

## PREVALENCE OF HEPATITIS B AND C INFECTION IN PATIENTS ADMITTED AT TERTIARY EYE CARE CENTRE: A Hospital based study

Sameen Afzal Junejo<sup>1</sup>, Nisar Ahmed Khan<sup>2</sup>, Arshad Ali Lodhi<sup>3</sup>

### ABSTRACT

**Objective:** To determine the prevalence of hepatitis B virus (HBV) and hepatitis C virus (HCV) infections and the risk factors in patients admitted for ocular treatment at a tertiary eye care centre in Sindh Pakistan.

**Methodology:** Nine hundred thirty one patients admitted at Liaquat University Eye hospital Hyderabad for ocular treatment, were screened for HBV and HCV. Patients of either sex, with more than thirty years of age were included. Screening for HBV surface antigen (HBsAg) and antibodies against HCV (anti-HCV) was performed through chromatography method. Samples repeatedly reactive for HBsAg or anti-HCV were considered positive.

**Results:** Out of 931 registered patients, 497 (53.3%) were male and 434 (46.7%) female. Hepatitis B and C was detected in 167 (17.9%) subjects. The overall seroprevalence of HBV infection within the study period was 4.6%, HCV 13.3%, and for HBV and HCV both was 3.9%. Regarding the predisposing factors, past history of blood transfusion was present in 08.3% subjects, needle injection 89.2%, barber shaving 52.6%, and 46 (27.5%) patients presented with past history of surgery.

**Conclusion:** For the prevention of transmission of HBV and HCV infection, the community awareness regarding vaccination against Hepatitis - B and risk factors for spread of HBV & HCV, implementation of population based screening and vaccination for HBV on large scale should be ensured.

**KEY WORDS:** Hepatitis B and C, Risk Factors, Hyderabad Sindh, Pakistan.

Pak J Med Sci July - September 2009 Vol. 25 No. 4 597-600

### How to cite this article:

Junejo SA, Khan NA, Lodhi AA. Prevalence of Hepatitis B and C infection in patients admitted at Tertiary Eye Care Centre: A hospital based study. Pak J Med Sci 2009;25(4):597-600.

1. Dr. Sameen Afzal Junejo, MCPS, DOMS, FCPS
  2. Dr. Nisar Ahmed Khan, FCPS
  3. Dr. Arshad Ali Lodhi, FCPS
- 1-3: Liaquat University of Medical and Health Sciences, Jamshoro - Sindh, Pakistan.

### Correspondence

Dr. Sameen Afzal Junejo, MCPS, DOMS, FCPS  
Associate Prof. Ophthalmology, Incharge Unit-III,  
Liaquat University Eye hospital Hyderabad,  
Liaquat University of Medical and Health Sciences,  
Jamshoro / Hyderabad, Pakistan.  
E-Mail: sameenafzal1@gmail.com

- \* Received for Publication: January 30, 2009
- \* Revision Received: February 9, 2009
- \* Revision Accepted: June 29, 2009

## INTRODUCTION

Hepatitis B virus has become a universally established health challenge due to its world wide distribution, chronic persistence and complications. Hepatitis C virus was first identified in 1988.<sup>1</sup> HBV and HCV infection is found in blood recipients, shaving of face by barbers, and following dental surgery.<sup>2</sup>

About 8 to 16 million HBV and 2.3 to 4.7 million HCV infections may result every year from unsafe injections.<sup>3</sup>

The clinical presentation of hepatitis B and C virus infection is usually the abdominal pain,

malaise, appearance of jaundice. 4 Hepatitis C virus can also cause silent infection, and persist for 10 to 30 years without producing symptoms.<sup>5</sup> Complications of hepatitis B and C virus are portal hypertension, Cirrhosis, ascitis and esophageal varices.<sup>6</sup>

According to one global survey, about two billion people are infected with hepatitis B virus,<sup>7,8</sup> and more than 350 million of population is a carrier for hepatitis B virus.<sup>9</sup> In India HBV infection is nearly 3-4%, and chronic hepatitis B is reported in more than 50% of chronic hepatitis cases.<sup>10</sup>

In Hiroshima Japan, the existence of HBV infection was 2.78 per 100,000 persons per year and with HCV about 1.86 per 100,000 persons per year.<sup>11</sup> In China nearly 10% of China's total population are suffering from HBV infection.<sup>12</sup>

In Pakistan HBV infected patients are estimated around 7 million.<sup>13</sup> In one study from Hafiz Abad, Punjab, HBV Seroprevalence was 4.3% and HCV infection in 6.5% of the total studied population.<sup>14</sup> In a national survey from northern Pakistan, 2.5% of blood donors had HBV, and 5.1% were HCV victims.<sup>15</sup>

The global Seroprevalence of hepatitis C is estimated about one hundred and seventy million of population per year and the spread of three to four million.<sup>16</sup>

## METHODOLOGY

*Study Area:* This descriptive hospital based study was conducted between July, 2007 to June, 2008 at Liaquat University Eye Hospital, Hyderabad. This hospital is a ninety bed university based hospital of Liaquat University of Medical and Health Sciences Jamshoro, Sindh, that offers both emergency eye care and specialized care for patients of all ages. The pathological research laboratory is situated in the hospital premises.

*Patient's Assessment:* After getting verbal consent from all eligible subjects, pre-test counseling was done with the assurance that all information obtained would be kept confidential and for the purpose of research only.

*Inclusion Criteria:* All Patients above thirty years, with either sex, having no documented past

history of chronic liver disease, HBV or HCV infection, admitted for ocular treatment were included, Patients requiring urgent surgical intervention were excluded from screening.

The subjects were interviewed on a structured questionnaire regarding age, sex, place of residence, literacy level, exposure to blood transfusions, visit to barber shops, any history of surgery, family history etc.

*Screening for HBV and HCV:* A two to three-milliliter blood sample was collected by venepuncture aseptically into a sterile test tube from each patient and tested for HBsAg and anti HCV antibodies within first 24 hours of collection. The screening was performed through rapid chromatography immunoassay for qualitative detection of surface antigen of hepatitis-B and antibodies for hepatitis-C virus, using a kit, Accurate / Acou device (Made IN USA). All investigations were performed under the supervision of a consultant pathologist.

Samples positive for either HBV or HCV were re-tested for second time by the same method. Samples repeatedly reactive for HBsAg or anti-HCV were considered positive. The subjects positive for HBV or HCV were referred to the department of Medicine for further evaluation and treatment.

## RESULTS

A total of nine hundred and thirty one (931) admitted patients under went screening for HBV and HCV. General characteristics of study population are given in Table-I.

Hepatitis B and C virus infection was detected in one hundred and sixty seven (17.9%) patients out of 931. The overall seroprevalence of HBV infection within the study period was 4.6% (43 patients), for HCV 13.3% (124 patients), and HBV and HCV both 3.9% (37 subjects). Details regarding seroprevalence of Hepatitis B & C are given in Table-II while risk factors are shown in Tables-III.

Table-I: General characteristics of study population (N= 931)

Characteristics	N/O patients	(%)
<i>Sex</i>		
Male	497	53.4
Female	434	46.6
<i>Age (Years)</i>		
31-40	77	8.2
41-50	339	36.4
51-60	441	47.3
Above 60	74	7.9
<i>Residency</i>		
Urba	400	43.0
Rural	531	57.0
<i>Literacy</i>		
Literate	76	29.6
Illiterate	655	70.3
<i>Socio Economic Status</i>		
Middle lower	212	22.7
Lower	719	77.2

## DISCUSSION

The burden of HBV and HCV disease is increasing globally and Pakistan is no exception. Sindh province, which is one of four provinces in Pakistan, has a population of 30,439,893. The rural proportion of Sindh province (interior Sindh) is 74% of total population of Sindh. Hyderabad is the second largest city after Karachi, in Sindh and fifth largest in Pakistan.<sup>17</sup> In one retrospective survey from Pakistan, the prevalence of HBV in Lahore in 1999 was 5.05%, Karachi in 2000 was 5.46% and in the

Table-III: Risk factors of Hepatitis B and C virus transmission (n=167).

Risk Factor (H/O)	N/O Individuals exposed	(%)
Blood Transfusion	14	08.3
Needle Injection	149	89.2
Barber Shaving	88	52.6
Surgery	46	27.5

H/O = History of, N/O = Number of

year 2004, was 5.83%, Rawalpindi in 2002 was 3.53%, Islamabad in the year, 2004 was 2.56%, and in Fuji Foundation hospital Rawalpindi in 2006, prevalence of hepatitis B was 2.28%, for hepatitis C was 7.56%.<sup>18</sup> Collectively the prevalence of hepatitis B virus in Pakistan was reported from 3.16% to 10.4% in studies conducted at different places in the past.<sup>19</sup> In this study the Seroprevalence of hepatitis B was 4.6%. World Health Organization estimates that about sixty seven million new hepatitis B infections occur every year.<sup>20</sup>

The seroprevalence of HCV is 14.4% in southern Italy.<sup>21</sup> While in general adult population of Japan it is 0.4%, in Turkey the seroprevalence of HCV is 2.4%.<sup>22</sup> According to one general survey, approximately ten million people in Pakistan (6% of the population) are suffering from hepatitis C infection.<sup>23,24</sup>

In one retrospective national survey from Pakistan, the seroprevalence of HCV in Karachi in the year 2003 was 2.2%, Lahore in 2004 was

Table-II: Seroprevalence of Hepatitis B and C (N=167)

Characteristics	N/O HBV Pts	N/O HCV Pts	N/O HBV & HCV
	43 (4.6%)	124 (13.3%)	37 (3.9%)
<i>Sex</i>			
Male	29 (67.4%)	59 (47.5%)	21 (56.7%)
Female	14 (32.5%)	65 (52.4%)	16 (43.2%)
<i>Age(Yrs)</i>			
31-40	7 (16.2%)	21 (16.9%)	5 (13.5%)
41-50	11 (25.5%)	36 (29.0%)	10 (27.0%)
51-60	16 (37.2%)	51 (41.1%)	15 (40.5%)
Above 60	9 (20.9%)	16 (12.9%)	7 (18.9%)
<i>Residency</i>			
Urban	16 (37.2%)	54 (43.5%)	16 (43.2%)
Rural	27 (62.7%)	70 (56.4%)	21 (56.7%)
<i>Socio Economic Status</i>			
Middle lower	14 (32.5%)	31 (25.0%)	9 (24.3%)
Lower	29 (67.4%)	93 (75.0%)	28 (75.6%)

13.5%, Rawalpindi in 2005 was 11.26%.<sup>21</sup> The prevalence of hepatitis C in Buner NWFP Pakistan was 4.57% in general.<sup>25</sup> In this study, the seroprevalence for HCV was 13.3%.

The prevalence of dual infection by HBV and HCV in this study was 3.9%, as compared to another study from India where it was 5%.<sup>26</sup>

## CONCLUSION

Timely identification of people suffering from HBV or HCV infection is mandatory to control rapid spread in Pakistan. Special consideration should include training of medical and paramedical staff, awareness of public on large scale, proper sterilization of instruments, double gloving, and proper disposal of used needles in order to save our future generation.

## REFERENCES

1. Hayashmi J, Kishiharar Y, Yamaji K, Yoshimura E, Yawakami Y, Akazawa K, et al. Transmission of hepatitis C virus by health care workers in rural area of Japan. *Am J Gastroenterol* 1995;90:794-9.
2. Khuwaja AK, Qureshi R, Fatimi Z. Knowledge about hepatitis B and C among patients attending family medicine clinic in Karachi. *East Mediterr Health J* 2002;8(6):1-6.
3. Kane A, Lloyd J, Zaffran M, Simonsen L, Kane M. Transmission of hepatitis B, hepatitis C and human immunodeficiency viruses through unsafe injections in the developing world. Model-based regional estimates. *Bulletin of the World Health Organization*, 1999;(77):10.
4. Russel RCG, Williams NS, Bulstrode CJK, editors. *The Liver*. In: Bailey and Loves' Short Practise of Surgery, 24<sup>th</sup> ed. London: Chapman and Haal 2004;1076.
5. Seef LB. Natural history of hepatitis C. *Am J Med* 1999;107:10-15.
6. Cuschieri SA, Steele RJC, Moosa AR, editors. *Essential surgical practice*, 4th ed. London: Arnold; 2002.
7. Lok AS, Heathcote EJ, Hoofnagle JH. Management of hepatitis B: 2000 - Summary of a workshop. *Gastroenterology* 2001;120:1828-53.
8. Lavanchy D. Public health measures in the control of viral hepatitis: A world health organization perspective for the next millennium. *J Gastroenterol Hepatol* 2002;17-S4:s452-s459.
9. Hayes PC, Sympton KJ, Garden OJ, editors. *Davidson's Principles and Practice of Medicine*; 19<sup>th</sup> ed. Philadelphia Churchill Livingstone; 2002.
10. Abhijit Chowdhury. Epidemiology of hepatitis B virus infection in India. *Hepatitis B Annual* 2004;1(1):17-24.
11. Tanaka J, Mizui M, Nagakami H, Katayama K, Tabuchi A, Komiya Y, et al. Incidence Rates of Hepatitis B and C Virus Infections among Blood Donors in Hiroshima, Japan, during 10 Years from 1994 to 2004. *Intervirolgy* 2008;51(1):33-41.
12. Liang XF, Chen YS, Wang XJ. A study on the sero-epidemiology of hepatitis B in Chinese population aged over 3-years old: the report from Chinese Center for Disease Control and Prevention. *Chin J Epidemiol* 2005;26:655-658.
13. Ali NS, Jamal K, Qureshi R. Hepatitis B vaccination status and identification of risk factors for Hepatitis B in health care workers. *J Coll Physicians Surg Pak* 2005;15(5):257-60.
14. Luby SP, Qamruddin K, Shah AA, Omair A, Pasha O, Khan AJ, et al. The relationship between therapeutic injections and high prevalence of hepatitis C infection in Hafizabad, Punjab. *Epidemiol Infect* 1997;119:349-56.
15. Naila A, Khokhar N, Ilahi F. Seroprevalence of HBV, HCV and HIV infection among voluntary non remunerated and replacement donors in Northern Pakistan. *Pak J Med Sciences* 2004;20:24-28.
16. Lo Re V 3<sup>rd</sup>, Kostman JR. Management of chronic hepatitis C. *Postgrad Med J* 2005;81:376-82
17. <http://www.statpak.gov.pk/depts/pco/statistics/statistics.html> Website Accessed on July 26, 2008.
18. Chaudhary IA, Khan SS, Majrooh MA, Alvi AA. Seroprevalence of hepatitis-B and C among the patients reporting in surgical OPD at Fauji Foundation Hospital, Rawalpindi: Review of 5 year literature. *Pak J Med Sci* 2007;23 (4):514-517.
19. Shah NH, Shabbir G. A review of published literature on Hepatitis B and C prevalence in Pakistan. *J Coll Physicians Surg Pak* 2002;12(6):368-71.
20. EPI Information system, global summery. Geneva, World Health Organization, 1998;26.
21. Choudhary A, Santra S, Choudhary S, Dahli GK, Maitry SG. Hepatitis C virus infection in general population. A community based study in West Bengal India. *Hepatology* 2003;37:802-9.
22. Erden S, Bryukazturk S, Langer S, Yilmaz G, Palanduz T, Badur S. A study of serological markers of hepatitis B and C Viruses in Istanbul Turkey. *Medical Principles and Practise. Intl J Kuwait Univ Health Sci* 2003;12(3):184-8.
23. Hamid S, Umar M, Alam A, Siddiqui A, Qureshi H, Butt J. J Pakistan Society of Gastroenterology. PSG consensus statement on management of hepatitis C virus infection. 2003. *J Pak Med Assoc* 2004;54:46-50.
24. Raja NS, Janjua KA. Epidemiology of hepatitis C virus infection in Pakistan. *J Microbiol Immunol Infect* 2008;41:4-8.
25. Muhammad N, Jan MA. Frequency of hepatitis in Buner, NWFP. *J Coll Physicians Surg Pak* 2005;15(1):11-4.
26. Devi KS, Singh NB, Mara J. Seroprevalence of Hepatitis B virus and hepatitis C virus among hepatic disorders and injecting drug users in Manipur. A preliminary report. *Ind J Med Microbiol* 2004;22:136-7.