Depression and health related quality of life in non-cirrhotic chronic hepatitis B patients and hepatitis B carriers

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ABSTRACT

الأهداف: قياس نوعية جودة الصحة ذات الصلة بالحياة ومستوى الإكتئاب بين المرضى المصابين بالتهاب الكبد الفيروسي B الغير تليفي والمرضى الحاملين لمرض التهاب الكبد الفيروسي HbsAg.

الطريقة: أجريت هذه الدراسة في الأقسام: الطب النفسي – الجهاز الهضمي – الأمراض المعدية – في العيادات الخارجية بمستشفى هاران – سانليورفا بالجنوب الغربي من تركيا، خلال الفترة ما بين أبريل 2005م وحتى يونيو 2005م. تم استعمال تصميم مجموعة الحالة (مجموعة التحكم) لتحديد أثر العدوى لالتهاب الكبد الفيروسي B على الأعراض الإكتئابية ونوعية الحياة. تم استخدام مقياس جرد بيك للاكتئاب BDI، النموذج القصير HRQL 36، والمقابلات الشبة منظمة لمعرفة المتغيرات الفسيولوجية.

النتائج: شملت الدراسة تقييم ثلاثين مريضاً الذين طابقوا للفئة بالتهاب الكبد الفيروسي المزمن B، ثلاثون شخصاً سليماً حاملاً للمرض HbsAg، وثلاثون شخصاً سليماً. تبين أن لدى التهاب الكبد الفيروسي B اثر سلبي ملحوظ على نوعية الحياة، سواء من الناحية الوظيفة والبدنية. كما أظهرت نتائجنا أن نوعية جودة الصحة ذات الصلة بالحياة لدى حاملين المرض HRQOL الذين لا يعانون من أعراض مساوية بأولئك المرضى الذين يعانون من التهاب الكبد الفيروسي B غير الليفي وأسوا من مجموعة الأصحاء.

خاتمة: تقترح نتائجنا بأنه لا يحتاج فقط مرضى التهاب الكبد الفيروسيB إلى الدعم العاطفي ولكن حاملي المرض HbsAg يحتاجون إليه أيضاً. لذلك هنالك حاجة إلى التواصل والتعاون المستمر بين عيادات أمراض الكبد والأمراض المعدية والطب النفسي.

Objective: To measure health related quality of life and level of depression among patients with non-cirrhotic chronic hepatitis B patients and hepatitis B surface antigen (HBsAg) carriers.

Methods: The study was conducted at Psychiatry, Gastroenterology, and Infectious Disease Outpatients Clinics of the Harran University, Sanliurfa, Southeastern Turkey, between April and June 2005. A case control study design was used to determine the effect of hepatitis B infection on depressive symptoms and quality of life. The Beck Depression Inventory (BDI) for depressive symptoms, the Short Form-36 for measuring health related quality of life (HRQOL), and semi-structured interviews for assessing psychosocial variables were used.

Results: Thirty patients who met the criteria for being diagnosed with chronic hepatitis B, 30 inactive HBsAg carriers, and 30 healthy subjects were included in the study. It was found that hepatitis B had a significantly negative impact on quality of life, both in terms of physical function, and mental health. Our results showed that HRQOL in asymptomatic carriers is comparable to those of non-cirrhotic chronic hepatitis B patients and worse than healthy controls.

Conclusion: Our findings suggest that not only chronic hepatitis B patients, but also HBsAg carriers need emotional support. Therefore, on-going collaboration between hepatology and infection clinics and psychiatric liaison is needed.

Neurosciences 2009; Vol. 14 (1): 56-59

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Received 17th June 2008. Accepted 3rd September 2008.

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Chronic hepatitis B infects approximately 400 million people worldwide and causes one million deaths annually of liver disease.[1] In Turkey, which belongs to a moderately endemic region, there are approximately 4 million carriers of the HBV virus.[2] Chronic hepatitis B infection is characterized by the persistence of hepatitis B surface antigen (HBsAg) and serum HBV-DNA levels detectable for more than 6 months. Among patients

with active viral replication, cirrhosis will develop in 15-20% of patients within 5 years. For patients with cirrhosis, the disease may progress, and the incidence of hepatocellular carcinoma (HCC) is greatly increased (70-90% of HCC patients have cirrhosis).[3] Health-related quality of life (HRQOL) is a multifactorial construct that describes individuals' perceptions of their physical, psychological, and social functioning.[4] Thus, HRQOL is a more holistic assessment than clinical parameters, particularly in chronic disease in which mortality is not an immediate concern, because it also considers a patient's functional health and well-being. This is particularly important in chronic hepatitis B, in which the natural history is complex and comprises a number of phases.[5] Consequently, characterizing the HRQOL of chronic hepatitis B patients has implications for patient perceptions of the need for medical care, compliance toward follow-up, the need for treatment, and overall management of chronic hepatitis B.[6] Psychiatric symptoms and emotional distress appear to be more common in chronic hepatitis B patients than in the general population.[7,8] Psychiatric disorders have a considerable importance in asymptomatic hepatitis B virus carriers even without physical complaints or disabilities. Worries about contamination and illnesses related to hepatitis B infection were associated with the presence of psychiatric disorder.[9] The purpose of this study was to measure HRQOL and level of depression among patients with non-cirrhotic chronic hepatitis B patients and HBsAg carriers.

Methods. The study was conducted at Psychiatry, Gastroenterology, and Infectious Disease Outpatients Clinics of the Harran University, Sanliurfa, Southeastern Turkey, between April and June 2005. Thirty patients who met the criteria for being diagnosed with chronic hepatitis B were included in the study. They also had to have been diagnosed with non-cirrhotic compensated liver disease and not have received antiviral treatment in the preceding 6 months. Thirty inactive HBsAg carriers and 30 healthy subjects formed the control groups. The exclusion criteria were to be free of any accompanying physical illness, human immunodeficiency virus (HIV), or hepatitis C virus infections, and drug abuse. All subjects gave their consent to be included in the study. The study protocol was approved by the Local Ethics Committee of the Harran University Faculty of Medicine. We applied the following measures to all participants: 1. The Short Form 36 Health Survey (SF-36): SF-36 questionnaire consists of 36 items measuring the following 8 domains: physical function, role limitations - physical, vitality, general health perception, pain, social function, role limitations - emotional and mental health.[10] A validated translation from English into Turkish of the SF-36 was used to evaluate HRQL.[11] 2. The Beck Depression Inventory (BDI): This inventory includes 21 items designed to screen signs of depression that occur in the vegetative, cognitive, motivational, and emotional fields.[12] Validity and reliability studies have been performed for the Turkish form.[13] A cutoff score of 17 was adopted, and total scores range from 0-63.

The Statistical Package for Social Sciences (SPSS 11.5, SPSS Inc, Chicago, IL) was used for all statistical analyses. We used chi-squared analysis for categorical data. Two-tailed t-tests, analysis of variance (ANOVA) and a posthoc least significant difference (LSD) test were used to check for significant differences in the mean values of numerical data. Pearson's correlations were conducted to examine the relationship between SF-36 and BDI scores. The 2-tailed significance level was set at 0.05.

Results. The demographic characteristics of patients, carriers, and controls are shown in **Table 1**. No statistically significant difference exists between the 3 groups. With regards to all domains of HRQOL, significant differences between the patient, carrier, and control group were found. In order to assess how hepatitis types affect quality of life, as determined by the sub-scales of the SF-36 inventory, data of patients with hepatitis B and HBsAg carriers were compared with a healthy control group. It was found that hepatitis B had a significantly negative impact on quality of life, both in terms of physical function and mental health. The findings for the 3 groups are shown in **Table 2**. Posthoc LSD test revealed significant differences between patients with hepatitis B and healthy controls in all SF-36 subscales: physical function (p=0.000), role limitations – physical

Table 1 - Hepatitis B patient, HBsAg carrier, and control group demographic characteristics.

Demographic characteristics	Patient		Carrier		Control		*P*-value
	n (%)						
Gender							0.275
Female	14	(46.6)	8	(26.6)	11	(36.6)	
Male	16	(53.4)	22	(73.4)	19	(63.4)	
Education							0.086
Illiterate	8	(26.6)	7	(23.3)	10	(33.3)	
Primary	14	(46.6)	14	(46.6)	5	(16.6)	
High school-University	8	(26.6)	9	(30.3)	15	(50.0)	
Marital status							0.232
Married	17	(56.6)	25	(83.3)	19	(63.4)	
Single	12	(40.0)	5	(16.6)	10	(33.3)	
Widowed	1	(3.3)	-	-	1	(3.3)	
Age	30.83±12.91		35.33±9.60		32.66±7.29		0.234

HBsAg - hepatitis B surface antigen

Table 2 - A comparison of quality of life in hepatitis B patients, HBsAg carriers, and controls.

SF-36 Domain	Hepatitis B n=30	HBsAg carriers n=30	Healthy controls n=30	F	*P*-value
		Mean ± SD			
PF	72.6±23.6	79.6±21.4	97.1±5.30	13.620	0.000
RP	55.8±41.8	70.0±39.6	85.8±27.6	4.963	0.009
BP	64.3±27.3	69.1±28.2	85.2±18.3	5.739	0.005
GH	48.3±21.8	53.3±23.5	75.5±20.5	13.018	0.000
VT	50.6±18.8	60.5±20.8	73.8±17.9	10.945	0.000
SF	68.7±24.5	79.5±24.6	85.5±14.2	4.638	0.012
RE	52.2±43.4	78.8±33.3	85.5±31.1	7.047	0.001
MH	55.0±16.8	62.0±16.9	70.2±15.2	6.478	0.002

PF=physical function, RP=role limitations – physical, BP=pain, GH=general health perception, VT=vitality, SF=social function, RE=role limitations- emotional, MH=mental health, HBsAg - hepatitis B surface antigen

(p=0.002), pain (p=0.002), general health perception (p=0.000), vitality (p=0.000), social function (p=0.003), role limitations - emotional (p=0.001), and mental health (p=0.001). There were significant differences between HBsAg carriers and healthy controls in the following subscales: physical function (p=0.000), pain (p=0.000), and vitality (p=0.000). There was only one difference between hepatitis B patients and HBsAg carriers in SF-36 subscales: role limitations -emotional subscale (p=0.006). The average BDI scores were 10.8±6.9 in hepatitis B patients, 9.7±8.0 in HBsAg carriers, and 5.5±4.7 in healthy controls. Severe depression (17 and above) was reported at a rate of 20% in hepatitis B patients, 13.3% in HBsAg carriers, and 3.3% in healthy controls. There was a significant difference between the 3 groups with regard to BDI scores (F=5.216; p=0.007). Posthoc LSD test revealed significant differences between hepatitis B patients and healthy controls (p=0.01), hepatitis B patients and HBsAg carriers (p=0.01), and HBsAg carriers and healthy controls (p=0.003).

Discussion. The results of the present study have suggested that depressive symptoms have a considerable importance in chronic hepatitis B patients and asymptomatic HBsAg carriers even without physical complaints or disabilities. Health-related life quality is impaired in both groups in comparison with healthy controls. To the extent that we could determine, our study is the first to compare chronic hepatitis B patients and HBsAg carriers with respect to HRQOL and depressive symptomatology. In recent years, a few studies were conducted in Turkey to determine the prevalence of psychiatric disorders in hepatitis B patients and carriers. Atesci et al,[9] reported that the prevalence of psychiatric morbidities was 30.2% in HBsAg carriers. Ozkan et al,[7] found that the rate of psychiatric disorders among patients with non-cirrhotic compensated liver disease (HBV and HCV) was noticeably high (48.6%). In a study examining Korean immigrants to the United States who had hepatitis B, depressive symptomatology was found to be high (46%).[8] In our study, the mean BDI scores were 10.8 in hepatitis B patients, and 9.7 in HBsAg carriers. In a study carried out in Turkey, the mean BDI score among chronic hepatitis patients was reported to be 12.4.[7] There are several reasons why depression may be common in patients with chronic hepatitis. It may be that the stress of having a serious, and potentially life threatening illness makes patients vulnerable to developing depression. In addition, chronic viral infection may produce changes in immune function that may lead to depressive symptoms; just as exogenous immune products such as interleukins and interferon have been associated with fatigue and depressive symptoms.[7,14,15]

Hepatitis B infection is spread either through blood or sexual contact. The transmissibility of this infection leads to isolation and enormous problems for the carriers.[16] This problem is often more difficult to handle than the physical illness itself. The availability of vaccines against HBV and of successful antiviral treatment have solved some of the problems, but it remains important for the medical profession to be aware of the multifaceted impact of the carriage of HBV.[17]

Our results showed that HRQOL in asymptomatic carriers is comparable to those of non-cirrhotic chronic hepatitis B patients and worse than healthy controls. Ong et al[6] reported that HRQOL deteriorates with disease progression, initially in general health and mental dimensions, but with advanced disease all dimensions are affected. Ozkan et al[7] reported that hepatitis B and C patients vary significantly from the control group on all subcategories of quality of life criteria. They found that psychiatric morbidity (mainly depression) was the major variable on lowering HRQL.

Some limitations of this study should be highlighted. First, we did not use any structured clinical interview to diagnose psychiatric disorders in our study groups. Another limitation is the relatively small sample size that could limit our ability to generalize the results to chronic hepatitis B patients and HBsAg carriers in general. The small sample size of the study also negatively affects the credibility of this positive study.

In conclusion, chronic hepatitis B patients and HBsAg carriers presented a high rate of depressive symptoms and significantly decreased HRQL. Our findings suggest that not only chronic hepatitis B patients, but also HBsAg carriers need emotional support. Therefore, ongoing collaboration between hepatology and infection clinics and psychiatric liaison is needed.

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