# PREVALENCE OF HEPATITIS 'B' AND 'C' IN ORTHOPAEDICS PATIENTS AT AYUB TEACHING HOSPITAL ABBOTTABAD

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**Background:** Hepatitis B and C is a common global health problem and is spreading rapidly in developing countries due to lack of health education, poverty and illiteracy. Both of these infections can be transmitted through blood or body fluids, tattooing, through infected instruments, unsafe shave by barbers and sexual contact. Medical personnel are most exposed to these infections. There should be proper preventive measures to prevent its spread in the community. **Methods:** This is a descriptive study carried out from July 2003 to July 2004 on 1630 patients admitted in the department of Orthopaedics Ayub Teaching Hospital Abbottabad. Patients of either sex, of all ages undergoing surgery were included in the study. All patients underwent screening for Hepatitis-B and Hepatitis-C and confirmed by Elisa method in positive patients. **Results:** Out of 1630 patients 1205 (73.92%) were male and 425 (26.07%) were female. Hepatitis B and C was present in 84 (5.15%) patients. Out of 84 infected patients 51 (3.12%) were suffering from hepatitis C and 33 (2.02%) were suffering from hepatitis B. In 2 (0.12%) patients both hepatitis B and C infections were present. Out of 51 hepatitis C patients, 33 (64.71%) were male and 18 (35.29%) were female. Out of 33 hepatitis B patients, 28 (84.85%) were male and 5 (15.15%) were female patients. Among the predisposing factors previous history of surgery was positive in 18 (21.43%) patients, history of blood transfusion in 13 (15.47%) patients, dental procedure was in 7 (8.33%) patients, and abroad visit in 4 (4.76%) patients. **Conclusion:** The prevalence of hepatitis B and C in orthopaedic patients is quite high with the common risk factors: previous history of surgery or blood transfusion. Therefore, all patients which need surgery should be routinely screened for hepatitis B & C to prevent transmission to other patients, medical staff. There should be separate operation theatres facilities for these patients. 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 with these infections during their service otherwise the medical personnel especially surgeons will hesitate doing surgeries on hepatitis B and C infected patients.

**Key Words:** Prevalence, Hepatitis B, Hepatitis C, Orthopaedic patients

## INTRODUCTION

Hepatitis B and C is a global problem but it is rapidly spreading in developing countries due to lake of community health education, illiteracy and poverty. Majority of these patients are asymptomatic and pose great danger of spreading these infections to the society and medical personnel particularly.[1]

Hepatitis C was first identified in 1988[3] and 0.5-29% has been found in population sample around the world.[2,3,4] It's prevalence is 5.1% in blood donors in India, 1.5% in Saudi Arabia, and 0.5 to 25.7% in Pakistan.[5,6]

Both Hepatitis B and C are transmitted through blood either by percutaneous or body fluids (semen, saliva or vaginal secretion).[7,8]

Both these infections present with malaise, anorexia, abdominal pain and jaundice but some time there are no symptoms till the development of cirrhosis, portal hypertension, oesophageal varieces, ascities, encephalopathy or liver malignancy.[9,10]

There is vaccine available for hepatitis B which is now incorporated in immunization schedule all over the world and it is expected that its incidence will decrease.[10,11]

Almost two billion people are infected with hepatitis B and more than 350 million have life long chronic liver infection.[11]

One hundred and seventy million people are infected with hepatitis C and 3 to 4 million people get infected each year.[12] There is high risk of infections in patients who receive blood, undergo dental treatment, have unsterilised injections, skin tattooing, shave history of the face or arm pits by barbers or sexual abuse history.[13,14]

Hepatitis B virus circulates in high titres in blood and lower titres in other body fluids and is hundred times more infectious than HIV infections and ten times more than HCV.[15]

Prevalence of hepatitis B is 4 times higher in black as compared to whites (11.9% compare to 2.6%).[16]

Chances of surgeons contracting hepatitis B infections are 1%.[17] It is important that all surgeons know there HBV and HCV profiles. As vaccination is available only against HBV, therefore, it should be given to those surgeon who are not immunized.

In certain countries it has been reported that due to re-use of needle syringes in pain remedy clinics by

clinical staff and anaesthetist nurse, there is nosocomial spread of HCV and HBV.[18] In another study[19] HCV transmission to anaesthetists through accidental exposure is 2% in the United States population.

The objective of this study is to find out the prevalence of Hepatitis B and C and their risk factors in patients admitted in Orthopaedic unit.

## MATERIAL & METHODS

This descriptive study was conducted in the department of Orthopaedics Ayub Teaching Hospital Abbottabad from July 2003 to June 2004. The patients included for study were 1630. The inclusion criteria were patients of both age and sex who needed surgery. The exclusion criteria were patients who did not need surgery and serious patients who presented in accident and emergency and needed immediate surgery.

All the patients who fulfilled the inclusion criteria were interviewed in detail and the data was recorded on a prescribed performa. The questions asked were past history of jaundice, blood transfusion, surgery history, dental history, injection history, associated illnesses, barber shave history, visit abroad and family history.

The positive patients of hepatitis B and C were again checked by ELLISA method and other relevant investigations were also done, i.e., liver function tests (LFT), abdominal ultrasound, prothrombine time and physician opinion.

## RESULTS

Out of 1630 patients, 1205 (73.92%) were male and 425 (26.07%) were female. Hepatitis B and C was present in 84 (5.15%) patients. Out of 84 infected patients 51 (3.12%) were suffering from Hepatitis C and 33 (2.02%) were suffering from hepatitis B. In 2 (0.12%) patients both hepatitis B and C infection was present.

The frequency regarding age of Hepatitis B was in 7 (63.64%) patients out of 11 above 20 years of age while it was in 4 (36.36%) patients which were below 20 years of age. The incidence of hepatitis C regarding age in our study is 16 (94.12%) out of 17 in age group above 20 years while 1 (5.88%) patient out of 17 was below 20 years. The gender-wise incidence is shown in Table-1 and predisposing factors are shown in Table-2.

**Table-1: Prevalence of Hepatitis B & C of 1630 screened patients**

| Type of Hepatitis | Male (n=1205) | Female (n=425) | Total (n=1630) | *p*-value |
|---|---|---|---|---|
| **Hepatitis B** | 28 (2.32%) | 5 (1.17%) | 33 (2.02%) | $p>0.05$ |
| **Hepatitis C** | 33 (2.74%) | 18 (4.24%) | 51 (3.13%) | $p>0.05$ |
| **Total:** | 61 (5.06%) | 23 (5.41%) | 84 (5.15%) | $p>0.05$ |

**Table -2: Predisposing factors of Hepatitis B & C among 84 positive patients**

| FACTORS | Number | Percentages |
|---|---|---|
| **Previous Surgery** | 18 | 21.44 |
| **Blood Transfusion** | 13 | 15.48 |
| **Dental work** | 7 | 8.33 |
| **Abroad Visit** | 4 | 4.76 |
| **Positive Family History** | 7 | 8.33 |
| **Tuberculosis** | 4 | 4.76 |
| **Typhoid** | 2 | 2.38 |
| **No known factor** | 29 | 34.52 |
| **Total:** | 84 | 100 |

## DISCUSSION

Hepatitis B and C are rapidly spreading in most parts of the world. Hepatitis C virus infection is endemic in certain parts of the world, which is 3%[20] and ranges from 0.4% in general adult population of Fukuoka Japan to 2.4% in Turkey[8] and 14.4% in Southern Italy.[21] In another study[22] the anti-HCV antibodies were found in 11.66% patients which is significantly higher in comparison to Japanese study and our study, and slightly lower than the Italian study.

The prevalence of hepatitis C in general and its frequency regarding age and sex in our study is comparable to other studies.[8,23] The higher incidence of hepatitis B and C above 20 year of age is comparable to local study.[22]

In our study the hepatitis B and C was present in 5.15% cases with patients having hepatitis C as 3.12% and hepatitis B in 2.02% cases. The male and female percentage in hepatitis C was 2.74% and 4.24% respectively. The hepatitis B male and female percentage is 2.32% and 1.17% respectively. Statistically there is no significant difference between male and female regarding contracting hepatitis B & C infection. In a local study[23] the prevalence of HCV was 4.57% with higher prevalence among the male compared to female. In another study[22] prevalence of hepatitis B was 8.66% and HCV 11.66%.

In our study the predisposing factors of hepatitis B and C were previous history of surgery in 18 (21.43%) patients, blood transfusion history in 13(15.47%) patients, dental procedure in 7 (8.33%) patients, abroad visit in 4 (4.76%) patients, positive family history was recorded in 7 (8.33%) patients, tuberculosis in 4 (4.76%) and typhoid in 2 (2.38%) patients which are comparable to another studies.[22,23]

The risk factors of hepatitis B and C in another study[22] are previous blood transfusion in 25% and previous hospitalization in 3.2% of cases.

The risk factors in hepatitis C in another study[23] were major surgery are 6.92%, previous blood transfusion 1.06%, dental procedure 9.72%, tattooing in 0.39%, and shaving by community barbers 44.2%.

The instruments used in operation theatres in our setup are not regularly washed with proper

solution or properly sterilized to kill these viruses. The laundry used in operation theatre and operating of anaesthesia machine have no special instructions for these infections. These factors can be minimized in order to prevent infections of hepatitis B & C.

## CONCLUSION

The prevalence of hepatitis B and C in orthopaedic patients is quite high with the most common risk factors as previous history of surgery, blood transfusion, dental procedures and positive family history.

Therefore, all patients who need surgery including dental procedures should be routinely screened for Hepatitis B & C. There should be separate operation theatres facilities for these patients.

There should be policy by the government for protection of medical personnel who are at risk and there should be compensation for those who get infected during their service otherwise the medical personnel especially surgeons will hesitate on doing surgeries on hepatitis B and C infected patients.

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