16-19</sup> An average risk of transmission of HCV after needlesticks injury is estimated to be about 0.3-1.8%.<sup>19</sup> The incidence of needle stick injury varies from 5.3% to 12.8% depending on the surgical specialty, experience and duration of surgery. With high prevalence of Hepatitis in 3<sup>rd</sup> world countries, exposure for the high risk group is much more in our local literature. The antibody titer to Hepatitis C virus was found to be higher than in developed countries. In our study high frequency of injection use was found in 94% of HBsAg positive patients, and 92.5% in anti-HCV reactive patients. History of blood transfusion was present in 74% of HBV seropositive and 40% HCV seropositive pa-

tients, which is quite high. The vaccination status was poor in this study with only 19.7% of patients vaccinated against HBV reporting for surgery. Among them, too, the female vaccination rate was much less. In our study 5.0% surgical patients were found positive carriers of hepatitis B and 12.0% patients were positive for hepatitis C virus. This is higher than in general population in Pakistan but our study was hospital based study and does not reflect the prevalence of general population. Poor socioeconomic status, psychological stress and depression are much prevalent in these patients.<sup>20,21</sup> In a multivariate analysis, three variables are significant regarding the prevalence of the disease, intravenous drug abuse, transfusion, and low socio-economic status.<sup>13,16,22</sup> The last criterion is more of a risk indicator than a risk factor. In our study previous surgical history was also present in 28.8% and history of dental procedure was present in 41.3%. In Pakistan, like many other 3<sup>rd</sup> world countries, more than 80% of deliveries are conducted by traditional birth attendant in unhygienic conditions and without proper sterilization, which makes females more vulnerable to HCV and Hepatitis B virus infection. In order to prevent hepatitis as an epidemic in our country, prevention and counseling measure should be specified in general, the awareness of its presence and the magnitude of risk should be known to patients as well as to health-care providers. Surgeons, theatre staff, nurses, and other health-care workers are at greater risk of acquiring these infections. The study has its limitations that it is a hospital based study and its application to general population regarding the frequencies of HBV and HVC could not be done. Being a hospital based study the frequencies of both viruses are higher than reported from epidemiological studies. Nevertheless it highlights the increased risk to the HCW from them and implementation of measures to reduce exposure.

## CONCLUSION

High prevalence of hepatitis B and C was present in patients pre-operatively. This stresses the need to be careful in patient handling and implementation of surgical protective protocols strictly.

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