ISSN: 2582-4686 SJIF 2021-3.261,SJIF 2022-2.889, 2024-6.875 ResearchBib IF: 9.948 / 2024

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-6, ISSUE-1

PREVALENCE AND CAUSES OF LIVER CIRRHOSIS IN DIFFERENT REGIONS LITERATURE REVIEW

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Annotation. Chronic liver diseases, including fibrosis and cirrhosis, can be associated with chronic malnutrition. Malnutrition, i.e. less than the required amount of food intake (hypoalimentation), is often caused by a misunderstanding of the meaning of the term "liver diet", slowing down of food digestion processes (including secretion of bile acids), metabolic disorders consisting of limitation of protein synthesis and increased catabolism and acceleration of processes.
Key words: Liver cirrhosis, decompensated cirrhosis, steatohepatitis, hepatitis B, hepatitis C.

Liver cirrhosis (LC) is a diffuse process, manifested by a change in its normal structure as a result of fibrosis and nodule formation, and in most cases occurs in the final stages of chronic diffuse diseases of the organ [5: 245-266]. In the early stages of the disease, it proceeds asymptomatically (compensation stage), and later the process is accompanied by an increase in pressure in the portal system and deterioration of liver function. This is accompanied by the appearance of clinical signs in the form of complications of LC (decompensation stage). In the compensation stage, most patients, as a rule, do not experience significant changes in their quality of life and can remain latent for several years. In the decompensation phase, patients develop a variety of clinical signs, including ascites (fluid accumulation with or without infection), bleeding from esophageal and gastric varicose veins, hepatic encephalopathy, hepatorenal and hepatopulmonary syndrome, cirrhotic cardiomyopathy, and secondary adrenal insufficiency and infection-related complications (spontaneous bacterial peritonitis, urinary tract infection, pneumonia, soft tissue infection, and bacteremia).

The most recent available data on the global prevalence of CVD are provided in the 2017 Global Survey of Diseases, Injuries and Risk Factors.

This study, based on pooled epidemiological data from 195 countries and regions, reports the incidence of cirrhosis by cause, age, and sex from 1990 to 2017. The results are presented as prevalence rates and age-standardized or age-specific rates per 100,000 population, with 95% confidence intervals (CIs) and relative risks. In 2017, 112 (CI 107-119) million people worldwide had compensated cirrhosis and 10.6 (CI 10.3-10.9) million people in decompensated cirrhosis. In 1990, these figures were 65.9 (CI 63.4-68.7) and 5.20 (CI 5.08-5.32) million, respectively. The figures show that the number of patients with cirrhosis has almost doubled during these years. The age-standardized prevalence of compensated cirrhosis increased from 1354.5 (CI 1300.6-1411.7) per 100,000 population in 1990 to 1395.0 (CI 1323.5-1470.5) in 2017, while the decompensated stage of the disease was 110.6 (CI 108.0-113.0) and 132.5 (CI 128.6-136.2), respectively. According to the 2017 study, 58.8% of compensated cirrhosis and 60.3% of decompensated cirrhosis were observed in men. These figures give reason to assume that men are more likely to have cirrhosis. When analyzed in

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age-standardized terms among patients with advanced disease, the prevalence of compensated cirrhosis increased by 2.9% from 1990 to 2017. The prevalence of decompensated cirrhosis increased by 21.1%. In women, these figures were 3.5% and 18.1%, respectively. Overall, the prevalence of cirrhosis increased by 74.53% from 1990 to 2017 [13: 279-300].

The Global Diseases, Injuries and Risk Factors Study describes the epidemiologic characteristics of LC at the regional level [5: 245-266]. In 2017, the highest age-standardized prevalence of compensated and decompensated hepatitis was observed in the economically developed countries of the Asia-Pacific region, with 2455.0 (CI 2344.9-2575.8) and 267.4 (CI 259.8-275.1) cases per 100,000 population, respectively. It should be noted that most of this negative change was observed in the Japanese population and is associated with a high incidence of hepatitis C among citizens of this country. On the contrary, data on the low prevalence of compensated and decompensated hepatitis in Australia are presented, but they also indicate that hepatitis C is the main cause of the disease. The lowest standardized prevalence of compensated hepatitis (mainly due to hepatitis C) was observed in economically developed countries of the North American region. The lowest prevalence of decompensated hepatitis was observed in South Asia. When examined across countries, the highest prevalence of compensated HCV was observed in patients living in Moldova, Taiwan, and Slovakia. The detection of those in the decompensated stage was lowest in the Philippines and highest in Slovakia.

Recent studies also provide statistical data on the prevalence of the disease, taking into account the etiology of HCV. A systematic review of 520 studies conducted in 86 countries and territories worldwide, including a total of 1,376,503 HCV patients (observations conducted until August 1, 2021), showed that 42% of patients identified worldwide had chronic hepatitis B and 21% had hepatitis C infection [7: 724-735].

The prevalence of hepatitis B virus infection was higher in Africa and Asia (8%-61%) than in Europe, the Americas, and Oceania (3%-14%). The prevalence of hepatitis C virus infection varied significantly across countries and regions (12%-83%). Overall, the prevalence of these two infections was greater than 50% in most parts of Asia and Africa. In China, 68% (95% CI 60%-74%) of patients with hepatitis B virus infection were infected with hepatitis C virus, while only 7% (95% CI 5%-9%) were infected with hepatitis C virus [7: 724-735].

When age-standardized analysis was performed, the prevalence of compensated hepatitis B virus-associated hepatitis in 2017 did not change significantly compared to 1990, but the prevalence of decompensated hepatitis increased from 30.9 (95% CI 29.3-32.2) to 36.6 (95% CI 34.7-38.4) per 100,000 population. When these indicators were examined in relation to hepatitis C, the prevalence of compensated hepatitis B virus-associated.

The highest prevalence rates of CVD due to alcohol abuse are observed in Europe (16%-78%), North and South America (17%-52%), and Oceania (15%-37%), with the lowest rates in Asia (0%-41%).

In 2017, the age-standardized global prevalence of alcohol-related compensated cirrhosis remained stable compared to 1990 (288.1 per 100,000 population in 2017 and 290 in 1990). However, the global prevalence of the disease in the decompensated stage due to this cause has increased since 1990 (increasing from 25.3 per 100,000 population in 1990 to 30 in 2017) [5: 245-266]. It should be noted that in 2017, 9.42 million (II 8.57-10.34) patients in the compensation stage of JTs developed due to non-alcoholic fatty liver disease and 917,000 (II 850000-986000) in the decompensation stage

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due to steatohepatitis were recorded. These figures show that the disease has increased significantly compared to 1990.

The age-standardized prevalence of compensated NAFLD was 115.5 (CI 105.0-126.5) per 100,000 population in 2017, an increase of 33.2% compared to 1990. The prevalence of decompensated NAFLD was 11.3 (CI 10.4-12.1) per 100,000 population in 2017, an increase of 54.8% compared to 1990. Although NAFLD is often caused by adverse drug reactions, autoimmune diseases, metabolic disorders, and other causes, there is no information on its global or regional prevalence in the literature [5: 245-266].

A study conducted in the United States analyzed statistical data on the prevalence and severity of digestive diseases among the insured adult population between 2016 and 2018. Of the total population studied, 7,297,435 (24%) were diagnosed with digestive diseases, and 0.389% (0.090% of the total population) of them were diagnosed with non-alcohol-related CVD.

Gu et al. studied all hospitalizations associated with a diagnosis of CHD in Germany between 2005 and 2018. They found that a total of 248,085,936 patients were hospitalized during this period, of which 2,302,171 were diagnosed with CHD, representing a prevalence of 0.94%..

In a comparative study conducted in Japan in 2020, 6,000 citizens from 2 cities in the country were monitored, and 488 of them were screened for fatty liver disease and its fibrosis. Based on the detection of liver stiffness, the prevalence of cirrhosis among the subjects was 1%, with a significantly higher incidence in men than in women (1.6% and 0.4%, respectively) [5: 245-266].

Another observational study using a database of physician referrals found that the prevalence of LC in adults was 0.21% in 2018, with a population of 536,856. According to the US National Health and Nutrition Examination Survey (NHANES), a cross-sectional study conducted in 2017-2018 among 825 adults with type 2 diabetes who had reliable transient elastography results found a prevalence of CVD of 7.7% (95% CI 4.8%-11.9%).

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