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Research Article

**PREVALENCE OF HBV AND HCV AMONG GARBAGE  
COLLECTING CHILDREN****Farooq Mehboob Jan<sup>1</sup>, Zulfiqar Ali<sup>2</sup>, Imran Khan<sup>1</sup>, Summiya Allah Yar<sup>1</sup>, Kalsoom Baloch<sup>1</sup>, Muhammad javed khan<sup>1</sup> and Hamza Zahid<sup>3</sup>.**<sup>1</sup>Institute of Biochemistry, University of Balochistan.<sup>2</sup>Directorate of Agriculture Research Usta Muhammad, Pakistan.<sup>3</sup>Bolan Medical Complex Hospital Quetta Pakistan.**Abstract:**

*Viral hepatitis may be the cause of infection among children and adults presenting with hepatic disease. The Chronic hepatitis B virus (HBV) infection is a major risk factor for the development of hepatocellular carcinoma (HCC) and more than 350 million people are chronically infected with HBV worldwide. Higher rates are found among individuals in the population identified as at-risk groups. Early discovery through screening in these groups is essential in alleviating the potential burden due to complications of chronic hepatitis B and C. The main purpose of the current study was to evaluate the prevalence of hepatitis B and hepatitis C among the garbage collecting children in Quetta city, since in this regard no previous work has been reported. It would be pertinent to mention here that the target group was Afghani children. Total 200 blood samples were collected for sake of screening HBV and HCV. Out of these samples 32 (16%) were found positive for HBsAG while 38 (19%) children were positive for HCV. One of the main reasons that came forward during the study was that children were the inhabitants of slums with poor hygienic conditions and their profession was to collect garbage from various areas of Quetta city. Upon further investigation it came forward that they were previously vaccinated for hepatitis. This study has been done with the objective to bring the positive cases of hepatitis and to increase awareness about hepatitis in order to decrease the rate of prevalence of HBV and HCV among garbage collecting children at Quetta city.*

**Key words:** HBV, HCV, prevalence, Quetta city.**Corresponding author:****Farooq Mehboob Jan,**  
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**INTRODUCTION:**

Both hepatitis B (HBV) and C virus (HCV) affect the liver and can cause acute and chronic hepatitis. People with chronic HBV or HCV infection may transmit the virus to others and are at risk of developing serious liver disease such as cirrhosis or hepatocellular cancer (HCC) [1, 2]. Transmission of HBV and HCV can occur via sexual or blood–blood contact, or vertically (mother-to-child) [3, 4]. In Europe, the high-risk groups for acquisition of HBV include men who have sex with men (MSM) and people who inject drugs (PWID). The key risk groups for HCV include PWID, people in prison and MSM.

The risk of developing chronic HBV infection depends on the age at which people are infected, with 90% of infants infected at birth developing chronic infection, compared with 1–10% of those infected at an older age or as adults [5, 6]. Globally 248 million people were estimated to be chronically infected with HBV in 2010 [7]. Approximately 780 000 people die each year from HBV infection, mostly from chronic HBV infection-related sequelae such as cirrhosis and HCC [8].

Initial infection with HCV is often asymptomatic or mild (70–90% of cases); however, the majority of those infected with the virus (70–80%) develop chronic infection and, over a period of 20–30 years, 10–20% on average will develop cirrhosis and 1–5% will develop liver cancer [2]. An estimated 184 million people globally have chronic HCV infection [9] and 350 000–500 000 deaths are attributable each year to HCV-related liver diseases [8]. The recent development of more effective HBV and HCV treatment means that elimination of chronic viral hepatitis in Europe is now a possibility [12, 13]. However, 65–90% of infected people remain unaware of their infection and models predict that associated mortality will continue to increase as the current infected population ages [12, 14]. However, 65–90% of infected people remain unaware of their infection and models predict that associated mortality will continue to increase as the current infected population ages [12, 15, 16]. Achieving potential population health gains through treatment will require significant expansion of screening and treatment among the most affected populations.

Since, very less work has been reported on the prevalence of HBV and HCV among garbage collecting children particularly at Quetta, therefore, the main purpose of designing current study was to evaluate the prevalence of HBV and HCV among garbage collecting children of Quetta city. This study

has also been conducted with the sole objective that other researchers may get some insight about the prevalence of HBV and HCV, which may assist them in taking the research further.

**MATERIAL AND METHODS:**

In this cross-sectional study a total of 200 participant with a confirmed garbage children were included in this study in which all were male with the different age group of 10 years to 24 years old, Ethical approval for the study was obtained from the Medical Officer of BMC and written informed consents were obtained from all guardians/parents of the children prior to data and sample collection. The patients were subjected to a detailed history, a thorough clinical examination and biochemical investigations. Special emphasis was given on personal history (age, gender, and location), family history (family history of similar conditions), clinical data were recorded.

For laboratory assessment, 7ml of blood was obtained using sterile venipuncture into a tube. Sera were separated, all quoted and stored at –20° C until used. For each patient, liver enzymes (alkaline Phosphatase, alanine transaminase and Bilirubin). Serum was collected into tube for serological testing and centrifuged 3000 rpm for at least 20 minutes. The serum was kept at –20°C until the time of the assay. For the serological tests HBsAg and Anti-HCV were measured by the enzyme linked immunosorbent assay ELIZA (Diamate 710) following the manufacturer's instructions. Briefly, the instrument uses a disposable pipette tip called the solid-phase receptacle, which is coated with antigens and also acts as a pipetting device. All the ready-to-use reagents are contained in a sealed strip. The specimen (serum or plasma) is added to the reagent strip, and all the following steps of the test are done automatically, without any further manipulation.

**RESULTS AND DISCUSSION**

HBV and HCV infections are serious public health problems which affect approximately 2 billion and 130 - 170 million people across the globe respectively (Shepard *et al.*, 2005; Trepo *et al.*, 2014) [17, 18]. Data on the prevalence of hepatitis viruses among patients presenting with hepatic disease in Quetta city is very limited. In this study, the prevalence of chronic hepatitis in HCV positive patients was higher than HBV. This In the current study a total of 200 blood samples of garbage collecting children were tested for HBV and HCV. The age of all the children was under 15 years. All the selected group of children was from Afghan refugees since they are very commonly found at garbage site and this is the main source of income for

their livelihood. None of the child was married and their physical condition was very poor and un-hygienic.

#### Hepatitis B:

The results of the present study were very promising. For the identification of HBV to 200 were screened.

Out of 200 blood samples 32 (16%) (Fig. 1) were found positive for HBsAG (Fig. 1). For screening the blood samples of garbage collecting children of Quetta city Accurate™ rapid chromatographic immunoassay test was used.

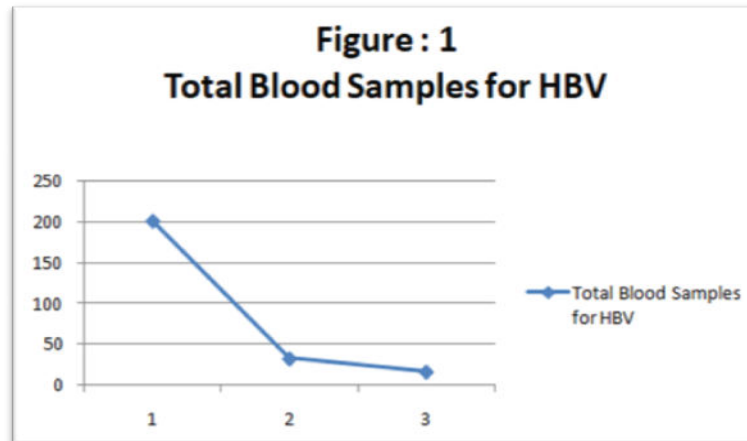


Figure 1. Graphical representation of HBV positive and negative blood samples.

#### Hepatitis C:

The results of HCV were also convincing. In this case 200 blood samples were initially screened. Furthermore, 38 (19%) (Fig. 2) children were positive for HCV out of 200 sample (Fig. 2). All the children were un-educated and unaware of the basic knowledge about HCV. Accurate™ rapid chromatographic immunoassay test was used for testing the blood samples for HCV.

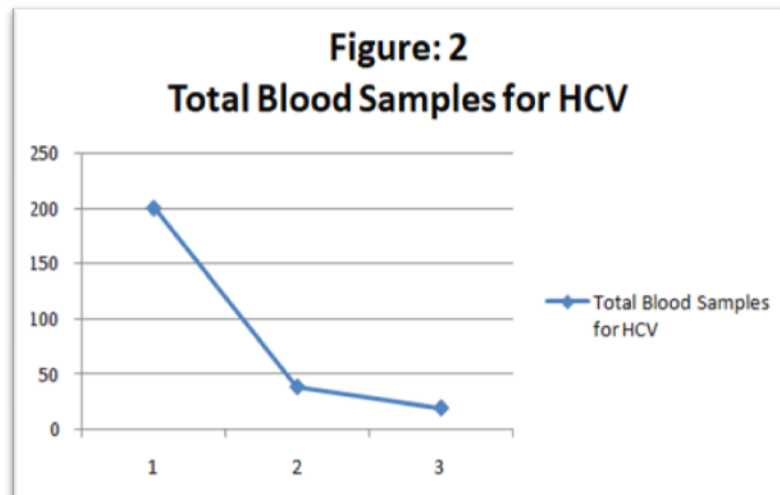


Figure 2. Graphical representation of HCV positive and negative blood samples.

**Table 1.** Showing complete results of HBV and HCV

Type of disease	Total number of blood samples	Positive samples	Negative samples	Percentage
HBV	200	16	184	16%
HCV	200	38	162	19%

**REFERENCES:**

1. EASL Clinical Practice Guidelines. Management of chronic hepatitis B virus infection. *Journal of Hepatology* 2012; 57: 167–185.
2. EASL Clinical Practice Guidelines. Management of hepatitis C virus infection. *Journal of Hepatology* 2014; 60: 392–420.
3. World Health Organization ([http://www.who.int/mediacentre/factsheets/fs204\\_Jul2014/en/](http://www.who.int/mediacentre/factsheets/fs204_Jul2014/en/)). Accessed June 2015.
4. World Health Organization (<http://www.who.int/mediacentre/factsheets/fs164/en/>). Accessed June 2015.
5. European Centre for Disease Prevention and Control. Surveillance and Prevention of Hepatitis B and C in Europe. Stockholm: ECDC, 2010.
6. Edmunds WJ, et al. The influence of age on the development of the hepatitis B carrier state. *Proceedings Biological Sciences* 1993; 253: 197–201.
7. Schweitzer A, et al. Estimations of worldwide prevalence of chronic hepatitis B virus infection: a systematic review of data published between 1965 and 2013. *The Lancet* 2015; 386: 1546–1555.
8. Lozano R, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet* 2012; 380: 2095–2128.
9. Mohd Hanafiah K, et al. Global epidemiology of hepatitis C virus infection: new estimates of age-specific antibody to HCV seroprevalence. *Hepatology* 2013; 57: 1333–1342.
10. Wedemeyer H, et al. Strategies to manage hepatitis C virus (HCV) disease burden. *Journal of Viral Hepatitis* 2014; 21(Suppl. 1): 60–89.
11. Kohli A, et al. Treatment of hepatitis C: a systematic review. *JAMA* 2014; 312: 631–640.
12. Wolfram I, et al. Prevalence of elevated ALT values, HBsAg, and anti-HCV in the primary care setting and evaluation of guideline defined hepatitis risk scenarios. *Journal of Hepatology* 2015; 62: 1256–1264.
13. Wolfram I, et al. Prevalence of elevated ALT values, HBsAg, and anti-HCV in the primary care setting and evaluation of guideline defined hepatitis risk scenarios. *Journal of Hepatology* 2015; 62: 1256–1264.
14. European Liver Patients Association (ELPA). Report on Hepatitis Patient Self-Help in Europe 2010 (<http://www.hepbcpa.org/wp-content/uploads/2011/11/Report-on-Patient-Self-Help.pdf>). Accessed September 2015
15. Shepard, C. W., Finelli, L., & Alter, M. J. (2005). Global epidemiology of hepatitis C virus infection. *The Lancet Infectious Diseases*, 5(9), 558–67.
16. Trepo, C., Chan, H. L. Y., & Lok, A. (2014). Hepatitis B virus infection. *The Lancet*, 384(9959), 2053–2063.