

Renal Data from Asia - Africa

Survey of Hepatitis B Status in Hemodialysis Patients in a Training Hospital in Urmia, Iran

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ABSTRACT. To evaluate the prevalence of HBV infection in chronic hemodialysis patients at our dialysis center of Urmia's Taleqni Hospital, Urmia, Iran, we studied cross-sectionally the hepatitis surface antigen (HbsAg) status in blood samples of 167 active chronic hemodialysis patients at our center with enzyme linked immunosorbant assay (ELISA). The mean frequency of HbsAg+ was 6.58%, which was higher in patients less than 50 years old than in those above 50 years (9.3% vs. 5.3%, respectively), in males than females (10.5% vs. 2.5%, respectively), and in those on three times dialysis than twice per week (7.1% vs. 0.0%, respectively). We did not find a significant relationship between the factors of: age, sex, being resident in city or village, duration of the therapy, history of blood transfusion, marital status, job status, history of kidney transplantation, and prevalence of HbsAg+.

Keywords: Renal, Hepatitis B, Hemodialysis, Iran

Introduction

More than one-third of the world population is infected with HBV. WHO assumes that 1 – 2 million patients die each year

because of HBV complications. Individuals who remain hepatitis antigen positive (Hbs Ag+) for more than six month are considered chronic transmitters.¹

It is assumed that there are 350 million humans as chronic transmitters of HBV. Moreover, different parts of the world are categorized into three regions according to prevalence of HbsAg+: low with less than 2%, intermediate with 2% to 7%, and high with more than 7%.

The percentage of prevalence of HbsAg+

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in Iran is 1.5% to 6.5%. Accordingly, Iran is in the intermediate group of the world in the prevalence of HBsAg+.² However, the prevalence of HBsAg+ in Azarbaijan province in the west of Iran was reported as 0.9%.³

Hemodialysis patients are a high risk population for HBV infection.⁴ On the other hand, immunodeficiency may be the cause of the high prevalence in this population. Patients under long-term and continuous hemodialysis sessions are under high risk of being infected with HBV.⁵

This study aims at evaluating the status of HBV infection among active chronic hemodialysis patients at the dialysis unit of Urmia Taleqani Hospital, Urmia, Iran, to determine prevalence of this infection and the related risk factors.

Materials and methods

We studied cross-sectionally the hepatitis surface antigen (HbsAg) status in blood samples of 167 (51% males) active chronic hemodialysis patients at our center with enzyme linked immunosorbant assay (ELISA). Of the study patients 48 (28%) were on hemodialysis for less than 2 years, 85 (50%) from 2–5 years, and 34 (20%) were for more than 5 years; 154 patients were on 3–4 times hemodialysis schedule per week. In addition, 135 (80%) patients were resident in a city and 88 (16.7%) in a village; we did not have any information about 4 of them. There were 141 (84%) patients who were married, 14 (8.3%) single, 9 (5.3%) widow, and 3 (1%) who did not mention their marital status. There were 139 (83%) patients with a positive history of blood transfusion, while 28 (13.2%) patients did not mention their transfusion history. Of the study patients, 90 (53%) patients were illiterate, while 77 (48%) were literate (38% primary school, 12% guidance school, 40% high school, 7%

university degree). There were 114 (68%) patients who had no job, 30 (11.9%) had free jobs, and 23 (13.7%) were employed. There were 143 (85%) patients who did not receive any history of kidney transplantation, while 24 (14.3%) received a kidney transplant with failed allograft in the past.

We studied the medical records of the study patients according to a questionnaire that included the clinical and investigationnal data, and we correlated them with the results of the HbsAg status.

Statistical analysis

We analyzed the data using SPSS software version 11. The results were represented by graphs and tables. We used chi-square test and student's "t" test for comparison of the data.

Results

HbsAg+ was positive in 11 (6.58%) hemodialysis patients. The mean percentage of HbsAg+ was higher in patients less than 50 years old than in those above 50 (9.3%, 5.3%, respectively), in males than females (10.5%, 2.5%, respectively), in patients who lived in a city than those who lived in a village (7.4%, 3.6%, respectively), in patients less than 2 years on dialysis than those between 2–5 years and more than 5 years (42%, 8.2%, and 5.9%, respectively), in patients on three times dialysis than twice per week (7.1%, 0.0%, respectively), in patients who had history of blood transfusions than who did not (7.2%, 0.0%), in patients who were married than single or widow (7.8%, 0.0%, 0.0%, respectively), in the illiterate patients than the literate (7.8%, 5.2%, respectively), in patients who were employed than those who held free jobs, or were unemployed (8.7%, 6.7%, 6.1%, res-

pectively), and in patients who had history of transplantation than those who did not (8.3%, 6.3%, respectively).

Finally, we did not find a significant relationship between the factors of: age, sex, being resident in city or village, duration of the therapy, history of blood transfusion, marital status, job status, history of kidney transplantation, and prevalence of HbsAg+.

Discussion

The prevalence of HbsAg+ among hemodialysis patients referred to the hemodialysis unit at our hospital was 6.5 %. There was no significant difference with the results of the pervious surveys from Iran,^{2,3} Brazil,⁶⁻⁹ India,¹⁰ Kenya,¹¹ Bahrain,¹² Birjand,¹³ Tehran,¹⁴ and Kurdistan-Iran.¹⁵

There were no significant correlations with the major known risk factors such as age, sex, being resident in city or village, duration of the therapy, history of blood transfusion, marital status, job status, history of kidney transplantation, and prevalence of HbsAg+. However, Busek et al have reported a cohort of 434 dialysis patients with HbsAg+ prevalence of 5.9% to 0% in Brazil and found several HBV infection risk factors that included the number of patients per each hemodialysis unit, period of the therapy, number of the clinicians involved, number of the transfused blood units, and poor vascular condition.¹⁶ Moreover, Sabour B et al found a significant relationship between prevalence of HCV infection and the factors: period of hemodialysis, history of blood transfusion, history of kidney transplantation or surgical operation.¹⁷

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