EPIDEMIOLOGICAL STUDY OF HEPATITIS B VIRUS INFECTION IN PATIENTS OF BASRAH PROVINCE

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ABSTRACT

Objective: Hepatitis B virus is one of the major diseases of mankind and is a serious global public health problem; Of the 2 billion people who have been infected with the HBV more than 350 million have chronic infections 500,000 to 1.2 million deaths per year caused by chronic Hepatitis, Cirrhosis, and Hepatocellular carcinoma**.**

Aim: to determinate the prevalence among HBV patients that consulted the public health department and Blood bank in Basrah from 2005-2010, also investigation about sex and age of 155 cases of these patients.

Methods: The prevalence of HBV infection from 2005 and 2010 were observed according to the annual statistical in public health department and Blood bank in Basrah. Also a total of 155 individuals was tested for HBsAg, determination was done by using ELISA according to (DRG kit, USA).

Results: the prevalence from 36865 and 308488 individuals were 1.36 % and 0.27 % in Public health department and blood bank center, respectively .Also the present study conducted on 155 individuals including 122 (78.7 %) male and 33 (21.3%) female. A significant increased ($P< 0.001$) in the number of the infected males (118) were recorded with (76.13%) instead of 33 (21.29 %) female and (2.58 %) of individual groups of vaccination and susceptible. Furthermore, the age between (20 -29) and (30-39) years were significant more age groups susceptibility to the infection ($P< 0.05$).

Conclusion: the numbers of patients becomes noticeable, especially all cases were detected accidentally during blood transfusion or others undirected tests. Infected males were more susceptible to HBV infection than female

INTRODUCTION

Hepatitis B virus (HBV) is one of the major diseases of mankind and is a serious global public health problem, Of the 2 billion people who have been infected with the HBV more than 350 million have chronic infections 500,000 to 1.2 million deaths per year caused by chronic Hepatitis, Cirrhosis, and Hepatocellular carcinoma.(1).

HBV infection prevalence varies markedly in different geographic areas of the world, as well as in different population subgroups. It ranges over 10% in some Asian and Western Pacific countries to under 0.5% in the United States and northern European countries (2). The prevalence of chronic HBV infection worldwide could be categorized as high, intermediate and low endemicity.(3).

MATERIALS AND METHODS

The prevalence of HBV infection from 2005 and 2010 were observed according to annual statistical in public health department and Blood bank in Basrah .also 155 samples were tested for HBsAg , determination were done by using ELISA according to (DRG kit ,USA).

RESULTS AND DISCUSSION

1.Epidemiological profile

1. Epidemiological profile

The prevalence of HBV infection were observed in public health department and Blood bank in Basrah , according to public health department , in 2006 and 2007 the prevalence were (4.35 %) and (3.57 %) ,respectively.(Table,1, Figure , 1) . Overall, the prevalence from 36865 and 308488 individuals were 1.36 % and 0.27 % in Public health department and blood bank center, respectively.

Table (1) The prevalence of infection among person tested for HBV.

Years	Public health department (PHD)			Blood bank center (BBC)		
	Total	positive	%	Total	positive	%
2005	7507	40	0.54	42423	127	0.29
2006	1356	59	4.35	44892	118	0.27
2007	897	32	3.57	46361	106	0.23
2008	7082	77	1.08	54799	128	0.24
2009	6633	127	1.91	60221	159	0.27
2010	13390	264	1.97	59792	175	0.29
Total	36865	599	1.63	308488	813	0.27
P < 0.05						

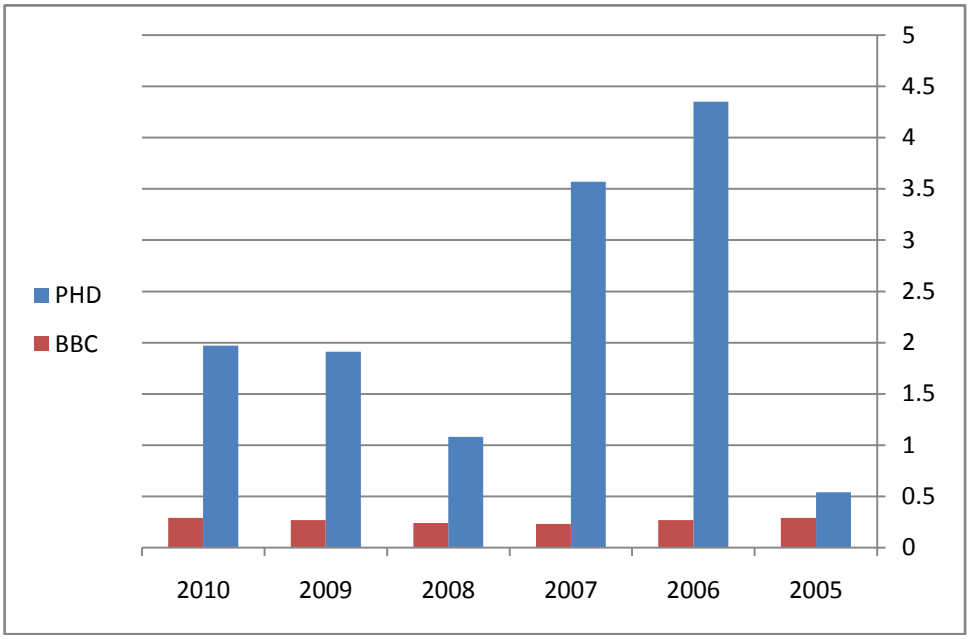

Figure (1) The prevalence of infection among person tested for HBV.

2. Characterization of study population.

The present study conducted on 155 individuals including 122 (78.7 %) Male and 33 (21.3%) female. a significant increased (P< 0.001) in the number of the infected males (118) were recorded with (76.13%) instead of 33 (21.29 %) female and (2.58 %) of individual groups of vaccination and susceptible. Furthermore, the age between (20 -29) and (30-39) years were significant more age groups susceptibility to the infection (P< 0.05) .Table (2).

Table (2) Age distribution of HBV Patients

Age groups	Gender	
	M	F
1-9	14	6
10-19	3	2
20-29	32	9
30-39	31	10
40-49	19	4
≥ 50	19	2
P < 0.05		

M*= Male, F= Female**

Positive results for both HBsAg and anti-HBc IgM indicate an acute HBV infection or a reactivation of a chronic HBV infection (4). HBsAg positivity persists beyond 6 months in 10% of infected individuals and is indicative of chronic hepatitis B (5).Outcome after acute Hepatitis B virus infection and its course may be influenced by the host immune response (6),Host genetic factors and environmental factors including Hepatitis B virus genotype are widely viewed as common basis of the different outcomes of HBV infection (7). In this study, using only HBsAg marker for detected the virus in the medical institutions were not enough to detect all HBV infections. Unfortunately, HBV is extremely hard to cultivate as it does not replicate in any cell line used regularly in diagnostic laboratories (8).

Recently HBVinfection becomes truly problem which we are stilled faced it .in Basrah city, the numbers of patients becomes noticeable, especially all cases were detected accidentally during blood transfusion or others undirected tests, noticeably in Oncology unit, Hemodailysis unit, blood bank center, Public health department and Center of hereditary blood disease in Basrah governorate. Overall, the period during 2005-2010, the prevalence from 36865 and 308488 healthy individuals were 1.36 % and 0.27 % in Public health department and blood bank center, respectively .(Table,1, Figure , 1) . Thus this information may be placed the Basrah in risk region. In fact, HBV is one of the major diseases of mankind and is a serious global public health problem (1). CDC, 2001 showed that the prevalence of chronic HBV infection worldwide could be categorized as high, intermediate and low endemicity, Iraq located in intermediate region. Also HBV infection prevalence varies markedly in different geographic areas of the world, as well as in different population subgroups. It ranges over 10% in some Asian and Western Pacific countries to under 0.5% in the United States and northern European countries (2). Overall, approximately 45% of the global populations live in areas of high chronic HBV prevalence (1). Hepatitis B is moderately endemic in part of Eastern and Southern Europe, the Middle East, Japan, and part of South America, between 10-60% of the population have evidence of infection, and 2-7% is chronic carriers. Acute disease is common in these areas because many infections occur in adolescents and adults; however, in these areas, mixed patterns of transmission exist, including infant, early childhood and adult transmission (9, 2). The incidence of new infections has decreased in most developed countries, most likely due to the implementation of vaccination strategies (10). In the

this study, a significant increased($P< 0.001$) in the number of the infected males were recorded instead of female , these may because of the males more activities in the community such as blood donors and may due to the behaviors of males that might be associated with transmission routes of HBV infection .furthermore , groups at increased risk for HBV infection includes persons with a history of sexually transmitted disease, household contacts of HBV infected persons, health care workers, hemodialysis patients, intravenous drug users, infants born to HBV-infected mothers, immigrants and children of immigrants from hyper endemic areas, homosexuals, persons who have more than one sexual partner in a six-month period, sexual partners of HBV-infected persons (11,12). Unfortunately, exact data are difficult to generate as many cases will remain undetected due to the asymptomatic nature of many acute and chronic infections. Furthermore , In the this study the age between (20-29) and (30-39) years were significant more age groups susceptibility to the infection($P< 0.05$), table (2), may due to these age groups were more activities in the community such as blood donors .

دراسة وبائية لفيروس التهاب الكبد الوبائي لمرضى محافظة البصرة

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الخلاصة

اجريت هذه الدراسة من اجل الكشف عن انتشار وأيضاً تحقيق حول الجنس والعمر لمرضى فيروس التهاب الكبد الوبائي لدى عراقيين مصابين في محافظة البصرة .تضمنت هذه الدراسة 155 مريضا مكونا من 122 ذكراً و 33 أنثى وذو أعمار تتراوح مابين 80- 3 سنة. وقد وجد ان انتشار الفيروس في البصرة اعتمادا على الاحصائيات السنوية لقسم الصحة العامة ومصرف الدم الرئيسي من عام 2005- 2010 له اصابات ملحوظه خاصة في عامي 2006 و2007 ،حيث اظهرت احصائيات قسم الصحة العامة نسب بحدود 4.35 % و3.57 % على التوالي.

وبأستخدام تقنية المعايرة الامتصاصي ة المرتبطة بالانزيم تم إجراء فحوصات مصلية لمصول المصابين تتضمن المستضد السطحي HBsAg ، اظهرت الدراسة الوبائية ، ان الذكور اكثر اصابة بالفيروس بنسبة (76.13%) من الاناث (21.29 %) وبنسبة معنوية عالية ($P< 0.001$)، فضلا عن وجود نسبة (2.58%) من الاشخاص الغير مصابين . كما تم توزيع اعمار المصابين على المرضى، واظهرت الدراسة ان الاعمار ما بين (20-29) و (30-39) كانت اكثر الاعمار أصابة بالفيروس وبنسب معنوية ($P< 0.05$).

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