



LEADING RISK FACTORS FOR THE DEVELOPMENT OF CHRONIC HEPATITIS

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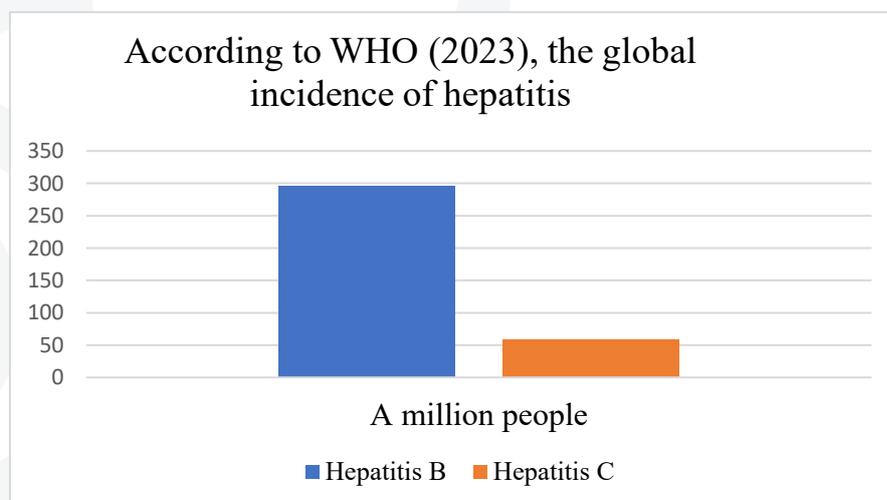
Abstract

The article presents an in-depth analysis of factors influencing the development of chronic hepatitis. Based on domestic and international experience, the interaction of socio-hygienic, environmental, psychological, nutritional and virological factors in the occurrence of this disease is considered. The study used an integrated approach based on previously published scientific literature, statistical data and practical observations. The main objective of the article is to create a scientific basis for the development of preventive strategies for the prevention of chronic hepatitis.

Keywords: Chronic hepatitis, socio-hygienic factors, viral hepatitis, nutrition, environmental situation, health care, prevention, risk factors.

Introduction

Chronic hepatitis is one of the global problems of our time, not only in clinical, but also in socio-economic, environmental and psychological terms. According to WHO, currently about 296 million people worldwide live with chronic hepatitis B, and 58 million people live with chronic hepatitis C. Every year, more than 1.1 million people die from hepatitis-related causes, which is comparable to the mortality rate from diseases such as AIDS or tuberculosis (WHO, 2022).





Chronic hepatitis is a long-term process that leads to persistent inflammation of liver cells (hepatocytes), proliferation of connective tissue (fibrosis), cirrhosis of the liver and even hepatocellular carcinoma (liver cancer). Viral agents (HBV, HCV, HDV) are considered to be the main cause of hepatitis. However, recent studies show that the activation and exacerbation of chronic hepatitis are closely associated not only with the virus, but also with many other factors - socio-economic conditions, environmental conditions, nutritional culture, psychological stress, professional activity, hygienic behavior and the quality of medical care (Schweitzer et al., 2015; Blach et al., 2017).

This issue is especially relevant for the Republic of Uzbekistan. In recent years, the number of hepatitis cases has been steadily increasing in our country. The number of hepatitis cases registered in the healthcare system of Uzbekistan in the period from 2020 to 2024 increases annually by 10-15%. This growth is directly affected by the difference in the level of access to healthcare services between the urban and rural population, the environmental situation, sanitary conditions, cultural and spiritual levels in different regions. At the same time, the social burden of hepatitis is also enormous. Patients with chronic hepatitis face long-term treatment, decreased ability to work, chronic fatigue syndrome, psychoemotional instability and economic difficulties. This, in turn, increases the economic and psychological burden on the quality of life of patients and their families (Yuen et al., 2018).

International epidemiological studies also highlight the role of social determinants (e.g. education level, employment status, income level, region of residence) in the development of hepatitis. For example, according to the 2019 EASL analysis, 65% of patients with chronic hepatitis B live in low- and middle-income countries. In such regions, most patients are unaware of the disease, and the virus develops in the body in a latent form for years. In addition, nutritional factors such as an unbalanced diet, alcohol consumption, a tendency to eat fatty and fried foods, and a lack of fruits and vegetables can lead to a severe course of hepatitis. In particular, in patients with fatty liver disease (steatosis) against the background of hepatitis, the restoration of hepatocellular function is much slower (Fattovich et al., 2008).

Psychological and stress factors cannot be ruled out either. Patients with chronic hepatitis often experience depression, anxiety, and social isolation, which directly or indirectly negatively affect the course of the disease (Nahas et al., 2020). Thus, the occurrence and development of chronic hepatitis is multifactorial and requires a comprehensive analysis of not only medical, but also social, environmental, and psychological aspects. The purpose of this study is to identify these factors, clarify the





relationship between them, and create a scientific basis for an integrated approach to hepatitis prevention.

Materials

- Statistical data and reports published by the World Health Organization (WHO) and CDC (US Centers for Disease Control and Prevention);
- More than 80 scientific articles published in PubMed, Scopus and Google Scholar databases from 2010 to 2024;
- Periodic statistical information of the Ministry of Health of the Republic of Uzbekistan;
- Results of clinical observations and social surveys conducted among patients with chronic hepatitis.

Research methods

1. Retrospective analysis - the state of chronic hepatitis was studied based on statistical data for the last 10 years.
2. Environmental assessment - special attention was paid to the spread of the disease among the population living in large industrial centers and ecologically unfavorable areas.
3. Medical and professional factors - the activities of professional groups (healthcare workers, beauty salons, dentists) associated with the transmission of hepatitis were analyzed.
4. Statistical processing - the degree of correlation between variables was determined using the SPSS program, correlation and regression analysis were carried out.

Main part

The development of chronic hepatitis and the influence of various factors on its clinical course is an extremely complex and multifaceted process from a medical and epidemiological point of view. Although the presence of the hepatitis virus (especially HBV and HCV) is the main condition for the occurrence of a chronic process, the severity of the disease, its progression to stages leading to cirrhosis or liver cancer, are largely determined by additional social, environmental, hygienic and psychological factors.



Influence of socio-economic factors.

Socio-economic factors - income level, place of residence, level of education, employment status - play a direct role in the course of chronic hepatitis. According to the World Health Organization, more than 70% of patients living with hepatitis B in low-income countries are unaware of this disease (WHO Global Hepatitis Report, 2021). This situation is due to limited access to health services, lack of medical knowledge and limited diagnostic capabilities.

Some studies conducted in Uzbekistan show that severe forms of chronic hepatitis (active hepatitis, subcompensated cirrhosis) are 1.8 times more common among patients living in low-income families. It was also noted that the level of early detection and treatment of the disease is significantly higher in higher income groups.

Hygienic and sanitary conditions.

Hepatitis, especially hepatitis A and E, are widespread in conditions of poor hygiene. Chronic hepatitis (B, C, D), although the transmission route is mainly parenteral, is also spread through hygiene procedures (unsterilized syringes, dental instruments, knives/sharpeners). Studies and indicators in some regions of Uzbekistan (e.g. Karakalpakstan, Surkhandarya region) show that the population's understanding of healthy hygiene is still insufficiently formed: 25% of patients do not have full information about the transmission routes of the disease.

Environmental factors.

In recent years, environmental factors have also contributed to the development of hepatitis: air pollution, water and soil pollution with heavy metals, pesticides and toxins in food. In particular, the hepatotoxic properties of aflatoxin have been scientifically proven. An article published by EASL in 2018 found a fourfold increase in the risk of developing hepatocellular carcinoma among people exposed to aflatoxin. In some regions of Uzbekistan, due to poor water quality and waste control, the incidence of hepatitis C among the population is 1.5 times higher than the national average (Republican Center of Virology, 2023).

Food and alcohol consumption.

Dietary habits play a very important role in the course of chronic hepatitis. Obesity, hyperlipidemia, poor nutrition, vitamin and mineral deficiencies negatively affect the development of hepatitis. Non-alcoholic fatty liver disease, developing against the background of hepatitis, further weakens liver function. Alcohol consumption increases the destruction of liver cells against the background of hepatitis C and B and





increases the risk of developing liver cirrhosis by 2.5-3 times (Niederau et al., 2003). Clinical observations conducted among Uzbek patients also showed that in patients with alcoholic hepatitis, ALT and AST levels were 3-5 times higher than normal.

Psychological and stress factors

Psychological imbalance is common in patients suffering from chronic diseases. Studies have shown that 30-40% of patients with chronic hepatitis have symptoms of depression, and more than 20% have anxiety (Foster et al., 2015). These psychological conditions lead to a weakened immune system, which in turn accelerates the reproduction of the hepatitis virus and accelerates liver damage.

In addition, social stigma (rejection from others, concealment of the disease) in patients diagnosed with hepatitis also negatively affects the course of the disease. Patients often postpone treatment, do not follow a diet, and deny symptoms.

Lack of health services and screening programs

Most people with hepatitis B and C are unaware of their disease and seek medical care only when the disease becomes severe. Screening programs in the Republic of Uzbekistan are still implemented on a limited scale. In 2022, only 12% of the population was screened for hepatitis B and C (data from the Ministry of Health, 2023).

Conclusion

1. There are multifactorial causes of chronic hepatitis development - in addition to the routes of virus transmission, social, environmental, psychological and nutritional factors play a significant role.
2. Research shows that people living in disadvantaged and ecologically unfavorable areas are at a significantly higher risk of contracting hepatitis, and it is necessary to improve the activities of health care institutions.
3. Prevention strategies should be aimed at blocking the routes of virus transmission, as well as improving lifestyle, improving nutrition, increasing hygiene culture and reducing environmental risks.

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