



SEROPREVALENCE OF HBsAg (HBS) AND ANTI-HCV; IN GENERAL POPULATION OF BALUCHISTAN. DURING 2012 AND 2013. AN AWARENESS STUDY.

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ABSTRACT... Background: Hepatitis is the inflammation of liver caused by infectious and non-infectious agents. Hepatitis B and C are inflammations of liver caused by the viruses which are the major public health problems worldwide and the incidence is even more in our country. **Objective:** Objective of the study was, 1). To estimate the prevalence of hepatitis B and hepatitis C viruses infected persons among the general population coming to BMC Hospital. 2). To point out the more affected area of Baluchistan. 3). To produce awareness in the people. 4). To bring this issue in Government notice. **Method:** The data was obtained from the patients of BMCH Quetta in which one step test kits were used first and the positive cases were confirmed by ELISA. **Results:** Out of 46319 samples tested (both indoor & outdoor patients), 3078 (6.64%) were positive. From overall positive samples 1631 (3.52%) were HBs positive and 1447(3.12) samples were positive for HCV and 2 patients were positive for both HBs Ag and anti HCV. **Conclusions:** Prevalence of Hepatitis B is more comparing to Hepatitis C in this province. Prevalence of both Hepatitis B and Hepatitis C was high in Naseerabad district of Baluchistan Great care should be exercised during shaving, dental treatment, surgical procedures and blood transfusions. Policy message: - Media should be used by National Hepatitis Control Programme of Pakistan to educate the public about hazards of unscreened blood transfusion. Blood screening for Hepatitis B and C infections should be made mandatory at all blood banks.

Key words: Prevalence, Hepatitis B Virus, (HBV), Hepatitis C Virus (HCV), BMCH

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INTRODUCTION

Hepatitis means inflammation of the liver. Viral hepatitis is a major liver infection in the world. Different viruses including hepatitis A, B, C, D, and E cause viral infection of human liver. Infections with Hepatitis B virus (HBV) and Hepatitis C virus (HCV) are a worldwide public health problem¹.

Hepatitis B virus is a DNA virus from hepadnaviridae family while Hepatitis C is a RNA virus with lipid coat similar to flaviviridae family². Hepatitis B and C are similar types of liver infections, which spread mostly through blood and blood products. Every year continuing occurrence of new infection is noted in the presence of a large reservoir of chronically infected persons³.

Hepatitis B is one of the most common infectious diseases of the world and has infected 2 billion people worldwide. Prevalence of hepatitis B is more in tropical countries Africa and Asia, while in sub-Saharan it is hyperendemic. Individuals with chronic infections have a high risk of liver cirrhosis and hepatocellular carcinoma⁴.

Hepatitis C has been estimated to infect 170 million people in the world. Most of the infected persons are thought to be in the developing countries⁵. HCV plays an important role in the causation of chronic liver diseases, and has become the leading cause of liver cirrhosis and primary liver cell carcinoma in North America, Southern Europe and Japan^{6,7}.

In our country Hepatitis B and C have reached an alarming stage, many country wide studies (individual researchers) and population based Hepatitis B and C survey estimated a prevalence rate of 3-4% of Hepatitis B and 5-6% Hepatitis C, which indicates a burden of around 12 million affected individuals⁸. This figure shows the country is categorized in the intermediate HBV prevalence area with carrier rate of 3-4%⁹ and for hepatitis C antibody it is 3%¹⁰. In another study data shows nearly 60-70% patients with chronic liver disease in Pakistan tend to be positive for anti-HCV¹¹. It has been demonstrated that nearly 50% patients with hepatocellular carcinoma in Pakistan are anti-HCV positive¹².

Provincial prevalence of hepatitis B and C is different for each province. Baluchistan has the high (4.3%) prevalence of Hepatitis B while Hepatitis C is high (6.0%) in Punjab and Sindh (5.0%) KPK (1%) each of Hepatitis B & C¹³. In above study it was also concluded that HCV prevalence in Sindh was 5%, Punjab 6.7%, 1.1 KPK and 1.5 Baluchistan. In another reviewed study Hepatitis B surface antigen prevalence was ranging 1.7-5.5% while Anti Hepatitis C antibody was 0.4-5.4%¹⁴. A study conducted in Rawalpindi/Islamabad shows very high ratio of Hepatitis C (10.42) and Hepatitis B 2.65%. One study conducted in the BMC Hospital¹⁵ in 2003 showed 3.5% prevalence of Hepatitis B. From above figures, it is clear that prevalence of Hepatitis B & C is high in our country, which needs awareness & precautionary measures. As mentioned, aim of the study also was to determine frequency and associated risk factors of Hepatitis B & C in general population, awareness is beneficial especially for those who are seeking jobs & recruitment in Pakistan army.

PATIENTS AND METHODS

The study was conducted at Bolan Medical Complex Hospital (BMCH) Quetta. Duration of the study was from 1st January 2012 to 31st December 2013. This study was designed to collect information regarding the status of Hepatitis B virus (HBV) and Hepatitis C virus (HCV) in patients coming from the general population of different areas of 6 divisions of Baluchistan seeking

treatment in BMCH Quetta. All persons without any discrimination of age, gender and socio-economical status were included in this study. Both indoor and outdoor patients referred by Doctors to the laboratory of the hospital for the HBsAg and anti HCV antibodies screening were candidates of the study. Trained laboratory staff collected the blood samples.

A total of 46319 samples were screened both for HBsAg and Anti HCV antibodies. HBsAg tests were done by Human (Germany) one step kit and Anti HCV tested by Immured (Germany) one step kit. 3078 positive cases both for HBsAg and Anti-HCV were then screened by ELISA for confirmation.

RESULTS

A total of 46319 individuals were screened for both HBsAg and Anti HCV antibodies, 3078 (6.64%) were positive for both. 1631 (3.52%) were positive for HBsAg and 1447 (3.12%) were positive for Anti HCV antibodies. Among these 32886 (71%) were males and 13432 (29%) were females. 2 patients were positive for both HBsAg and Anti-HCV antibodies. Table I & II

Divisional results are different for each Division. High and alarming prevalence for both HBsAg and Anti HCV was noted in the individuals of Naseerabad Division, which were 235 (6.7%) for HBsAg and 211 (6.3%) for Anti HCV. Quetta Division was the 2nd to Naseerabad, the prevalence were 728 (4.1%) for HBsAg and 632 (3.6%) for Anti-HCV. 3rd was the Zhob Division, prevalence were 2.9% for HBsAg and 2.6 for Anti-HCV. 4th was Sibbi Division, prevalence was 2.8% for HBsAg and 2.3% for Anti-HCV antibodies. Kalat was the 5th, prevalence was 2.4% for HBsAg and 2.3% for Anti-HCV antibodies and Makran Division was the 6th in number, prevalence was 2.4% for HBsAg and 2.3% for Anti-HCV antibodies.

2012	Total HBsAg	Positive HBsAg	Negative HBsAg	Total Anti HCV	Positive Anti HCV	Negative Anti HCV
Jan	1240	31	1209	1240	28	1212
Feb	1180	40	1140	1180	36	1144
Mar	1625	38	1587	1625	39	1586
Apr	1872	40	1832	1872	32	1840
May	2115	69	2046	2115	56	2059
Jun	2778	91	2687	2778	87	2691
Jul	3160	113	3047	3160	109	3051
Aug	3287	125	3162	3287	112	3175
Sep	3175	127	3048	3175	119	3056
Oct	2805	118	2687	2805	112	2693
Nov	1831	77	1754	1831	62	1769
Dec	1632	63	1569	1632	58	1574
Total	26700	932	25768	26700	850	25850

Table-I. Monthly tests performed during 2012.

2013	Total HBsAg	Positive HBsAg	Negative HBsAg	Total Anti HCV	Positive Anti HCV	Negative Anti HCV
Jan	1331	42	1289	1331	33	1298
Feb	1456	47	1409	1456	39	1417
Mar	1912	59	1853	1912	42	1870
Apr	2175	75	2100	2175	69	2106
May	2380	98	2282	2380	91	2289
Jun	1530	52	1478	1530	41	1489
Jul	1672	51	1621	1672	47	1625
Aug	1832	62	1770	1832	58	1774
Sep	1591	58	1533	1591	49	1542
Oct	1651	62	1589	1651	48	1603
Nov	1014	48	966	1014	41	973
Dec	1075	45	1030	1075	39	1036
Total	19619	699	18920	19619	597	19022

Table-II. Monthly tests performed during 2013.

Division	No. of patients	Positive HBsAG	Positive Anti HCV	% HBsAg	% Anti HCV
Naseerabad	3513	235	221	6.7%	6.3%
Quetta	17671	728	632	4.1%	3.6%
Zhob	7854	226	202	2.9%	2.6%
Sibbi	6621	186	152	2.8%	2.3%
Kalat	8534	205	194	2.4%	2.3%
Makran	2126	51	46	2.4%	2.2%

Table-III. Divisional Distribution of Positive HBsAg and Anti HCV in Baluchistan & their percentages

DISCUSSION

Pakistan is highly endemic for hepatitis B and hepatitis C infection¹⁶. In the past many studies have been conducted in this field in Pakistan and guidelines for the prevention and control of viral hepatitis were formulated. Even then the graph of hepatitis B and C positive patients is going up in our population. In our country several previously conducted studies have shown different prevalence rates of HBV and HCV infection^{17,18}. Studies conducted in the past shows that prevalence of Anti HCV is high in Punjab while HBsAg is high in Sindh, both HBsAg and Anti HCV prevalence is less in KPK and Baluchistan¹⁹.

Population in Baluchistan province is scattered, poor and majority is illiterate so remain susceptible to all sorts of diseases. The cause of poverty include lack of education poor access to health services large family size gender discrimination and vulnerability to environmental degradation and deterioration of the natural resource base. Viral hepatitis rapidly spreads owing to lack of awareness in population like ours, therefore remains at high risk of acquiring the infection of Hepatitis B and C.

Our study was aimed at determining the seroprevalence of HBV and HCV infection among general population coming from various areas of Baluchistan for seeking treatment in BMCH Quetta. In this study the age range was 3-72 years, 71% were male and 29% were female, and patient Divisional distribution is given in table-III. In our study we focused on patients coming from all six Divisions of Baluchistan. Prevalence of

Hepatitis B and C was very high and alarming in Naseerabad division, which was 6.7% for HBsAg and 6.3% for Anti-HCV antibodies. It could be the link of area with Sindh province, which has high prevalence of above viral infection. 2nd to Naseerabad Division was Quetta Division, Prevalence was 4.1% for HBsAg and 3.6% for Anti-HCV antibodies. The reason for this could be the over-population and improper sanitation of this Division. Although prevalence compare to a study done in CMH Quetta²⁰ is high, reason could be (a) above study was in blood donors and professional donors avoid CMH (b) Patient load is mainly on BMCH. 3rd was Zhob Division, prevalence for HBsAg was 2.9% and for Anti-HCV antibodies 2.6%, it could be the link of people to Karachi and Punjab. 4th and 5th were Sibbi and Kalat Division. And last was the Makran Division, for which the ratio was low, it could be that patients from that area go to Karachi, which is convenient to them.

CONCLUSIONS

The incidence of Hepatitis B and C is comparable to other studies conducted in other areas of Pakistan except Naseerabad Division, which is high and alarming. That Division needs special consideration for prevention treatment and awareness. Quetta Division should be treated on same line.

We recommend the following,

1. Proper screening of blood & blood products for Hepatitis B and C infections should be done with ELIZA to avoid false negative results.
2. No surgical & dental procedures should be

done without screening of the patient.

3. The masses should be educated about Hepatitis and other viral infections.
4. Professional donors should be discouraged.

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