

Prevalence of hepatitis B virus among chronic schizophrenia patients

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معدل انتشار فيروس التهاب الكبد البائي بين مرضى الفصام المزمن وليد محمد سعيد، رأفت صالح، ناجح جميعان

خلاصة: استهدفت الدراسة معرفة معدل انتشار المستضد السطحي لالتهاب الكبد البائي بين مرضى الفصام المزمن في الأردن. وقد تم إجراء اختبار تحري فيروس التهاب الكبد البائي بالمقايضة المناعية الإنزيمية لدى 192 مريضاً (106 من الذكور و86 من الإناث) على فترة 12 شهراً. كما تم إجراء اختبارات مماثلة على عددٍ مساوٍ من الشواهد الذين يعطون مع المرضى من حيث العمر والجنس. وقد وجد أن 14 من مرضى الفصام المزمن (10 ذكور و4 إناث) لديهم إيجابية المستضد السطحي لالتهاب الكبد البائي ويقابلهم 5 من الشواهد الأسوياء (4 ذكور وأنثى واحدة) لديهم إيجابية المستضد السطحي لالتهاب الكبد البائي. ولهذا فإن الفرق لم يكن ذات أهمية يعتد بها إحصائياً، ولكنه يشير إلى أن مرضى الفصام المزمن من المجموعات المعرضة لخطر العدوى بفيروس التهاب الكبد البائي، وإلى إمكانية استفادتهم من الإجراءات الوقائية مثل التثقيف الصحي والتمنيع تجاه فيروس التهاب الكبد البائي.

ABSTRACT We aimed to determine the prevalence of hepatitis B surface antigen (HBsAg) among chronic schizophrenia patients in Jordan. Over a period of 12 months, 192 patients (106 male and 86 female) were tested for hepatitis B virus (HBV) by enzyme immunoassay. An equal number of age- and sex-matched healthy controls was also tested. Of the schizophrenia patients, 14 (10 male and 4 female) were positive for HBsAg while only 5 (4 male and 1 female) of the control subjects tested positive. The difference was not statistically significant but it indicates that chronic schizophrenia patients are a risk group for HBV infection and likely to benefit from preventive measures (health education and immunization against HBV).

Prévalence du virus de l'hépatite B chez des patients schizophrènes chroniques

RESUME Notre objectif était de déterminer la prévalence de l'antigène de surface de l'hépatite B (HBsAg) chez des patients schizophrènes chroniques en Jordanie. Sur une période de 12 mois, 192 patients (106 hommes et 86 femmes) ont été soumis à des tests à la recherche du virus de l'hépatite B (VHB) par titrage immuno-enzymatique. Un nombre égal de cas témoins en bonne santé apparés en fonction de l'âge et du sexe ont également été soumis à des tests. Quatorze (14) des patients schizophrènes (10 hommes et 4 femmes) étaient positifs pour l'HBsAg tandis que seuls 5 des sujets normaux (4 hommes et 1 femme) avaient des tests positifs. La différence n'est pas statistiquement significative mais elle indique que les patients schizophrènes chroniques constituent un groupe à risque pour l'infection par le VHB et qu'ils pourraient probablement tirer avantage de mesures préventives (éducation sanitaire et vaccination contre le VHB).

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Introduction

Hepatitis B is endemic in parts of Asia. It is transmitted horizontally by contact with blood or sexual contact, and is also transmitted vertically from mother to infant [1]. More than one-third of the world's population is estimated to have been infected with HBV. Most recover, but there are around 350 million chronic carriers of HBV. About a quarter of these carriers will develop serious liver disease, including chronic hepatitis, cirrhosis and primary hepatocellular carcinoma. It is estimated that hepatitis B infection results in more than one million deaths every year worldwide [2]. The objective of the study was to estimate the prevalence of HBV among chronic schizophrenia patients in Jordan

Methods

The study was carried out prospectively at the outpatient psychiatric clinics in the King Hussein Medical Centre and Prince Rashid Military Hospital in 1999. It included all patients who met DSM IV (*Diagnostic and statistical manual of mental disorders*, fourth edition) [3] criteria for schizophrenia, who had been receiving treatment for more than 3 years and who had been previously admitted to the psychiatric ward. Blood samples were collected from a total of 192 patients and tested for hepatitis B surface antigen (HBsAg) by an enzyme-linked immunosorbent assay (Sanofi Diagnostic, Pasteur, France). An equal number of age- and sex-matched healthy controls were also tested. Subjects (patients or controls) who had a history of jaundice or clinical evidence of jaundice or hepatomegaly were excluded from the study.

Table 1 Age distribution of the 192 schizophrenia patients by sex

Age group (years)	Males		Females	
	No.	%	No.	%
<20	7	3.65	5	2.60
21-25	9	4.69	8	4.17
26-30	16	8.33	11	5.73
31-35	18	9.38	13	6.77
36-40	23	11.98	14	7.29
41-45	16	8.33	17	8.85
46-50	9	4.69	8	4.17
>50	8	4.17	10	5.21

Results

There were 106 male and 86 female schizophrenia patients (male to female ratio 1.23:1). Their ages ranged from 17 years to 58 years in men (mean 37.9 years) and from 18 years to 62 years in women (mean 42.3 years) (Table 1). About half the patients (50.52%) had a history of 10-18 admissions to the psychiatric department, 26.04% had fewer than 10 admissions and 23.44% more than 18 admissions (Table 2).

The duration of illness ranged between 3 years and 36 years in men (mean 20.5 years) and between 4 years and 38 years in women (mean 21.5 years). About 84% of the total sample had a duration of illness between 15 years and 26 years (Table 3).

In all, 14 patients (10 men and 4 women) out of the 192 patients were positive for HBsAg. The occurrence of HBV infection was commoner among those with a longer duration of illness and greater number of admissions. Only 5 (4 men and 1 woman) of

Table 2 Number of hospital admissions of the 192 schizophrenia patients by sex

No. of admissions	Males		Females	
	No.	%	No.	%
1-3	5	2.60	3	1.56
4-6	9	4.69	8	4.17
7-9	14	7.29	11	5.73
10-12	16	8.33	13	6.77
13-15	18	9.38	15	7.81
16-18	20	10.42	15	7.81
>18	24	12.50	21	10.94

Table 3 Duration of illness of the 192 schizophrenia patients by sex

Duration (years)	Males		Females	
	No.	%	No.	%
3-6	7	3.65	4	2.08
7-10	18	9.38	9	4.69
11-14	32	16.67	13	6.77
15-18	41	21.35	16	8.33
19-22	49	25.52	19	9.90
23-26	20	10.42	17	8.85
27-30	17	8.85	6	3.13
>31	8	4.17	2	1.04

the control group were positive; however, the difference was not statistically significant for either men ($\chi^2 = 1.61$, $P > 0.05$) or women (Fisher exact test = 0.256) (Table 4).

Discussion

The main finding of our study was that chronic schizophrenia patients have a high-

er positivity rate for HBsAg than normal controls, although the difference was not statistically significant. There could be several reasons for such a high carrier rate.

Horizontal transmission of HBV by blood or blood products following blood transfusion or the use of contaminated needles or syringes. Some chron-

Table 4 Results of hepatitis B virus test in schizophrenia patients and controls by sex

Test	Patients				Controls			
	Males		Females		Males		Females	
	No.	%	No.	%	No.	%	No.	%
Positive	10	9.4	4	4.7	4	3.8	1	1.2
Negative	96	90.6	82	95.3	102	96.2	85	98.8
Total	106	100.0	86	100.0	106	100.0	86	100.0

ic schizophrenia patients who are admitted for prolonged periods to mental hospitals are prone to aggressive behaviour and are given repeated parenteral injections and undergo various laboratory tests.

Person-to-person contact, including kissing [4], biting [5], sharing toothbrushes and razors [6], tattooing or unprotected vaginal or anal sex [7]. HBsAg has been detected in saliva, sneeze droplets, urine, tears, faeces [4] semen [8], gingival and anorectal mucosa [9], menstrual fluid [10], nail clippers, washcloths and the instruments used in body piercing (including ear piercing). The spread of the infection by insect vector is still unclear [7].

HBsAg has been detected in the cerebrospinal fluid of chronic schizophrenia patients and may be an iatrogenic factor in the development of late psychoses [11].

Hepatitis B virus infection is incurable, thus preventive measures are vital (avoiding contact with infected blood and other body fluids, and active immunization against HBV) [12].

We conclude from our study that patients with chronic schizophrenia are a risk group for HBV infection and are likely to benefit from preventive measures (health education and immunization against HBV). Periodic blood tests for the detection of carriers are advisable.

References

1. Cotran RS, Kumar V, Robbins SL eds. *Robbins pathologic basis of disease*, 4th ed. Philadelphia, WB Saunders Company, 1989.
2. Kane MA, Clements J, Hu D. Hepatitis B. In: Jamison DT et al., eds. *Disease control priorities for developing countries*. New York, Oxford University Press for the World Bank, 1993:321-30.
3. *The diagnostic and statistical manual of mental disorders*, 4th edition. Washington DC. American Psychiatric Association, 1994.
4. Villarejos VM et al. Role of saliva, urine and feces in the transmission of type B hepatitis. *New England journal of medicine*, 1974, 291:1375-8.
5. MacQuarrie MB, Forghani B, Wolochow DA. Hepatitis B transmitted by a human bite. *Journal of the American Medical Association*, 1971, 230:723-4.
6. Mosley JW. The epidemiology of viral hepatitis: an overview. *American journal of the medical sciences*, 1975, 270:253-70.
7. Wright R, McCollum RW, Klatskin G. Australia antigen in acute and chronic liver disease. *Lancet*, 1969, 2(7612):117-21.
8. Scott RM et al. Experimental transmission of hepatitis B virus by semen and saliva. *Journal of infectious disease*, 1980, 142:67-71.
9. Reiner NE et al. Asymptomatic rectal mucosal lesions and hepatitis B surface antigen at sites of sexual contact in homosexual men with persistent hepatitis B virus infection. *Annals of internal medicine*, 1982, 96:170-3.
10. Darani M, Gerber M. Hepatitis B antigen in vaginal secretions [Letter]. *Lancet*, 1974, 2(7887):1008.
11. Libikova H et al. Hepatitis B and herpes viral components in the cerebrospinal

- fluid of chronic schizophrenic and senile demented patients. *Acta virologica*, 1981, 25(4):182-90.
12. van Damme P, Kane M, Meheus A. Integration of hepatitis B vaccination into national immunisation programmes. Viral Hepatitis Prevention Board. *British medical journal*, 1997, 314:1033-6.

The "undefined and hidden" burden of mental health problems

The *undefined burden* of mental problems refers to the economic and social burden for families, communities and countries. Although obviously substantial, this burden has not been efficiently measured. This is because of the lack of quantitative data and difficulties in measuring and evaluating. The *hidden burden* refers to the burden associated with stigma and violations of human rights and freedoms. Again, this burden is difficult to quantify. This is a major problem throughout the world, as many cases remain concealed and unreported.

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