Incidence of Hepatitis B among Malarial Patients in Islamabad

Fariha Dilshad¹, Muhammad Irfan¹, Mazhar Qayyum¹, Asghar Shabbir², Asfa Ashraf²,³, Azara Iqbal³, Muhammad Naeem Iqbal³,⁴, Ali Muhammad⁵

¹Department of Zoology, PMAS Arid Agriculture University, Rawalpindi 46000, Pakistan.
²Department of Zoology, Lahore College for Women University, Lahore 54000, Pakistan.
³Pakistan Science Mission (PSM), Noor Kot 51770, Pakistan.
⁴The School of Life Sciences, Fujian Agriculture and Forestry University, Fuzhou 350002, China.
⁵Department of Zoology, University of Poonch, Rawalakot 12350, Azad Kashmir, Pakistan.

Received: 03.Aug.2016; Accepted: 19.Aug.2016; Published Online: 30.Aug.2016
*Corresponding author: Muhammad Irfan; Email: muhammadirfan11@gmail.com

Abstract
The chronic nature of hepatitis B infection influences the clinical approach and management of this disease. The current study was conducted to determine prevalence of hepatitis B among malarial patients in Islamabad. A total of 50 malarial patients were studied by HBsAg assay. Higher prevalence of HBV was found in the 46-60 years age group for both males and females. Among male patients, rate of infection was 25% while in females rate was 23%. The lowest infection rate was recorded in malarial patients older than 60 years. Overall, ratio of infection in males was higher than females. Expected reason of higher infection rate in this age group 46-60 years is the weakness of immune system to fight the environmental as well as pathogenic conditions. Other causes may include the hygienic conditions and residential area responsible for developing malaria. The residential area and hygienic conditions are the necessary components for the health of the residents. Heredity components are also considered in this case. The increasing rate of the disease may decrease with awareness about the disease, its early diagnosis, importance of personal and environmental hygiene and proper maternal checkup.

Keywords: HBV in Islamabad, Transmission, Incidence, Blood transfusion, Malaria.

INTRODUCTION
Five hepatitis viruses (hepatitis A to E) are responsible for liver disease worldwide. Among them, approximately 350 million chronic infections are caused by hepatitis B virus (HBV) and over one million annual deaths, mostly as a result of end-stage liver disease and liver cancer (Park and Rehermann, 2014). Hepatitis B virus (HBV) and hepatitis C virus (HCV) are risk factor for Hepatocellular Carcinoma (HCC) and cirrhosis (Ali et al., 2015). It is reported that elevation of liver enzymes responsible for liver disorders (Toor et al., 2016). Lead acetate alters the serum AST and ALT levels by affecting the liver (Khanam et al., 2016). Hepatitis (HBsAg) positive individuals are considered to be hepatitis B carriers and are at high risk of getting chronic hepatitis B infection (Lok and McMahon, 2007). The major route of transmission of hepatitis B is through body fluids (Travasso, 2014). Malaria is a major health problem worldwide. Most regions endemic for malaria are also endemic for other communicable diseases (Boraschi et al., 2008).

Prevalence of hepatitis B in Pakistan is 2.5% according to a study by Pakistan Medical Research Council (Farhat et al., 2014). For screening of HBV infection, HBsAg detection assays are the most commonly used assays in most of the public hospitals in Pakistan. Several efforts including vaccination of newborns and high risk groups, patient safety, use of auto-disposable syringes, public health education, blood screening for donation and free treatment of needy patients are being done to stop infection (Qureshi et al., 2010), but it is necessary to take more steps to stop the growing infection due to high infection rate and prevalence.

There is an astonishing dearth of facts about hepatitis occurrence, although more is known about its risk factors. Therefore the present study was conducted to determine the prevalence of Hepatitis B among malarial patients in Islamabad.
MATERIALS AND METHODS

Study Area
The present study was carried out in Islamabad which is located in northern part of Punjab. It has occupied an area of 50160 Sq.Km and has total population of 3.5 million. Most of rain fall occur during summer rainy season (July-September) and winter rain fall (December-February). However, hot climate is prevalent during May to June.

Study Period
A cross-sectional study was carried out in adult patients with malarial disease attending tertiary care hospital in Islamabad. The present study was carried out from September, 2015 to January, 2016. During this period 50 samples of malaria positive patients were examined. The required data on the age, sex, area of the patient was sought on the prescribed questionnaire.

Blood Analysis
The blood samples (5ml) were obtained from anticubital vein in EDTA coated vaccinator and the serum was used to perform HBsAg assay. ELISA kits (Merck) were used for in vitro detection of HBsAg in serum (Muhammad et al., 2013).

Statistical Analysis
The data obtained was subjected to appropriate statistical analysis using Statistical Package for the Social Sciences version 16.0 (SPSS, Chicago, IL).

RESULTS AND DISCUSSION
The results of the present study revealed that higher prevalence of HBV was found in the 46-60 years age group for both males and females. Among male patients, rate of infection was 25% while in females rate was 23%. The lowest infection rate was recorded in malarial patients older than 60 years. Overall, ratio of infection in males was higher than females (Figure 1). A previous study reported 2.5% prevalence of hepatitis B in Pakistan (Farhat et al., 2014). In Pakistan HBV genotype D predominates among other genotypes (Mumtaz et al., 2011).

Various studies have reported the prevalence of hepatitis in different areas of world. Kamat et al. (2014) reported that mean age of patients in the study group was 41 years in Mumbai, India. A study by Sharif et al. (2015) demonstrated that 4.5% of the total population had co-infection of hepatitis and malaria with higher prevalence observed among the males with 3.0% in Nigeria. Similarly the percentage of co-infection HBV with diabetes was reported to be 12.80% (Muhammad et al., 2013).

In this study malarial patients with confirmed Hepatitis B viral infection were studied for clinical as well as necessary lab finding and risk factors for HBV during six weeks period. Close monitoring of young patients with the HBV especially susceptible to nosocomial infection may lessen case fatality. Chronic diseases like liver infection, sickle cell anemia etc. are also suggested as risk factor for hepatitis B viral infection. In this study majority of Hepatitis B viral infection patients have these preexisting diseases. There is no robust evidence that the clinical status of primary hepatitis B-related liver disease is affected during malaria infection. In addition, the influence of HBV infection on malaria signs has not been addressed (Andrade et al., 2011). In order to check HBV infection and its related diseases, many Asian countries have started vaccination programs (Hennessey et al., 2013). Although the program has not yet stretched some rural areas, HBV vaccination has diminished the rate of HBsAg positivity 10% to 1% (Kane et al., 2013). This venture has surely required a robust political, social and economic obligation, but the results achieved to date are really striking.

CONCLUSION
It is concluded that education of clinicians is essential for the recognition of risk factor of Hepatitis B Viral infection for early diagnosis and management. In elderly patients, blood group and cross matching and blood transfusion should be carried out in routine precautions which may be helpful in emergency. This study provided information about the status of HBV among the inhabitants of Islamabad. Moreover, based on this study the preventive measure may be recommended to control the disease in local population.

ACKNOWLEDGEMENT
The authors are highly thankful to Prof. Mazhar Qayyum, Department of Zoology, PMAS Arid Agriculture University, Rawalpindi, Pakistan for his kind guidance during this work.

CONFLICT OF INTEREST
There is no conflict of interest.
REFERENCES


Travasso, C., 2014. Indian government plans 10 regional laboratories to estimate hepatitis burden. BMJ, http://dx.doi.org/10.1136/bmj.g5021