

Hepatitis B surface antigen (HbsAg) in blood and genital secretions of patients with sexually transmitted diseases in Ibadan, Nigeria

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Summary

A total of 100 patients attending the Special Treatment Clinic of the University Teaching Hospital (UCH), Ibadan between October, 1998 and April, 1999 were studied to detect Hepatitis B surface antigen (HbsAg) in the blood and genital discharges. This was with a view of establishing whether infected persons (positive by blood test) also excrete the antigen, HbsAg, in their genital secretions.

Urethral swabs were collected from 63 male patients, while High Vaginal and Endocervical swabs were collected from 37 female patients. Blood samples were collected from all the patients. HbsAg was tested for by Enzyme immunoassay technique with Wellcozyme HbsAg kit.

Of the 63 male patients, 10 (15.9%) had HbsAg in the urethral secretion while 22 (34.9%) had it in their blood, 70% of these male patients were within the age range 11 - 30 years. Of the 37 female patients, 34 (92%) had HbsAg in the Endocervical secretions, 6 (16.2%) of them had HbsAg in their blood. Eighty percent of the female patients with positive HbsAg in the genital secretions were within age range 21 - 40 years. This study documents that Hepatitis B virus can be transmitted sexually in this environment.

Key-words: *HbsAg, Blood, Genital secretions.*

Résumé

Un nombre total de 100 patients qui fréquentent le clinique du traitement spécial du Collège hospitalier universitaire d'Ibadan entre octobre 1998 et avril 1998 ont été étudiés afin de détecter antigène extérieur Hépatite B (HbsAg) dans le sang et pertes génitales. On voulait savoir si des hommes infectés (positif à travers examen de sang) pourront tout aussi exréter l'antigène, HbsAg, dans leurs sécrétions génitales. Prélèvements urètres ont été réunis chez 63 patients du sexe masculin, tandis que prélèvement élevé vaginal et endocervical ont été réunis chez 37 patientes du sexe féminin. Des prises de sang ont été réunies de tous les patients. On a fait l'examen d'HbsAg à travers la méthode immunoassay Enzyme avec l'utilisation d'équipement de HbsAg Wellcozyme.

Parmi les 63 patients du sexe masculin, 10 soit 15,9% avaient Hbs dans la sécrétion urètre tandis que 22 soit 34,9% l'avaient dans leur sang. 70% de ces patients du sexe masculin sont dans la tranche d'âge de 11 - 30 ans. Parmi les 37 patients du sexe féminin, 34 soit 92% avaient le HbsAg dans les sécrétions endocervicales. 6 soit 16,2% d'entre eux avaient le HbsAg dans leur sang.

Quatre-vingts pourcent des patients du sexe féminin avec HbsAg positif dans la sécrétion génitale étaient entre la tranche d'âge de 21 - 40 ans.

A travers cette étude on peut conclure que le virus

Hépatite B pourrait être transmis sexuellement dans ce milieu.

Introduction

Hepatitis is an inflammation of the liver parenchyma. Viral hepatitis is a general term that is reserved for infections of the liver caused by one of at least 5 distinct hepatotropic viruses, Hepatitis, A, B, C, D and E viruses. Hepatitis F and G viruses are the recent addition.¹ The most notable clinical sign of the diseases is jaundice.² Hepatitis B virus infection, otherwise known as serum hepatitis is caused by Hepatitis B virus (HBV).³ High prevalence of HBV infection in developing countries has been associated with poor standard of living and limited medical facilities.²

Sero-epidemiological survey showed that 5% of the world population are asymptomatic carriers.² One of the most important aspects of the epidemiology of the virus is the extremely high prevalence of infection in developing countries.

A significantly higher HbsAg carrier rate of 42.2% was found among sexually transmitted diseases patients than blood donors (12.3%) in this environment,⁵ thus suggesting that HBV infection maybe greater than previously recognised in Nigeria and that sexual transmission may be an important mode of spreading the virus in this environment.

Hepatitis B virus may be transmitted parenterally and by transfusion with HBV positive blood.⁶ There have been reports of HBV antigen in faeces and urine⁷ and in bile⁸ but it is not clear whether these secretions play any part in the spread of the infection.

To the best of our knowledge, no study has been done to detect HbsAg in genital secretions of STDs patients in our environment, hence this study is designed to detect HbsAg in the genital discharge of STD patients with a view of establishing whether or not infected person excrete the virus in their discharges.

Patients and methods

The study population was the new patients attending the Special Treatment Clinic (STC), U. C. H., Ibadan for the management of STDs from October 1998 to April 1999. Patients who gave verbal consent were included in the study. All patients were interviewed and examined for genital discharges.

Five milliliters of venous blood was collected from each patient and the serum separated into aliquots and frozen at minus 4°C until required for testing. High vaginal swabs (HVS) and Endocervical swabs (ECS) were collected from females and Urethral swabs (US) from males. Each swab was immersed in 1.0ml sterile phosphate-buffered saline (PBS) and frozen at minus 70°C until required for testing.

Wellcozyme HbsAg enzyme immunoassay kit. (Murrex

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diagnostics, Danford, England) was used for the detection of HbsAg in serum and genital secretion. The tests were performed according to the Kit manufacturer's specification.

Results

Of the 100 patients studied 63 were males while 37 were females, a male to female ratio of 1.7:1. Sixty-five percent of the patients were within 21 - 30 age group.

Of the 100 patients, 28 had HbsAg in the blood, a prevalence rate of 28%. Of the 63 male patients examined, 22 had HbsAg in the blood giving a prevalence rate of 34.9% (Table 1). Of the 22 male patients having HbsAg in the blood,

at risk in the developing countries. Age distribution of patients studied shows that 65% were in the age group 21 - 30 years, 27% in the age group 31 - 40 years, while age group 41 - 50 years formed the lowest. Seventy percent of the male patients with positive HbsAg in the urethral secretions and 80% of the female patients with HbsAg in the high vaginal and endocervical secretions are within the age range 21 - 30 years. This observation is in agreement with the finding of Olaleye et al⁵ who reported the age group 20 - 29 years to be having a significantly higher HbsAg carrier (48.7%) rate than other age groups. This observation reiterates that people in this age group are more sexually active and thus may be more exposed to STDs due to frequent uncontrolled and unprotected sexual intercourse with multiple sexual partners in most cases. The people in this age group are more likely to transmit HBV sexually.

In this study, prevalence of HbsAg in the blood samples of the male patients is higher (34.9%) than the female patients (16.22%). The result is similar to that of Austin et al⁹. The result is not surprising since males seldom operate with maximum freedom to engage in sexual activity than the females who practise this act with a lot of restrictions. In addition due to cultural background, females are probably engaged more in domestic duties and thus not free to move about as much as males.

Of the patients studied, 15.8% of the males and 13.15% of the females had HbsAg in the genital secretions. The detection of HbsAg in the genital discharge has provided a good baseline data for further studies on the genital discharge and transmission of HBV in this environment and supports the possibility of sexual transfer of the virus. It is suggested that detection of the antigen (HbsAg) in genital secretion be used as screening method in our environment for the at risk

Table 1 Prevalence of HbsAg in blood of male patients with sexually transmitted diseases in Ibadan, Nigeria.

Age groups (Years)	No examined	No. Positive (%)
11 - 20	5	2 (40)
21 - 30	43	14 (32.56)
31 - 40	14	6 (42.86)
41 - 50	1	0 (0)
Total	63	22 (34.92)

Table 2a Concordance of HbsAg in blood and urethral swab of male patients with sexually transmitted diseases in Ibadan, Nigeria

Blood	Urethral swab		Total		
	Positive	Negative			
	No	(%)	No	(%)	
Positive	8	(36.36)	14	(63.64)	22
Negative	2	(4.88)	39	(95.12)	41
Total	10		53		63

Table 2b Prevalence of HbsAg in blood, HVS and ECS of female patients with sexually transmitted diseases in Ibadan, Nigeria

Age group (years)	No examined	HbsAg in blood	HbsAg in HVS	HbsAg in ECS
		No (%)	No (%)	No (%)
11 - 20	2	1 (50)	1 (50)	1 (50)
21 - 30	22	2 (9.09)	0 (0)	0 (0)
31 - 40	13	3 (23.08)	3 (23.08)	4 (30.77)
Total	37	6 (16.22)	4 (10.81)	5 (13.51)

10 had the antigen in urethral secretion, 8 of these had the antigen in the blood, that is 80% of the male patient had HbsAg in both blood and Urethral swabs, p-value <0.05 (Table 2a).

Of the 37 females, 6 had HbsAg in the blood, a prevalence rate of 16.2%, 4 had the HbsAg in the HVS a prevalence rate of 10.8%, while 5 had HbsAg in the Endocervical secretions, a prevalence rate of 13.5% (Table 2b).

Discussion

The result of this study shows that 15% of the STD patients excrete HbsAg in their genital secretions. It is suggested that this method can be used to screen our patients

group. The collection of specimens is less invasive when compared with venopuncture.

It is observed in this study that some patients had the antigen (HbsAg) in their genital discharges without showing it in the blood. 80% of male patients with HbsAg in urethral discharges had the antigen in the blood. From the p-value, which is <0.05 there is significant difference between the two groups. This calls for further studies of the course of sexually acquired HBV infection

It may also be necessary to determine whether sexual partners of HbsAg positive individuals have the antigen (HbsAg) in the genital secretions.

In conclusion, it is established that HbsAg is detectable

in genital secretions and this may be used as screening method for rapid diagnosis in this environment.

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