

PREVALENCE OF HEPATITIS B AND HEPATITIS C CARRIER STATE AMONG HEALTHY BLOOD DONORS IN RAHIM YAR KHAN

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ABSTRACT

Background: The carrier state of hepatitis B and C has been emerging in our community. Thousands of deaths have occurred as the consequences of these viral infections. **Objective:** To evaluate the prevalence rate of hepatitis B and C among healthy blood donors. **Subjects and Methods:** A cross-sectional study was carried out at Sheikh Zayed Medical College Hospital/Rahim Yar Khan. The data was taken from the Blood transfusion Units from the District and Tehsil Headquarter Blood Transfusion Units located at Sadiqabad, Khanpur and Liaqatpur Hospitals. Method: The subjects were the healthy young blood donors. They were screened for HBsAg and anti-HCV using ICT screening kits. The data was collected from the monthly Blood Donor Reports present in the Blood Transfusion Units. **Results:** A total of 2,17,847 healthy, young blood donors from 1st January 2009 to 31st August 2014 were screened for HBV and HCV. Of these, 5143 (2.4%) were found to be positive for HBsAg and 6407 (2.9%) were positive for anti-HCV. At the District Unit (draining mostly urban areas), 2,03,522 subjects were screened. Of these, 4449 (2.2%) were positive for HBsAg and 5611 (2.7%) were positive for anti-HCV. For Tehsil Units (draining mostly rural areas), total 14,325 subjects were screened, of these 694 (4.8%) were positive for HBsAg and 789 (5.5%) were positive for anti-HCV. **Conclusion:** Our study showed that prevalence of HBV and HCV infection among healthy blood donors is high and it is comparatively low in urban areas as compared to peripheral rural areas of district Rahim Yar Khan.

Key Words: Hepatitis B Virus, Hepatitis C Virus, HBsAg, Anti-HCV, Blood Donors

INTRODUCTION

The prevalence of hepatitis B and C viral infections in Pakistan is emerging as an alarming calamity in our community. Thousands of deaths have occurred as the consequences of these viral infections in shape of hepatic failure and hepatocellular carcinoma. HBV is the main cause of primary hepatocellular carcinoma worldwide, with about 350,000 new cases attributable to HBV each year.¹ Cirrhosis develops in 40% of cases suffering from chronic HBV infection.² For HCV infection, about 20% patients with chronic hepatitis develop cirrhosis and 10% develop hepatocellular carcinoma.¹ As for as the prevalence rates of HBV and HCV in Pakistan are considered, various studies in different parts of the country have been carried out. In a met-analysis the prevalence rate in general population of Pakistan was found to be 1.1-11.9% for HBV and 2-13.5% for HCV in different categories of population.³ In other studies by the prevalence rate

for HCV was 4-4.9% in Pakistan.^{4,5} This study was carried out to determine the prevalence of B and C among healthy blood donors of district, Rahim Yar Khan. The study is the reflection of the present status of the HBV and HCV carriers and is also reflection of preventive and therapeutic measures adopted so for to control these viral infections.

PATIENTS AND METHODS

This cross-sectional study was carried out taking the data from the Blood Banks of the District Rahim Yar Khan from 1st January 2009 to 31st August 2014. Healthy young people come to the Blood Banks for blood donation. They are screened for HBV, HCV and HIV. Therefore, the data was collected observing the record of the Blood Banks of Sheikh Zayed Medical College Hospital, Rahim Yar Khan, and Blood Transfusion Units located at Tehsil Headquarter Hospitals (THQHs) Sadiqabad, Khanpur, and Liaqatpur of Rahim Yar Khan District, Sheikh Zayed Medical College/Hospital, caters a population that is from or close to urban areas as compared to tehsil head quarter hospitals which cater mainly rural areas.

The data was collected from the monthly statements of "Blood Screening Forms" of the Blood Transfusion Units of above mentioned centres. The screening tests for the HBsAg and anti-HCV were

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Received: 20-05-2014

Accepted: 21-08-2014

carried out by using “AbonBiopharm (Hangzhou) Co.,Ltd., China”, Plasma/serum was used for screening purposes.

The overall prevalence of HBV and HCV infection was calculated and presented as percentage along with prevalence for each tehsil of district.

RESULTS

A total of 217,847 healthy blood donors were screened during study period of 6 years. Of 2,17,847 subjects screened, 5143 (2.4%) subjects were positive for HBV and 640 (2.9%) were positive for HCV. (Table I) At SZMC/H, Rahim Yar Khan, of 2,03,522 screened subjects 4449 (2.2%) were positive for HBV and 5611 (2.7%) for Anti HCV. At the peripheral centres (Tehsil Headquarter Hospitals), of 14325 screened subjects, 694 (4.8%) positive for HBV and 789 (5.5%) positive for HCV. (Table II)

Table I: Prevalence of HBV and HCV among healthy blood donors

Centres	Total screening	HBV	HCV
SZMC/H,RYK	2,03,522	4449 (2.2%)	5611(2.7%)
THQH Sadiqabad	4,920	255305 (5.18%)	305 (6.1%)
THQH Khanpur	6,471	245 (3.7%)	329 (5%)
THQH Liaqatpur	2,934	194 (6.6%)	155 (5.2%)
Total	2,17,847	5,1436 (2.4%)	6400 (2.9%)

Table: II: Prevalence of HBV & HCV

Overall	2.4	2.9
SZMC/H, RYK (mainly urban)	2.2	2.7
THQHs, RYK (mainly rural)	4.8	5.5

DISCUSSION

This study was planned to determine the prevalence of HBV and HCV infection in healthy blood donors in district Rahim Yar Khan and compared its prevalence among mostly urban with mostly rural areas i.e Sheikh Zayed Hospital verses Tehsil hospitals. It revealed that prevalence rate of both HBV and HCV was higher in rural areas (THQ Hospitals) than to the comparatively urban area SZMCH, Rahim Yar Khan.

A meta-analysis of studies⁵ from 1980 to 2004, with 47043 subjects screened for HBV and HCV from all parts of the country. The prevalence rate of HBV and HCV in Punjab was 2.4% and 6.7% respectively, and HBV prevalence rate in Rahim Yar Khan was 4.7%. This result is similar to that of our THQHs (rural areas) results (4.8%) for HBV and (5.5%) for HCV. The decline in the rate in urban areas (SZMC/H) may be due to effective preventive measures such as vaccination programs and awareness of people through media to adopt preventive measures or both.⁶ In a study, by Illyas⁷ et al, conducted in 2011, 2502 college students in Gujranwala were screened. Among those, the prevalence rate was 1.76% for HBV and 2.32% for HCV. This is less than our figures i.e., 2.4% for HBV and 2.9% for HCV. In a study, by Syed Asad Ali⁸ et al, the meta-analyses from August 1994 to September 2007, the overall prevalence rate of HBV and HCV was 2.4% and 2.1% respectively; for blood donors it was 2.4% and 3.0% for HBV and HCV respectively. These results are very close to our overall rate of HBV and HCV, i.e., 2.4% and 2.9%. In a study, by T. Butt⁹ et al, a total of 5707 young adults of 17-22 years of age were screened for HBV and HCV. The prevalence rate was found to be 1.7% and 2.9% for HBV and HCV respectively. These results are similar to our study.

In a study, by Irfan Ali Mirza¹⁰ et al, carried out in Southern Punjab; total 1821 subjects were screened for HBV and HCV. The prevalence rate was found to be for HBV, 5.9% and for HCV, 2.5%. In Rahim Yar Khan, of 213 subjects, 7 (3.2%) were positive for HBV and 6 (2.8%) were positive for HCV. In our study, the overall results for HCV (2.9%) are similar to that of the above study. But for HBV, the percentage is higher than our results. But our results for THQHs (rural areas), i.e., 4.8% are much higher than those of found in this study (3.2%) but lower than the overall percentage for HBV (5.9%) of this study.

In another study, carried out in NWFP (now Khyber Pakhtoon Khawa) in 2007 by Javed Iqbal Farooqi¹¹ et al, the prevalence rate in the screened subjects were as follows: in general population HBV, 2.28% and HCV 3.19%, whereas, in healthy donors HBV, 1.83% and HCV, 2.34%.

For the prevalence rate of HBV at Rahim Yar Khan centres (SZMC/H) is almost similar to (2.4%) but higher than in the healthy donors. Moreover, the

prevalence rate is much higher (4.8%) than are found in that study. Similarly, the prevalence rate for HCV infection in all centres (2.9%) is lower than found in the general public but higher than found in the donor group of the study. This indicates different parts and different groups of people have different prevalence rates; as is shown in the study conducted by Altaf Bosan² et al. In this study the prevalence rate for HBV was in range of 1.1-11.9% and that of for HCV was in the range of 2-13.5%.

CONCLUSION

Our study showed that prevalence of HBV and HCV infection among healthy blood donors is high and it is comparatively low in urban areas as compared to peripheral rural areas of district Rahim Yar Khan

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