

The Effect of Hepatitis B on Humans

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Abstract

The aim of the study is to know the effect of the hepatitis B virus on humans, how the virus is transmitted, what is the method of preventing it, and what treatment is used to alleviate the severity of the disease. The questionnaire was designed via the Google Drive application and distributed via the social networking application (WhatsApp), with complete transparency to the population targeted by the research. The city of Mecca, from the age of (25-55 years), where 550 questionnaires were distributed via social media application groups (WhatsApp) according to available conditions (distancing), and answers to 525 questionnaires were obtained.

Keywords: *the effect, hepatitis B, humans.*

Introduction

Hepatitis B is an infectious disease caused by the hepatitis B virus (HBV) (1), which causes acute and chronic infections. There are many people who do not have any symptoms during the initial infection with the disease. Some people show rapid development of symptoms of the disease, including vomiting, jaundice, fatigue, dark urine, and abdominal pain (2). These symptoms often last a few weeks, and

the initial infection rarely causes death (2)(3). Symptoms of the disease may take from 30 to 180 days to begin (2). People who become infected with the disease at birth have a 90% chance of contracting the disease, while less than 10% of those infected develop it after the age of five (4). Most people who suffer from chronic disease do not have any symptoms, but over time, more serious complications may appear, such as cirrhosis and liver cancer (5).

Such complications may lead to the death of 15 to 25% of those suffering from this disease (2). The virus is transmitted through direct exposure to an infected person's blood or body fluids. The infection may be transmitted close to birth or from contact with the blood of others during childhood, and it is one of the most common methods of transmitting the disease, especially in areas where the disease is widespread, while areas where the disease is widespread Rarely, intravenous drug use and sexual intercourse are the most common routes of infection (2). Other risk factors include working in health care, blood transfusions, dialysis, living with an infected person, and traveling to countries where the incidence of the disease is high (2)(4). Tattooing and acupuncture were the biggest risk factors for the disease in the 1980s. However, this has become less common with the advent of sterilization methods (6). Hepatitis B virus cannot be spread by shaking hands, sharing eating utensils, kissing, hugging, coughing, sneezing, or breastfeeding (4). Infection can be diagnosed 30 to 60 days after exposure. Diagnosis is usually made by testing the blood for parts of the virus and antibodies against the virus (2). It is one of five known hepatitis viruses: A, B, C, D and E. Non-liver-related signs and symptoms appear in 1-5% of people infected with hepatitis C virus, and include serum sickness-like syndrome, acute vasculitis (arteritis nodosa), membranous glomerulonephritis, and the common skin infection. With Gianotti-Crosti syndrome (7)(8). Serum sickness-like syndrome usually occurs before the onset of jaundice when infected with hepatitis B (9, and its most important symptoms are fever, rash, and arteritis. Symptoms usually subside within days after the onset of jaundice, but in some cases, they may continue throughout the period of hepatitis B infection (10). Approximately 30%-50% of people with acute vasculitis (arteritis nodosa) carry the hepatitis B virus (11). Tests, or so-called assays, are used to detect hepatitis B virus infection. These tests include serum or blood tests that detect either viral antigens (proteins produced by the virus that are the main part that causes infection) or antibodies produced by the host or body. The interpretation of these assays is complex (12). Most often, surface antigen such as (HBsAg) is used as the first test to detect infection with viral hepatitis, as it is considered the primary

antigen produced by the virus and through which it causes infection, and therefore it is the first thing to be detected during the infection stage. However, detecting this antibody in... The initial infection stage of the disease may be difficult, especially in cases where the antibody is not present or the body has been able to eliminate it such that its presence cannot be noticed. The infectious virion contains the "endoplasmic core particle," which encapsulates the virus's genetic material. The core particles of isoforms consist of 180 or 240 copies of the core protein, the so-called virus-specific antigens (HBcAg) (13). PCR tests have been developed to detect the amount of HBV DNA in the virus causing the infection, which is called the viral load in clinical samples, as an expression of the amount of the virus in a certain volume of the body. These tests are used to evaluate the state of infection and thus contribute significantly to monitoring and following up on treatment. (14). Since 1991, the United States has recommended that infants be given the hepatitis B vaccine to prevent viral hepatitis B (15). Most of these vaccines are given in three doses over a period of months. If the blood serum of the person who received the vaccine contains a concentration of 10 ml-international units/ml (10 mIU/ml) of antibodies (anti-HBs), this means that the vaccination has given a positive result and that the recipient's body has become immune to the hepatitis B virus. The hepatitis B vaccine is able to generate highly effective immunity in children, and 95% of children who received this vaccine have enough antibodies in their bodies to protect them from this virus. Early viral cure may be present in a very small proportion of less than 1% in people who have a very strong infection (fulminant hepatitis) or who are immunocompromised. On the other hand, treatment for chronic infection may be very necessary to reduce cirrhosis and liver cancer as well. Usually, people with chronic disease lead to continued elevation of the alanine aminotransferase enzyme in the blood, which is a sign of damage to the liver and HBV-DNA levels. They are candidates for treatment (16), and treatment takes from six months to a year, depending on the treatment and genetics the person (17). Although none of the available medications can eliminate the infection, they can stop the virus from multiplying and thus reduce liver damage. Just as in 2008, seven medications have been

licensed to treat hepatitis B infection in the United States. This includes the antiviral medications: lamivudine, adefovir, tenofovir, telbivudine, and entecavir. There are two immune system influencers: interferon alpha 2A and interferon alpha 2A. The World Health Organization has recommended the combination of tenofovir and entecavir as first-line agents for people with cirrhosis (18). They are more deserving of this type of treatment (18).

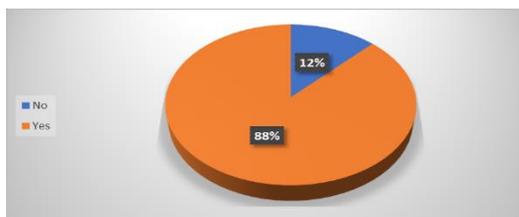
Material and Methods:

The study started in (the holy city of Mecca in Saudi Arabia), began writing the research and then recording the questionnaire in January 2022, and the study ended with data collection in June 2022. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (The effect of hepatitis B on humans). The independent variable (the prevalence of hepatitis B in the world), the dependent variable (the prevalence of hepatitis B in the city of Mecca). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation (19), And use the Excel 2010 Office suite histogram to arrange the results using: Frequency tables Percentages (20). A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because the questionnaire consisted of ten questions, all of which were closed. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere (21).

Results:

The approval rate for participation in the research questionnaire (The effect of hepatitis B type on humans) was 99.2%, and the rejection rate was 0.8%. As for the percentage of ages of participants in the questionnaire, it was as follows: 25-34 years old, 35.3%, 35-44 years old, 38%, and 45-55 years old, 26.7%. As for their gender, the percentage of males was 58.9% and the percentage of females was 41.1%. As for the nationalities of the participants, the majority of them were Saudi men and women, at a rate of 95.6%, and the percentage of non-Saudi men and Saudi women was 4.4%. As for their professions, they were as follows: student, 11.4%, careerist, 4%, government employee 54.1%, private sector employee 12.5%, self-employed person 7.4%, retiree 10.6%. When moving to the research questionnaire questions, the responses were as follows: The first question about hepatitis B is a serious liver infection caused by the hepatitis B virus. For most patients, it is short-term, known as acute infection, and lasts for less than six months, while for other patients, the infection becomes chronic, lasting for more than six months. Chronic hepatitis B infection increases the risk of liver failure, liver cancer, or cirrhosis - a disease that causes permanent scarring of the liver. Yes 95.7% and no 4.3%. The second question: Most adults infected with hepatitis B recover completely, even if they suffer from severe symptoms. Long-term hepatitis B affects children and infants more than others, and this type is described as a chronic infection? Yes 73.8% and no 26.2%. The third question: Is there a vaccine that can prevent infection with hepatitis B, while there is no treatment for infection with it? However, in the event of infection, taking certain measures can help prevent transmission of the virus to others? Yes 86.6% and no 13.4%. The fourth question: The symptoms of hepatitis B range from mild to severe. They usually appear within a period of approximately one to four months following infection, but the patient may feel them as early as the second week after infection. No symptoms may appear in some people, often... Of young children? Yes 87% and no 13%. The fifth question: Signs and symptoms of hepatitis B may include: abdominal pain, dark urine, fever, joint pain, loss of appetite, nausea and vomiting, weakness

and fatigue, yellowing of the skin and whites of the eyes. This condition is also called jaundice? Yes 93.7% and no 6.3%. The sixth question: What causes hepatitis B virus, hepatitis B infection? The virus is transmitted from one person to another through blood, semen, or other body fluids, and is not spread by sneezing or coughing? Yes 88.1% and no 11.9%. The seventh question: Among the common ways to spread the hepatitis B virus for a short period are the following: illicit sexual intercourse, sharing special tools or needles, or accidentally being pricked by needles? Yes 90.1% and no 9.9%. The eighth question: May hepatitis B infection last for a short period, which is the type also known as acute, or may it last for a long period, which is the type known as chronic? Yes 87.7% and no 13.2%. The ninth question is about the complications of hepatitis B, cirrhosis, liver cancer, reactivation of the hepatitis B virus, and liver failure? Yes 91.3% and no 8.7%. To prevent hepatitis B: Giving the hepatitis B vaccine to the following groups: newborns, children and adolescents who did not receive the vaccine after birth, residents or workers in care centers for people with disabilities and developmental problems, people residing with a person infected with hepatitis B, workers in the field Health care, emergency care, and all groups whose work requires contact with the blood of others, anyone with a sexually transmitted infection, and this includes infection with the human immunodeficiency virus, homosexuals, People who have sexual intercourse with multiple people, people who have had sexual intercourse with someone who has hepatitis B, people who use illicit drugs and share needles and syringes, people with chronic liver disease, people with end-stage kidney disease, travelers who intend to travel to a place where there is Increased incidence of hepatitis B infection? Yes 98% and no 2%. (figure.No.1), figure No.1:



Discussion:

Through the opinions and trends of the research participants, we find an increase in awareness

and complete knowledge to a degree of more than 90% about the seriousness of the hepatitis B virus, the ways to prevent it, the ways it is transmitted from one person to another, and the treatment used to cure it.

Acknowledgment:

To start with, I would like to Praise God and thanks my researchers, who made the project come to light.

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