M D J

Incidence of HBV among Patients from Maxillofacial Clinic in Ramadi Teaching Hospital

Dr. Dunia W.S. AL- Fayad. *
Dr. Hala F. Ahmed. *

Abstract

Viral hepatitis is a major public health problem, occurring endemically in all areas of the world. Unlike hepatitis A, hepatitis B does not generally spread through water & food. Instead, it is transmitted through body fluids; prevention is thus the avoidance of such transmission. This study included a total of 43patients who attended outpatient's maxillofacial clinic, in Ramadi Teaching Hospital, Ramadi city. Results showed that out of the 43 patients 3 cases turned out to be Hbs Ag positive. Contact with blood and blood products, or contaminated saliva, surgeons and dentists are more at risk of this is a first investigation into the prevalence of acquiring HBV. All unvaccinated adults are at risk for HBV infection should be vaccinated. Hepatitis B vaccine is made from a part of the hepatitis B virus.

Key wards: HBV, blood contamination in dentistry.

Introduction

Viral hepatitis is a major public health problem, occurring endemically in all areas of the world. 'Hepatitis' means inflammation of the liver. Viruses belonging to this family all have ribonucleic acid (RNA) as their genetic material. Health-care workers (HCWs) are at increased risk of subclinical may result in the carrier state or long occupational acquisition of HBV and HCV infection, doctors and dentists are amongst. [(1)]

The prevalence of infection is most highly in groups of HCWs, and in virus in HCWs is unclear. Parenterally -acquired hepatitis, and the prevalence of this the most highly exposed groups - recognizing that doctors and dentists are amongst.[(2)] A number of reports suggest a significantly higher incidence of hepatitis among dentists than in the general population and also higher rates of hepatitis in certain specialists, especially oral surgeons, periodontists and endodontists, than in general dentists. Vectors of infection with HBV in dental practice are blood, saliva and nasopharyngeal secretions. [(3)] Unlike hepatitis A, hepatitis B does not generally spread through water & food. Instead, it is transmitted through body fluids; prevention is thus the avoidance of such transmission: unprotected sexual contact, blood transfusions, re-use of contaminated needles & syringes, & vertical transmission during child birth. Infants may be vaccinated at birth. [(4)]

The risk of acquiring the infection is in needles and syringes, and may be transmitted to HCWs or to their patients

* College of Dentistry, Anbar University, Iraq

by accidental injury, dentists state that puncture of the skin of the fingers occurs once or more each week. Drilling, with its attendant spray, also creates a potentially infectious aerosol.

Everett Koop Institute and Dartmouth Medical School were documented that it is important to the patient with HBV to tell the dentist and other health professionals that he has the disease that's why dentist needs to take precautions since oral surgery and even routine dental procedures can involve exposure to blood and therefore has the potential to spread hepatitis B so, Viral hepatitis is a major public health problem, occurring endemically in all areas of the world. [5]

Material and Methods

Study population:

This study was conducted at Ramadi Teaching Hospital, Ramadi city, Iraq during a period from May to July-2009 to determine the prevalence of seropositive cases for HBV. The study included a total of 43patients who attended outpatient's maxillofacial clinic, all patients asked for their age, sex, address, occupation and past medical history. All of them were visit dentists during the last month from the time of our study and four cases (9.30%) from them undergo minor oral surgery at that month. Specific questions about medications, current illnesses, hepatitis, recurrent illnesses, unintentional weight loss, lymphadenopathy, oral soft tissue lesions, or other infections. Samples for testing: Sera were initially stored by sequential laboratory number raged from 4°C or -20°C on the day of collection in the hospital laboratory. The study sera were then identified, liquated into 2.5 ml plain tubes, labeled with the unique code, and stored at -20°C for testing.

Method:

Allowed test strip, serum specimen, and/or controls to equilibrate to room temperature (15-30°C) prior to testing.

1 -brought the pouch at room temperature before opening, then remove the test strip from the sealed pouch and we used it immediately.

2-With arrows pointing toward the serum or plasma specimen, immersed the test strip vertically into the serum or plasma specimen for at least 10-15 seconds. Don't exceed the maximum line (MAX) on the test strip during immersing the strip.

3- Place the test strip on a non-absorbent flat surface, started the timer and wait for the red line(s) to appear. The result had been red at 10 minutes.

Positive results had been recorded when two distinct red lines appear. One line had been in the control region (C) and another line had been in the test region (T).

The intensity of the red color in the test line region (T would be varied Depending on the concentration of HCV antibodies present in the specimen. Therefore, any shade of red in the test region (T) should be considered Positive. While when only one red line appeared in the control region (C) and No red or pink line appeared in the test region (T).

Hepatitis B test: hepatitis B virus surface antigen (HBsAg) was Determined by ELISA Kit for Hepatitis B Surface Antigen is in vitro Enzyme-linked immune sorbent assay\ l or the detection of

HBsAg in human serum or plasma samples for Research Use Only. From DRG International, Inc., USA. [6]

Results

Out of the 43 patients of our study 3 cases turned out to be Hbs Ag positive and these results had been shown in Tabl-1.

Discussion

This study had been shown approximately 5%from the patients were young age adults who can't rid get rid of the virus and this will compare to other studies which showed about 5-10% of adults, 30-50% of children, & 90% of babies will not get rid of the virus & will develop chronic infection. Chronically infected people can pass the virus on to others & are at increased risk for liver problems later in life. [7]

It is difficult for the human immune system to eliminate the virus from the body, and infection with HBV usually becomes chronic. Over decades, chronic infection with HBV damages the liver and can cause liver failure in some people. On the other hand, treatment of chronic infection may be necessary to reduce the risk of cirrhosis & liver cancer. Chronically infected individuals with persistently elevated serum alanine aminotransferase, a marker of liver damage, HBV& DNA levels are candidates for therapy. [8]

Additional information is needed for accurate assessment of factors that may increase the risk for transmission of blood borne pathogens and other infectious agents in a dental setting. Studies should address the nature, frequency, and circumstances of occupational exposures. Such information may lead to the development and evaluation of improved designs for dental instruments, equipment, and personal protective devices. In addition, more efficient reprocessing techniques should be considered in the design of future dental instruments and equipment. Efforts to protect both patients and dentists with their assistants should include improved surveillance, risk assessment, evaluation of measures to prevent exposure, and studies of post exposure prophylaxis. Such efforts may lead to development of safer and more effective medical devices, work practices, and personal protective equipment that are acceptable to DHCWs, are practical and economical, and do not adversely affect patient care. [9,10]

It is still not known whether treatment reduces the chance of spreading the disease. However, if the amount of virus in patient's blood is still undetectable 6 months after completing treatment (that is, he or she has a sustained virologic response), the chances of spreading hepatitis C is extremely low. [11]

Contact with blood and blood products, or contaminated saliva, surgeons and dentists are more at risk of this is a first investigation into the prevalence of acquiring HBV. Small abrasions or cuts on their hands HBV and HCV infection, and the epidemiological may allow infection. Significantly, the majority of characteristics of HBV among doctors and dentists these HCWs use universal precautions on <50% of in tropical Africa. The subjects were highly exposed the occasions when they carry out procedures on to blood and blood products.

About, more than 2 billion people (a third of the world's population) have been infected with the hepatitis B virus. This includes 350 million chronic carriers of the virus. [12]

Hepatitis B virus has been linked to the development of Membranous glomerulonephritis (MGN). During HBV infection, the host immune response causes both hepatocellular damage & viral clearance. Although the innate immune response does not play a significant role in these processes. [13]

Individuals who remain HbsAg positive for at least six months are considered to be hepatitis B carriers.

(14)

As of 2004, there are an estimated 350 million HBV infected individuals worldwide. National & regional prevalence ranges from over 10% in Asia to under 0.5% in the United States & northern Europe. **(15)**

In this study, HBsAg prevalence rate of (12%) was observed among patients admitted to Ramadi Teaching Hospital (Ramadi city).

Most of the infected persons were from young age group, males & Iraqis and these results were in agreement with previous reports affirming that hospital health care workers (HHCW) are at risk for infection with HBV via exposure to infected blood or body fluids. **(16)**

Conclusion & Recommendation

People who are infected can spread HBV to others, however even if they don't appear sick. All unvaccinated adults at risk for HBV infection should be vaccinated. Farther more hepatitis B vaccine is made from a part of the hepatitis B virus. It cannot cause HBV infection. Despite that hepatitis B can be prevented with a safe & effective vaccine However, there are promising new treatments for those who live with chronic hepatitis B.

References

1- Jennifer L. Cleveland, D.D.S., M.P.H., Barbara F. Gooch, D.M.D., M.P.H., Brian G. Shearer, PH.D. And Rob L. Lyerla, PH.D. Risk and Prevention of Hepatitis B Virus Infection Br Dent J. 22; 180(12):473-4. (1996).

2- Ahtone J, Goodman RA. Hepatitis B and dental personnel: transmission to patient and prevention issues. J Am Dent Assoc; 106:219-22 (1983).

3- Johnson R, Gretch D, et al. "Membranoproliferative glomerulonephritis associated with hepatitis C virus infection."N Engl J Med 328(7): 465-70 (1993).

4- Zignego AI, Ferri C; Commission on Extra hepatic Manifestations of HCV Infection, for the Italian Association of the study of liver " Extra hepatic Manifestations of HCV Infection: A general overview & guidelines for a clinical approach". Dig Live Dis. 39(1) (2006).

5- Everett Koop Institute and Dartmouth Medical School in (2009).

6- DRG International, Inc., USA Fax: (908) 233 0758 e-mail: corp@drg-international.com (2006).

7- Iannacone, M.; Sitia, G.; Ruggeri, Z.; Guidotti, L."HBV pathogenesis in animal models: recent advances on the role of platelets" .Journal of hematology 46(4):719-726 (2007).

8- Lok, A.; Mcmahon, B."Chronic hepatitis B ". Hematology (Baltimore, Md."45(2):507-539 (2007).

9- Hollinger, F.; Lau, D."Hepatitis B: the pathway to recovery through treatment". Gastroenterology clinics of North America (4): 895-931 (2006).

10- Lai, CL; Yuen "The natural history & treatment of chronic hepatitis B: a critical evaluation of standard treatment criteria & end points". Annals of internal medicine 147(1):58-61 (2007).

11- Gooch B, Marianos D, Ciesielski C, et al. Lack of evidence for patient-to-patient transmission of H I V in a dental practice. J Am Dent Assoc. 124:38-44 (1993).

12- Canter J, Mackey K, Good LS, et al. An outbreak of hepatitis B associated with jet injections in a weight reduction clinic. Arch Intern Med; 150:1923-7(1990).

13- Iannacone, M.; Sitia, G.; Isogawa, M.; Marchese, P.; Castro, M.; Lowenstein, P.; Chisari, F.; Ruggeri, Z.et al."Platelets mediate cytotoxic T lymphocyte-induced liver damage". Nature medicine (11):1167-1169 (2005).

14- Polish LB, Shapiro CN, Bauer F, et al. Nosocomial transmission of hepatitis B virus associated with the use of a spring-loaded finger-stick device. N Engl J Med; 326:721-5(1992).

15- Custer; Sullivan, SD; Hazlet, TK; Iloeje, U; Veenstra, DL; Kowdley, KV. "Global epidemiology of hepatitis B virus". Journal of clinical gastroenterology 38 (10 Supple 3):158-68 (2004).

16- Bell DM. Human immunodeficiency virus transmission in health care settings: risk and risk reduction. Am J Med; 3: 294-300 (1991).

Table-1 Patient's age and sex distribution.

Age group	No. of male cases	No. of female cases	HBV Positive cases
12-	3	1	1 F
20-39	16	6	2 (1 M +1 F)
40-59	7	1	
60-79	7	1	
80-99	1	-	
Total	34	9	

Test Statistics

	VAR00001
Chi-Square	81.000
df	1
Asymp. Sig.	.000

Group Statistics

	factor	N	Mean	Std. Deviation	Std. Error Mean
VAR00002	negative	40	.39528	.074533	.011785
	positive	3	.87167	.188216	.108667

(P < 0.01) there is a significant difference between the positive and negative cases.