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Research Article

**SEROSURVILLANCE OF VIRAL HEPATITIS IN FEMALES OF  
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Nabi Sabir<sup>2</sup>, Ajaz – ul – Haq<sup>1</sup>, Saima<sup>1</sup>, Roomeella<sup>1</sup>**<sup>1</sup>Center for advanced studies in vaccinology and Biotechnology (CASVAB) University of  
Balochistan Quetta 87300, Pakistan.<sup>2</sup>Educational Review Committee Balochistan**Abstract:**

**Background:** Viral hepatitis is the major cause of morbidity and mortality. Pakistan ranked in intermediate prevalence zone for Hepatitis B and C. Random screening of Viral Hepatitis B and C can be a suitable approach to monitor the prevalence. The present study is conducted to determine the Seroprevalence of HBV and HCV in Females of Quetta.

**Methodology:** A total of 100 samples of blood were tested for the presence of anti-HBV and anti-HCV antibodies using rapid ICT (SD Korean) kits.

**Results:** Seroprevalence of HBV was 5% and HCV was 6%. Age wise prevalence of HBV indicates that, one patient was HBV positive in age group of 41 to 50 years and 3% were positive in age group of 51 to 60 years, while 1% patient was found HBV positive in age group of 61 to 70 years. Whereas in case of HCV one patient was found in 51 to 60 years, three (3) subjects were in 61 to 70 years and 1% was in 71 to 80 years of age group. Out of 67 married patients 6% were HBV positive and only 9% were HCV positive. Out of 33 single patient 3% were HBV positive and none of the single patient were HCV positive. Out of 84 literate patients 2% were HBV positive and 1% were HCV positive. On the other hand, out 16 illiterate 1% were HBV positive and 30% were HCV positive.

**Keywords:** Serosurveillance, Viral Hepatitis, females, Quetta.

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## INTRODUCTION:

Viral *hepatitis* is an inflammation of the liver is - life-threatening worldwide public health problem caused by a HBV and HCV virus. The condition can be self-limiting or can progress to fibrosis (scarring), cirrhosis or liver cancer [4]. The liver is a vital organ that processes nutrients, filters the blood, and fights infections. While the liver is inflamed or broken, its characteristic can be affected. Hepatitis viruses are the most common cause of hepatitis in the world but other illnesses and condition can also cause infection of the liver such as toxic substances (e.g. alcohol, certain drugs), chemicals and autoimmune diseases. At present, six terrible styles of hepatitis virus have been recognized as hepatitis A, B, C, D, E and G viruses (WHO 2001). Viral infections are mostly acute, however, in case of HBV, HCV, and HDV also can result in continual infections and therefore requires selective treatment provisions.

Globally hepatitis is one of the major problems and this is more severe in some countries like Pakistan [5]. There are about 250 and 130-150 million individuals are diseased through *Hepatitis B* and *C*, correspondingly [7]. Globally viral hepatitis results in 1.4 million deaths every year as compared to malaria, HIV and tuberculosis which cause 1.2 million, 1.5 million and 1.2 million deaths each year, respectively [2].

The incidence of hepatitis has reached alarming degrees in Pakistan; on the idea of 220 studies conducted through character researchers in limited cities in Pakistan unlike then Quetta, the superiority of hepatitis is anticipated to the parentage of hepatitis type hepatitis B and hepatitis C which interprets a burden of around 12 million affected people in Pakistan. In Pakistan around 13 million peoples are suffering from hepatitis B and C the infection rate of hepatitis B and C is (7.6%). Regardless of different elements of infection, the reuse of syringes is the most important cause of contamination in Pakistan [6].

The fundamental route of transmission of hepatitis B, C and D is through body fluids, sexual contact, sharing needles, syringes, or other equipment to inject drugs, unscreened blood transfusions or mucosal exposure to infected blood, dialysis, unscreened organ transplantation and child birth [11]. Whilst A, E are transmitted via fecal-oral route and via contaminated meals and water [17]

Occasionally there are no symptoms of hepatitis in the first few weeks after infection -- the acute phase. But when they happen, the symptoms of types A, B, and

C may include : slight abdominal pain, diarrhoea, mild fever, vomiting, fatigue, nausea, muscle or joint aches, loss of appetite, yellow skin or eyes (jaundice) and weight loss. Typically, the acute phase is not hazardous. When hepatitis B and C become chronic, they may cause no symptoms for years. By the time there are any warning signs, the liver may already be damaged. As the disease progresses, chronic hepatitis can lead to acute liver failure, confusion, blood in feces or vomit, swelling of the lower extremities, yellow skin and dark urine. Subsequently results liver cirrhosis and number one hepatocellular carcinoma (hcc) [4].

Diagnosis of hepatitis includes history, physical examination, liver function tests, other blood tests, ultrasound, nucleic acid tests, liver biopsy and elastography [13]. Treatment options are determined by which type of hepatitis you have and whether the infection is acute or chronic. Acute hepatitis B doesn't require specific treatment, while chronic hepatitis B is treated with antiviral medications and can be prevented with vaccination. Antiviral medications are used to treat both acute and chronic forms of hepatitis C. Individuals who develop chronic hepatitis C are typically treated with a combination of antiviral drug therapies. People who develop cirrhosis (scarring of the liver) or liver disease because of chronic hepatitis C may be candidates for a liver transplant and there is no vaccination for hepatitis C.

The Present research is aimed to study the seroprevalence of viral hepatitis in females of Quetta, to have an in lighten in better understanding of the problem and paves the ways for further research and control of viral hepatitis.

## MATERIAL AND METHODS:

### Blood Sampling:

Total 100 blood samples were collected from (outdoor patient department) OPD of female medicine department of Bolan Medical Collage Hospital was visited. Patients were observed by the hospital staff (Duty Doctors) and 100 blood samples were collected with the consent of patients. Suspected Hepatitis Blood samples were brought to CASVAB, University of Balochistan. Serum was separated by centrifugation 6000Rpm for 5-min these serum were transfer into new sterile tubes and these aliquots were immedietly frozen at 80c for further use. The Performa was filled with the Patient's detail like name, address, level of education, ethnicity, ongoing illness, vaccinations, history of any previous surgery, blood transfusion and treatment which helped the patient to diagnose the cause behind the viral hepatitis.

### Immuno- chromatographic Test (ICT)

The Sera screening was done for anti-HBV and anti-HCV antibodies with the help of Immuno-chromatographic tests by using strips from (SD Korean). The positive samples were subjected to further analysis.

### Identification of Hepatitis B and C Virus

One step lateral flow rapid diagnostic SD Korean kits (Immuno-chromatography Test Kits –ICT) for Hepatitis-B (HBsAg) and Hepatitis-C was used to diagnose the identification of Hepatitis B and Hepatitis C virus. Following the instructions on the kits the serum samples inoculated and results recorded.

### Procedure of HBV Test

Removed the test device from foil and placed it in the laminar flow with the help of micropipette 10 µl serum added into the sample wells , and then 4 drops of assay diluents added into the sample wells as they brought to work, purple color was seemed across the result window in the center of the test device. Interpreted test result in 5-20 mints.

### Procedure of HCV Test

Removed the test device from foil and placed it in the laminar flow with the help of micropipette 10µl serum added into the sample wells , and then 4 drops of assay diluents added into the sample wells as they brought to work, purple color was seemed across the result window in the center of the test device. Interpreted test result in 5-20 mints.

### Interpretation of the test

A colored band appeared in the left section window it showed that the test worked properly, this band is control line and the colored band appeared in the right section of the result window, this band is test line.

### RESULTS:

In total 100 samples 5% were HBV positive and 6% were HCV positive

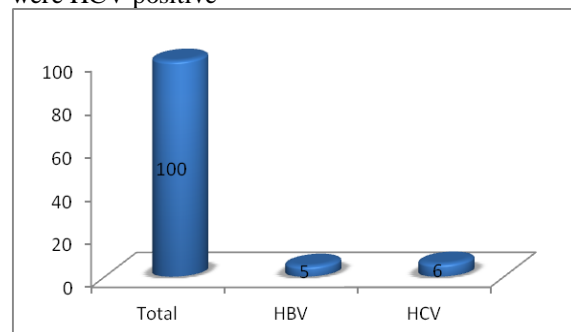


Figure 1: Total prevalence of HBV and HCV in females

Three focus group discussions were held. In Figure 2: Age wise group prevalence revealed that HBV was not

detected in age between 1 - 40, 1% patient was HBV positive in age group 41 – 50 years, 3% patients were HBV positive in age group 51 – 60 years, 1% patient was found HBV positive in age group 61 – 70 years and in age group 71 – 80 years none was found HBV positive.

Age wise group prevalence revealed that HCV was not detected in age between 1 – 50 years, one patient was found HCV positive in age group 51 – 60 years, 4% Patients were found HCV positive in age group 61 – 70 years, and 1% patient was found HCV positive in age group 71 – 80 years in Figure:2

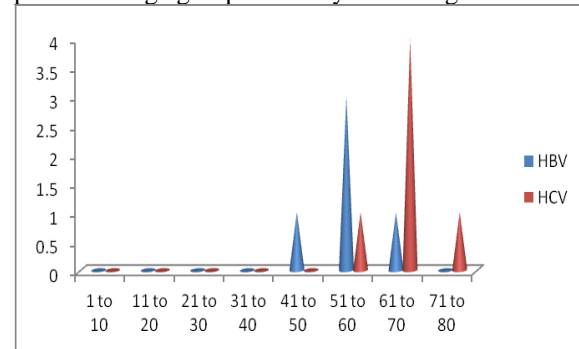


Figure 2: Prevalence of HBV and HCV Age group wise in females.

Out of 100 patients 67 were married and 33 were single.

Out of 67 married patients 6% were HBV positive and only 9% HCV positive. Out of 33 single patients 3% were HBV positive and none of the single patients were HVC positive.(Figure:3)

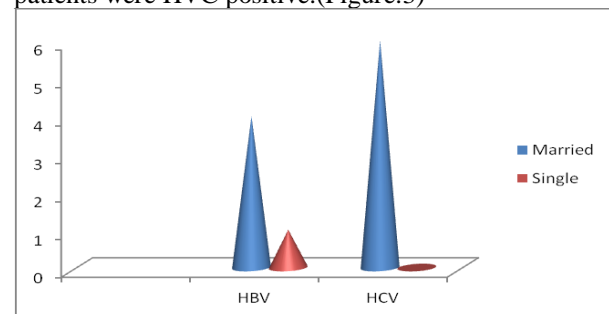


Figure 3: prevalence of HBV and HCV in married and unmarried females

Out of 100 patients 84 were illiterate and 16 were literate.

Out of 84 literate patients 2% were HBV positive and 1% were HCV positive. Out of 16 illiterate patients 19% were HBV % and 30% were HCV positive.(Figure: 4)

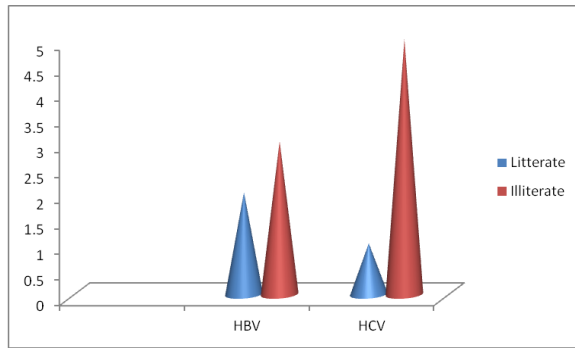


Figure:4 prevalence of HBV and HCV in literate and illiterate females

### DISCUSSION:

HBV and HCV are giant health scrapes that could involve the late sequel of liver cirrhosis and hepatocellular carcinoma [15]. All countries have country wide surveillance structures for HBV and HCV in area, with very comparable objectives but the attributes of the surveillance structures are very heterogeneous. Like blood donors, Epidemiology, prevention and control of Viral Hepatitis [15].

This study affords a huge review of Sero-surveillance of hepatitis B and C in females of Quetta. The effects of this survey used to strengthen the enhanced surveillance of hepatitis B and C among the females of Quetta. In total 100 samples, it has been observed that the seroprevalence rate of anti-HBV is 5% and anti-HCV is 6% by ICT test. Our finding of Anti- HBV prevalence was same as reported by [3] and the result of Anti-HCV prevalence was as same as reported by [11,13] Lower prevalence rate of HBV as results showed by [10] lower prevalence of HCV than our result was observed by [2,10]. In the age wise distribution of HBV one patient was found between age of 41-50years, 3 patients were positive between age of 51 – 60 and one was found positive of the age group of 61 – 70 years. Whereas in HCV one patient was positive in the age group of 51 – 60 years, 4% patients were found in 61 – 70 years and 1% was positive in age group of 71 – 80 years. And the age group of HBV positive is as same as [10] HVC positive result is as same as [14,1]. Lower result of HBV, HCV positive by age wise is reported by [14]. The prevalence of HBV and HCV indications is excessive in older age groups and this could be due to the greater possible exposures and lack of knowledge of HBV and HCV infection in advance decades. While the marital status showed the result out of (67) 6% were HBV married and HCV was 9% .Out of (33) 3% were single women and HCV, none were HCV single. This study result of HBV marital status is similar with [18]. The less prevalence of HBV infection matched with the

comparatively high prevalence of HCV infection recommends that diverse means of transmission are sever in these inhabitants due to the sexual or vertical transmission of HVC and the parenteral transmission of HBV. According to prevalence literacy rate of (84) 3% were HBV positive and (1%) were HCV positive. Out of 16 illiterate patients 19% were HBV positive and 31.25% were HCV positive) On account of literacy rate of HBV and HCV our finding is close to [19]. It claimed that diagnosed from one of the research that contributor with formal schooling even until primary degree had higher awareness of health dangers than individuals who did now not have education . Unfortunately the literacy charge of Pakistan is 43% [8] and majority of the population may be unaware about the overall knowledge of their spread. The medium of understanding via newspapers, pamphlets, banners and Television awareness is not applied successfully in practical life, both because of barriers of language variations for the duration of the United States, affordability or illiteracy amongst the majority. For this reason, the consequences of illiteracy are profound, even probably existence-threatening. For screening anti-HBV and anti-HCV antibodies ICT test are used. And the one step device ICT are more suitable in Pakistan as it is underdeveloped country as it faces lack of facilities. Most global localities ensued a basic set of data (Patients ID, date of birth, femininity, locality of house, vaccination, status), but definite measurements on illiteracy, marital status and age wise prevalence are lacking. This kind of information is vital for informing and guiding prevention rules, and need to be introduced Nationwide and Universally.

### CONCLUSION:

In our present study data suggest a high prevalence of Hepatitis B and C in Quetta. It is of utmost importance to continue the Serosurveillance of viral Hepatitis B and C with specific tests to counsel females who are positive of any of the above measures to reduce the chance of spreading this dreadful disease. It is concluded that the prevalence of HBV and HCV infection was investigated in the higher age group, mostly married and illiterate individuals.

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