

Analysis of Risk Factors of Hepatitis B Virus Infection in Hemodialysis Patients and Its Preventive Measures

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Abstract: Objective: To analyze the risk factors of hepatitis B virus infection in hemodialysis patients and put forward preventive measures. Methods: A total of 184 hemodialysis patients admitted to our hospital from March 2018 to April 2020 were selected as the subjects to analyze the risk factors of hepatitis B virus infection in hemodialysis patients. Results: 33 out of 184 hemodialysis patients were diagnosed with HBV infection, with an incidence of 17.93%. There were no statistically significant differences in gender, primary kidney disease, smoking history, blood donation history and operation history among hemodialysis patients ($p > 0.05$). There were statistically significant differences in age, duration of dialysis, total number of dialysis, history of hepatitis, times of blood transfusion, family history of hepatitis B, and dialyzer reuse ($P < 0.05$). Conclusion: The risk factors of hepatitis B virus infection in hemodialysis patients include age, duration of dialysis, total number of dialysis, history of hepatitis, blood transfusion, family history of hepatitis B and dialyzer reuse.

1. Introduction

Chronic renal insufficiency (CRI) is caused by serious damage to the glomeruli caused by various factors, which leads to disorders in maintaining acid-base balance, regulating water and electrolyte balance, excreting and metabolizing wastes, etc. Clinical treatment of CRI is mostly through blood purification. Hemodialysis often becomes a risk factor for infection with HEPATITIS B virus, and infection with hepatitis B virus will lead to hepatocellular carcinoma, liver cirrhosis, liver fibrosis, etc., posing a serious threat to patients' life and health [1]. In this study, 184 hemodialysis patients admitted to our hospital from March 2018 to April 2020 were selected as the analysis objects, aiming to explore the risk factors of hepatitis B virus infection in hemodialysis patients, and put forward corresponding prevention measures according to the actual situation, which are summarized as follows.

2. Clinical Data and Methods

2.1 Clinical Data

The study subjects were 184 hemodialysis patients admitted to our hospital from March 2018 to April 2020. Inclusion criteria: patients without mental illness; All patients understood the whole process of this study and signed informed consent. Exclusion criteria: patients with liver function injury caused by other factors; Patients with kidney, brain and heart diseases; A woman who is pregnant or breastfeeding; Patients with advanced cancer. There were 123 male patients and 61 female patients. The age is 39-75 years old (52.97 ± 12.13) years old.

2.2 Methods

Basic data such as gender, primary kidney disease, smoking history, blood donation history, operation history, age, duration of dialysis, total number of dialysis, history of hepatitis, times of blood transfusion, family history of hepatitis B and dialyzer reuse were analyzed and compared to analyze risk factors and related characteristics of infection.

2.3 Data Processing

In this experimental study, 184 hemodialysis patients were entered into statistical software SPSS23.0, in which [n (%)] was used to compare the risk factor count data, and X² was used to test the results. For example, P < 0.05 was statistically significant.

3. The Results

3.1 Analysis of Hepatitis B Virus Infection in Hemodialysis Patients

A total of 184 hemodialysis patients were examined, and 33 of them were diagnosed with HEPATITIS B virus infection, with an incidence of 17.93%.

3.2 Analysis of Risk Factors for Hepatitis B Virus Infection in Hemodialysis Patients

There were no statistically significant differences in gender, primary kidney disease, smoking history, blood donation history and operation history among hemodialysis patients (p > 0.05). However, there were significant differences in age, duration of dialysis, total number of dialysis, history of hepatitis, times of blood transfusion, family history of hepatitis B, and dialyzer reuse (P < 0.05). See Table 1 for details.

Table 1 Risk Factors of Hepatitis B Virus Infection in Hemodialysis Patients [n (%)]

factors	Investigation of cases(n=184)	Number of infections(n=33)	X ²	P
age			3.9003	0.0482
≥45 years old	94	23		
<45 years old	90	10		
gender			0.1165	0.7328
men	123	47		
women	61	21		
Dialysis time			8.2051	0.0041
<6 months	100	9		
≥6 months	84	24		
Total number of dialysis			6.4051	0.0113
<200 times	144	19		
≥200 times	40	14		
History of hepatitis			4.0593	0.0439
yes	142	20		
no	42	13		
Number of blood transfusion			19.9769	0.0000
<once	34	18		
≥once	150	15		
Primary renal disease			0.8597	0.3538
yes	37	9		
no	147	24		
Smoking history			0.1707	0.6795
yes	51	8		
no	133	25		
The history of blood donation			0.0000	0.9982
yes	39	7		
no	145	26		
The history of surgery			1.6940	0.1930
yes	19	6		
no	165	27		
Family history of Hepatitis B			15.7839	0.0000
yes	34	14		
no	150	19		
Dialyzer reuse			3.9664	0.0464
yes	25	9		
no	159	24		

4. Conclusion

Risk factors for hepatitis B virus infection in hemodialysis patients include age, duration of

dialysis, total number of dialysis, history of hepatitis, times of blood transfusion, family history of hepatitis B, and dialyzer reuse [2].

Hemodialysis patients with hepatitis b virus infection prevention interventions are as follows: (1) reduce the patients' blood transfusion, advocate the use of erythropoietin in anemia correction treatment, high safety, can effectively reduce the infection due to blood transfusion, enhance immunity, strengthen nutrition, effectively improve patients with hypoalbuminemia and anemia symptoms, most likely to reduce blood transfusion. (2) strengthen the management of extension dialysis, before the patient dialysis for its hepatitis, liver function tests, it is recommended that the patient half a year to review, for infected patients with hepatitis virus, strictly ensure that the device is used alone, to avoid cross-infection caused by patients with virus infection. (3) Strengthen the cleaning of hemodialysis room items and environment, regularly clean and disinfect dialysis machine and dialysis waterway, and carefully test the indicators of dialysis water. (4) Strengthen the operation standard of medical personnel, always carry out the concept of preventive measures, ensure aseptic operation, do a disinfection, disinfection of medical devices at any time, reduce pollution, avoid cross infection. The susceptible population should be vaccinated against hepatitis B, and the production of anti-hepatitis B antibodies should be measured regularly every year [3]. In this study, 33 out of 184 hemodialysis patients were diagnosed with HEPATITIS B virus infection, with an incidence of 17.93%. There were no statistically significant differences in gender, primary kidney disease, smoking history, blood donation history and operation history among hemodialysis patients ($p > 0.05$). However, there were significant differences in age, duration of dialysis, total number of dialysis, history of hepatitis, times of blood transfusion, family history of hepatitis B, and dialyzer reuse ($P < 0.05$).

Result in hemodialysis patients with hepatitis b virus infection of many factors, this study could not completely will be completely ruled out the hepatitis b virus infection caused by other factors, but if can analyses the risk factors to take effective preventive intervention measures, to reduce the incidence of hepatitis b virus infection is still of great significance.

In summary, age, total number of dialysis, history of hepatitis, number of blood transfusions, duration of dialysis, family history of hepatitis B and dialyzer reuse are all risk factors for hepatitis B virus infection in hemodialysis patients.

References

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