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RESEARCH PAPER

PREVALENCE OF HEPATITIS B VIRUS INFECTION AMONG ILLEGAL IMMIGRANTS' PRISONERS IN KHARTOUM, SUDAN

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ABSTRACT

Background: Hepatitis B virus infection is a global public health problem affecting about 350 million people. Chronic infections with hepatitis B virus (HBV) are well-recognized risk factors for cirrhosis and liver cancer, one million people a year die from chronic active hepatitis, cirrhosis or primary liver cancer. Illegal immigrants are at high risk of having HBV and sexually transmitted infections. The objectives of the study were to determine the prevalence of Hepatitis B infection among illegal immigrants in selected prisons in Khartoum, Sudan and to determine their practice towards the infection.

Methods: The current study was descriptive conducted among illegal immigrant at prisons in Khartoum, Sudan. Total enumeration method was applied, and 273 respondents completed the questionnaire used to collect data after obtaining an ethical approval and informed consent.

Results: Most of the sample (82.1%) were males, (63.4%) age groups was (10-24) years, no work (45%) and most were from Eritrea (68.1%). The prevalence of hepatitis B infection was (6.7%).

Conclusion: The prevalence of Hepatitis B infection among illegal immigrants' prisoners in Khartoum, Sudan is the same as the prevalence rate in the general population.

KEY WORDS : Prevalence, Hepatitis B virus, illegal immigrants, prisoners

INTRODUCTION:

Hepatitis B virus (HBV) is a blood borne virus transmitted primarily through sexual contact and injections used by drug addicts; it is of a greater global importance (1). More than two billion people alive today have been infected with HBV at some time in their lives, of these, about 350 million remain infected chronically and become carriers of the virus. Three quarters of the world's population live in areas where there are high levels of infection. Every year there are over 4 million acute clinical cases of HBV. The prevalence of chronic HBV infection rate continues to be variable, ranging over 10% in some Asian and Western Pacific countries to under 0.5% in the United States and European countries (2). The highest rates of HBs Ag carrier rates are found in developing countries with limited medical facilities (3). A study among pre-surgery patients and general population in Khartoum and Easter Sudan showed HBV infection prevalence of 4.9% and 8.2% respectively (4, 5).

In Sudan, there are about two million illegal immigrants, around 5% of the resident population; the immigration movements reported in the last 13 years are among the highest in Sudanese history (6). Illegal immigrant are more at risk of having HBV, HCV, HIV and sexually transmitted infections (7-11).The contributing factors include: origin from countries that are highly endemic for these infections (7, 8), lack of knowledge about STIs prevention in the host country , the predominance of younger and more sexually active persons, the breaking up of couples, together with badly cultural and socioeconomic conditions (9).

The objectives of the study were to determine the prevalence of Hepatitis B infection among illegal immigrants in selected prisons in Khartoum, Sudan and to determine their practice towards the infection.

RESEARCH METHODS:

The current study was descriptive conducted among illegal immigrant at El-Huda & EL-Ragaba prisons in Khartoum, Sudan. Total enumeration method was employed and 273 respondents completed a pre-tested questionnaire to collect data. Rapid

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chromatography immunoassay test for Hepatitis B was used to diagnose Hepatitis B infection. Blood collection was done by using a standard procedure (whole blood) for HBs Ag. The SPSS for Windows software, version 22 (SPSS, Chicago, Illinois, USA) was used to analyze the data. Descriptive statistics were used (frequency). The ethics approval was obtained from the National Ribat University Ethics Committee. A written informed consent was obtained from all participants after explaining the study for them. Confidentially was realized and the right to withdraw from the study at any stage was preserved without any consequences on the respondents.

RESULTS:

Table (1) shows the sociodemographic characteristics of the respondents. Most of the respondents (82.1%) were males. Participants with age groups (10-24) and (25-50) years were 63.4% and 36.6% respectively. Most of the respondents 186 (68.1%) were from Eretria. Respondents from Ethiopia, Somalia, Nigeria and South Sudan were 20.9%, 7.3%, Nigeria 1.8% and south Sudan 1.8% respectively. Single respondents were 67.8%. Married and divorced were 30.4% and 1.8% respectively. Participants with no work were 45.0%. Workers, students and farmers were 12.9%, 12.1% and 8.0% respectively.

Table (2) shows the prevalence of hepatitis B infection as (6.7%). Table (3) shows the practice of the respondents regarding hepatitis B infection. Sixty seven (24.5%) have more than one sexual partner, 30 (18%) had sex with different partners within the past 3 month before prison. The sexual partners of 45 (34%) use condom while 8 (11.9%) use a condom when have commercial sex. Forty three (15.8%) of the respondents received Hepatitis B vaccination while 20 (7.3%) completed the doses.

Table (1)Socio-demographic characteristic of the respondents

Practice	Frequency	%
Gender:	224	82.1
Male	49	17.9
Female		
Age:	173	63.4
10-24	100	36.6
25-50		
Country:	186	68.1
Eritrea	57	20.9
Ethiopia	20	7.3
Somalia	5	1.8
Nigeria	5	1.8
South Sudan		
Marital status:	185	67.8
Single	83	30.4
Married	5	1.8
Divorced		
Occupation:	123	45.0
No work	35	12.9
Workers	33	12.1
Students	22	08.0
Farmers	60	22.0
Others		
Period of living in Sudan/year:	181	66.3
One	69	25.3
2-5	8	2.9
6-10	15	5.5
11-12		

RESULTS

Table (2) Prevalence of Hepatitis B among illegal immigrants

Hepatitis B status	Frequency	Percent
Hepatitis BAg positive	18	6.7%
Hepatitis BAg negative	255	93.3%
Total	273	100%

Table (3) Practice of illegal emigrants towards Hepatitis B infection

Practice	No.	N	%
Have more than one sexual partner	67	273	24.5
Had sex with different partners within the past 3 month before prison	30	273	18
Did you or your partner use a condom	45	273	34
Did you use a condom when you had commercial sex	8/30	67	11.9
Did you have Hepatitis B vaccination	43	273	15.8
Did you complete Hepatitis B vaccination	20	273	7.3

DISCUSSION:

This study investigated 273 illegal immigrants from various nationalities who were prisoners in selected prisons in Khartoum, Sudan. The rate of hepatitis B surface antigen (HBsAg) positivity was 6.7 %. This is the same as the prevalence rate in Sudan and Sub-Saharan region [12, 13, 14]. This rate is higher when compared with a rate of 2.6% and 0.63 among prisoners in Turkey and Iran (15,16). It is also higher than the rate of 4.2%, 0.41% and 4.9% in Eritrea, Ethiopia, Saudi Arabia and Sudan (17, 18, 19).

Some prisoners continue to use drugs and share needles which may explain the high rate of hepatitis B infection among them (20). This finding is lower than Butler T et al. Dana D et al who investigated hepatitis B infection among young offenders in Australia and Iran (103, 104).

According to our finding, 34% of the subjects and their sexual partner use a condom and 11.9% use a condom when have commercial sex (21). This prevalence of condom use was higher compared to the use by college students reported by Liu Z et al (22). The level of condom use is higher than the rate among Sudanese and Latino Immigrants (23-24).

15.8% of the respondents received Hepatitis B vaccination and only 7.3% completed the doses. This finding is lower than the report by Alhowaish MA et al from Saudi Arabia who reported that 69.5% of medical students received HBV vaccine; 38% of them completed three doses (25).

The study concluded that the prevalence of Hepatitis B infection among illegal immigrants' prisoners in Khartoum, Sudan is high (6.7%) and the same as the prevalence rate in the general population.

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