

## SEROPREVALENCE OF HEPATITIS-B AND C AMONG THE PATIENTS REPORTING IN SURGICAL OPD AT FAUJI FOUNDATION HOSPITAL, RAWALPINDI: Review of 5 year literature

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### ABSTRACT

**Objectives:** To find out the seroprevalence of HbsAg and Anti HCV virus among the patients reporting in surgical OPD.

**Methodology:** This is a prospective observational study. Patients reporting to surgical OPD of Fuji Foundation Hospital, Rawalpindi above 20 years of age, with no previous history of seropositive Hepatitis B or C of chronic liver disease were enrolled from January 2006 to June 2006

**Results:** Prevalence of Hepatitis B is 2.28% with a male predominance of 8.60%. Seroprevalence of Hepatitis C is 7.56% with male predominance of 10.84%.

**Conclusion:** Prevalence of Hepatitis B and C is not uncommon in our country. To control its further spread public awareness and health education programs should be started at all levels.

**KEY WORDS:** Sero prevalence, HbsAg, Anti HCV.

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### INTRODUCTION

To understand and assess the magnitude and dynamics of transmission of a disease in a community and for its control and prevention, the assessment and study of its prevalence is very important. Hepatitis B and C virus is a major health issue world wide especially in developing and underdeveloped countries. It is responsible for significant morbidity and mortality in these countries. Prevalence of Hepatitis C varies from 0.5% to 29% in different parts of the world. World Health Organization estimates that about 170 million people i.e. 3% of world population are infected with Hepatitis C virus (HCV) and are at the risk of developing liver cirrhosis or hepatocellular carcinoma.<sup>1</sup> Similarly Hepatitis B Virus (HBV) infection is another global health problem with 350 million people being carrier worldwide.<sup>2</sup> In Pakistan this number is estimated around 7 million with a 5% reporting rate.<sup>2,3</sup> HBV infection may leads to either persistent infection or a carrier state.

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It may progress to chronic liver disease (CLD) including Hepatocellular carcinoma.<sup>4</sup> It is estimated that about one million people die each year from HBV related chronic liver disease.<sup>3</sup> Incidence or prevalence of Hepatitis B and C virus is not exactly known in our country because no study was conducted at national level. Few studies were conducted on various sections of the society at different time in different parts of the country in past. Findings of these studies were projected to represent the prevalence of disease in whole country but these statistics are not taken as a prevalence of Hepatitis B and C in Pakistan.

### PATIENTS AND METHODS

This prospective, observational study was carried out in the Surgical Out Patients Department of Fauji Foundation Hospital, Rawalpindi from January, 2006 to June, 2006. The Fauji Foundation Hospital, Rawalpindi is a 660 bed, tertiary care hospital, which provides free health care to the ex-servicemen, their families and also to the private patients on payment. All treatment, hospitalization and investigations are free of cost for entitled patients. Most of the patients reporting for treatment belong to the areas of Rawalpindi division, Jehlum, Gujrat, Chakwal, Abbottabad district, Northren and Central Punjab, Azad Kashmir and NWFP.

All patients reporting in surgical out patient were included in the study. Patients diagnosed as chronic liver disease or evidence of Hepatitis B or C positive in past were excluded from study. Patients less than 20 years of age were not screened for Hepatitis B or C. HBsAg and Anti HCV screening of these patients were done in hospital laboratory with AxSYM system. The specificity of this test is more than 99% and sensitivity of 100%.<sup>5</sup> Computerized record of all patients was maintained and all findings were analyzed statistically at the end

of study. Review of published literature during last five years was done from internet websites (Pakmedinet, Pubmed) and available websites of all journals published in Pakistan. Only those studies showing prevalence of Hepatitis B and C among general population or in outdoor surgical patients were included for review and comparison. A total number of fifteen articles published in last five years were included for review in our study.

### RESULTS

A total number of 2056 patients were screened for HBsAg, among them 47 (2.28%) were positive for HBsAg. The prevalence of HBsAg is higher in males (8.60%) as compared to females (1.98%). For Hepatitis C Virus, 2022 patients were screened during study period and among them 153 (7.56%) were seropositive for Hepatitis C virus. Majority of them are males (10.84%) as compared to females (7.47%) Table -I. Table -II shows prevalence of Hepatitis B and C in different studies conducted at different parts of country and published during last five years. Prevalence of HbsAg ranges from 2.11% to 5.83% and seroprevalence of Anti HCV ranges from 2.2% to 13.5% in different parts of Pakistan.

### DISCUSSION

Most common route of transmission of Hepatitis B and C virus is parenterally, mainly as a result of contaminated blood transfusion or blood to blood contact, injury with contaminated sharp instruments, with infected needle pricks or sexual contacts and also through perinatal vertical transmission from mother to child.<sup>6</sup> Poor knowledge and lack of awareness about Hepatitis B and C virus among the general public is the main cause of its rapid spread in our country. This is the reason that prevalence rates in developing or underdeveloped

Table-I: Prevalence of HbsAg and Anti HCV in among patients in surgical OPD

	HBsAg		Total	HCV		Total
No of patients screened	Male n= 93	Female n=1963	2056	Male n=83	Female n=1939	2022
No of positive cases	8(8.60%)	39(1.98%)	47(2.28%)	9(10.84%)	145(7.47%)	153(7.56%)

Table-II: Prevalence of HbsAg and Anti HCV reported in published literature of last five years

	<i>Place of study</i>	<i>Year</i>	<i>HbsAg%</i>	<i>HCV%</i>
1	Muhammad N, et al [1]DHQ Hospital Daggar, Buner	2005	—	4.57
2	Chaudhary IA, et al [24]Fauji Foundation Hospital, Rawalpindi	2005	2.11	11.26
3	Kokhar N, et al [17]Shifa Int Hospital, Islamabad	2004	2.56	5.31
4	Shirazi B, et al [18]Zia ud Din Medical University, Karachi	2004	5.83	4.62
5	Khan MSA, et al [19]DHQ Hospital, Mardan	2004	—	9.0
6	Amin J, et al [20]Shalamar Hospital, Lahore	2004	2.6	13.5
7	Zakria M, et al [21]PNS Shifa, Karachi	2003	3.2	2.2
8	Ali N, et al [22]AFIP, Rawalpindi	2002	3.53	3.29
9	Almani SA, et al [23]Liaqat Uni of Med & Health Sci Hospital, Jamshoro	2002	4	9
10	Zafar MAF, et al [24]Lady Aitchison Hospital, Lahore	2001	—	6
11	Qasmi SA, et al [12]Abbasi Shaheed Hospital, Karachi	2000	3	—
12	Mehmood A, [10]PNS Shifa, Karachi	2000	5.46	—
13	Anwar MS, et al [13]Postgraduate Med Inst of Health and Management, Lahore.	1999	—	5.78
14	Bukhari SM, et al [13]King Edward Medical College, Lahore	1999	5	—
15	Tayyab GN, et al [25]Allama Iqbal Medical College, Lahore	1999	5.05	—
16	Sultana N, et al [13]Poly Clinic, PIMS, DHQ Hospital, Rawalpindi	1999	—	4

countries are much higher as compared to developed countries.

Common cause of Chronic Hepatitis, liver Cirrhosis and Hepatocellular carcinoma is Hepatitis B virus all over the world. About one million peoples die each year from this disease.<sup>4</sup> Common mode of transmission of Hepatitis B virus are blood transfusion, needle stick injuries, sexual intercourse and perinatally from mother to newborn. HBV infection is more prevalent in drug addicts who use syringes and in those patients who received multiple transfusions e.g. Thalassamia patients.<sup>7</sup> Poor knowledge about Hepatitis B virus infection is the main cause of its spread. About 5% of patients with HBV infection become chronic carrier.<sup>7</sup> Chronic carriage is more likely to occur when infection occurs in a newborn (90%) then in adult. The risk of progression to cirrhosis is 2-5.5% per year and for Hepatocellular carcinoma is at about 2% per year in those with cirrhosis.<sup>8</sup> A high rate of Hepatocellular carcinoma occurs in chronic carriers. Hepatitis B is found world wide but it is more prevalent in Asia. Globally more than 300 million people are chronically infected with HBV and among them 75% are from Asia.<sup>7</sup> Prevalence of Hepatitis B virus in Pakistan is reported from 3.16% to 10.4% in different studies conducted at different places in the past.<sup>3,9</sup>

Seroprevalence of Hepatitis B in our study is 2.28%. On reviewing the literature in last five years the seroprevalence of Hepatitis B is 2.11% to 3.53% in Rawalpindi,<sup>10,11</sup> 2.5% in Islamabad,<sup>12</sup> 2.6% to 5.05% in Lahore,<sup>9,13-15</sup> 3% to 5.46% in Karachi<sup>3,4,14,16</sup> and 4% from Jamshoro (Sindh).<sup>17</sup> So the prevalence of Hepatitis B is between 2.11% to 5.46% in different parts of country. The highest seroprevalence (5.46%, 5.83%)<sup>3,16</sup> was reported from Karachi.

Hepatitis C virus was first identified in 1988.<sup>18</sup> Since then it has become a major health issue world wide. HCV spreads almost through same manner but the risk of transmission through needle stick injury is less than HBV and more in drug users.<sup>7</sup> 75% of the patients with HCV become chronically infected and among them about 10% develop chronic active hepatitis, cirrhosis or Hepatocellular carcinoma.<sup>7,8</sup> Alcoholism greatly enhances the rate of Hepatocellular carcinoma in HCV infected individuals.<sup>7</sup> Due to its long asymptomatic course it is often neglected. The prevalence among general population is 3% to 7% in different parts of Pakistan in different studies conducted in the past.<sup>19</sup>

Seroprevalence of Hepatitis C observed in our study is 7.56%. Whereas the seroprevalence of Hepatitis C as reported in literature during last 5 years is 4.57% in Buner (NWFP),<sup>18</sup> 9% in

Mardan (NWFP),<sup>20</sup> 3.2% to 11.26% in Rawalpindi,<sup>9-11</sup> 5.31% in Islamabad,<sup>12</sup> 5.78% to 13.5% from Lahore,<sup>9,13,21</sup> 9% from Jamshoro (Sindh)<sup>17</sup> and 2.2% to 4.6% from Karachi.<sup>14,16</sup> The seroprevalence of Hepatitis C in different parts of country, reported in last five years is from 2.2% to 13.5%. The highest seroprevalence of hepatitis C is reported from Lahore (13.5%)<sup>13</sup> Jasmshoro and Mardan (9%).<sup>17,20</sup>

Keeping in view the high frequency of HCV in our country, we need nationwide efforts to identify peoples who are infected with HCV and Hepatitis B virus. Mass education of the public regarding spread of infection through unscreened blood transfusion, reuse of syringes and other medical and dental equipment and instruments, avoidance of tattooing, ear and nose piercing from market, circumcision and shaving from the barbers and so on is extremely important. Because of the lack of health resources especially at rural areas and deficiency of well trained medical personals the prevalence is increasing at an alarming rate. It is required to prevent this disease by health education and creating awareness among the general public. This task should effectively be done with the involvement of electronic and print media, local body health educator's volunteers, NGO's and religious scholars. Awareness programs regarding Hepatitis B and C at school level should be started to save our future generation.

Due to lack of national database further studies at individual levels at district levels may be helpful to identify the areas where prevalence of Hepatitis B and C is higher. It will help to look for the risk factors responsible for transmission of disease. Awareness and education programs for public, paramedical staff should be initiated on urgent basis with the help of NGO's, Medical authorities and local representatives.

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