PREVALENCE OF HEPATITIS B INFECTION IN A TERTIARY CARE HOSPITAL IN BIHAR

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ABSTRACT

BACKGROUND
Hepatitis B virus (HBV) is one of the major global public health problems. HBV infection is the 10th leading cause of death and HBV-related Hepatocellular carcinoma (HCC) is the 5th most frequent cancer worldwide. The present study was conducted to determine the seroprevalence of HBV in high-risk groups.

MATERIALS AND METHODS
Serum samples were collected from clinically diagnosed Hepatitis patients and screened for anti-HBV antibodies using Immunochromatographic card test and confirmed by ELISA.

RESULTS
Among 400 serum samples collected, 136 (34%) were reactive for antigen to HBV. All 136 sero-reactive patients belonged to a high-risk group, as they were undergoing blood transfusion.

CONCLUSION
This study was an effort to highlight the main risk factors that led to Hepatitis B Virus infection. The role of universal precaution cannot be overemphasised. However, this study suggests that strategy can be instituted to identify the high-risk population with past history of jaundice or contact with jaundiced person (household contact).

KEYWORDS
Hepatitis B, ELISA, Prevalence.

biochemical evidence of liver disease and persists throughout the clinical illness. Persistence of HBsAg after the acute illness, may be associated with clinical and laboratory evidence of chronic hepatitis for variable period of time.

MATERIALS AND METHODS
This retrospective descriptive study was conducted in Department of Microbiology, Anugrah Narayan Magadh Medical College and Hospital, Gaya, from a period of August 2015 to July 2016. The serum sample were screened for antigen detection to HBV using SD BIOLINE HBsAg kit. The positive serum samples were confirmed by ELISA using HBV Micro-ELISA. The data was recorded from Blood Banks where patients come for blood donation, from the log book and computer records from over one year duration from August 2015 to July 2016. Regarding patients testing positive, records showed that infection was received mostly through sexual contact and most of the people had not received any immunisation.

Statistical Test
Statistical analyses were done using SPSS 7. Results were calculated in proportion and percentage.

RESULTS
Serum samples from 136 patients were reactive for antigen to HBV out of the total 400 patients. The results were confirmed by ELISA. The prevalence rate for HBV infection was 34%; 340 patients out of the 400 patients were undergoing blood transfusion and all the 136 patients who were reactive for HBV antigen belonged to this group. The prevalence rate among haemodialysis patients was 46%. All these 136 patients were non-reactive for co-infection with HIV and Hepatitis B.

DISCUSSION
Viral Hepatitis is an infection which is transmitted by the parenteral, perinatal or sexual route. One of the aetiological causes for infective Hepatitis is Hepatitis B Virus (HBV). The prevalence in the present study was 34%. All the patients found positive for Hepatitis infection were donor patients. The prevalence of the infection in blood donor patients was 46%. Patients on recipient are at an increased risk for acquiring hepatitis B infection as a result of blood transfusion. These patients are also anaemic and weak, often requiring multiple blood transfusions making them susceptible to acquire the infection. A significant relation was found between blood or blood product transfusion and Hepatitis B infection; 10 (20%) of the cases received blood (or any of its products) compared to 4 (4%) of the controls. Thus, Blood transfusion is a significant risk factor for Hepatitis B infection by univariate analysis. This might be due to improper screening of blood before transfusion.

A study conducted in Nigeria among pregnant women showed that the history of blood transfusion is a significant risk factor. As well a cross-sectional study done among health care workers in Uganda showed same results. This finding support the conclusion by Al-Hindi and Colleagues, that the routine tests screening of blood units and its products to detect Hepatitis B infection by HBsAg test alone is not enough and there is a need to consider introducing Anti-HBc test and HBV DNA in order to discover the occult HBV, to minimise the risk of HBV transmission by blood and its products.

In Brazil, it was shown that blood transfusion is among the predictors of the HBV exposure. In two different studies conducted in Italy, blood transfusion and surgical intervention were among the independent risk factors. The usual immunisation schedule recommended for prevention of Hepatitis B consists of three doses of the vaccine: the first two doses one month apart, while the third dose is given after 5 months of the second dose. Infants born to infected mothers may be given Hepatitis B immunoglobulin (HBIG) as an additional protection.

The duration of immunity after Hepatitis B vaccination was studied by measuring the decline of Anti-HBs level finding that there is rapid decline in the first year after the third dose of vaccination among adults, then gradual decrease continued after 5 years. The concentration becomes < 10 mIU/ mL in 7% - 50% of the vaccines.

No specific management for acute hepatitis, but just supportive and symptomatic treatment is indicated. In terms of chronic infection, many antiviral drugs were studied and proved to reduce the HBV replication and normalise the liver enzymes including alpha-2b interferon and nucleotide analogues such as lamivudine.

CONCLUSION
The present study shows that the known risk factors are also significant in the transmission of Hepatitis B in Bihar. The role of universal precaution cannot be overemphasised. It revealed that several high-risk behaviours and practices for the transmission of this infection are significantly more prevalent among the cases compared to the controls. Our data indicates that a history of blood transfusion, history of hospitalisation, history of surgery, past treatment of STD and family history of hepatitis B are important risk factors for HBV infection in our area. The adoption of infection prevention standards as strategy is the key of Hepatitis B prevention and other blood-borne pathogens, while health education for the personal hygiene will protect the public emphasising on the vaccination of the risky behaviour groups as a first protective line. However, this study suggests that strategy can be instituted to identify the high-risk population with past history of jaundice or contact with jaundiced person (household contact). This study can help in monitoring the population to detect dearing of HBsAg or followup for further intervention to prevent chronic HBsAg carrier state and its complications. Hepatitis B infection is still a public health problem despite the availability of the Hepatitis B vaccine, which is largely attributed to its asymptomatic course and carrier patients. Identification of Hepatitis B risk factors and development of prevention strategies based on epidemiological studies can form the basis for developing a comprehensive prevention strategy to prevent blood-borne pathogen transmission, such as HBV and HIV in Bihar. This study can enable us to identify the high-risk segment of the population and offers a window of opportunity for intervention to minimise the impact of the disease in the community.
REFERENCES


