

Alcohol-Related Liver Disease (ARLD) Impact on Adult Patients and the Biopsychosocial Approach

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Abstract

Introduction: Alcohol-Related Liver Disease (ARLD) refers to liver damage caused by excessive alcohol usage. Psychological, social and biological factors influence health behavior during the lifetime. The etiology is based on quantity of alcohol, drinking pattern, and gender while the pathophysiology in ARLD is complicated and perplex. ARLD patients suffer from stigma by means of society as well as healthcare professionals and family. The Biopsychosocial approach gives equal significance to psychological, biological and sociocultural factors and fits in the current condition of ARLD patient.

Methodology: An electronic search was carried out and databases searched including PubMed, Jama, World Journal of Gastroenterology, and Willey Online Library.

Discussion: The biopsychosocial approach can offer a lot to the treatment of alcoholism based on the evidence that comes from pathogenesis, epidemiology, treatment and course from ethanol dependence.

Conclusion: Effective treatment of alcohol-related liver disease should be relied on a multidisciplinary strategy including public health interventions, addiction behavioral approach and management of alcohol-related organ injury.

Keywords: ARLD; Treatment; Biopsychosocial Model; Stigma; Liver

Introduction

Located in the right side of the abdomen, the liver is vital to the detoxification, immune system and metabolic functions. Alcohol is a psychoactive substance with properties that cause dependence. Alcohol-Related Liver Disease (ARLD) concerns liver damage brought about by excessive alcohol use; as a result, liver becomes unable to regenerate itself. Symptoms of ARLD are noticeable only after the liver is seriously damaged. Abdominal pain, confusion, fatigue, vomiting blood, loss of appetite, jaundice (yellowing of skin and eyes), swelling in legs, hair loss and important weight loss can be included in symptoms. Fatty liver (steatosis), alcoholic hepatitis and cirrhosis (fibrosis) form the three different stages of ARLD [1].

Health inequities concern disparities in health status regarding different population groups that arise from the uneven distribution of determinants of health associated with health care services, living and working conditions, goods and services, status and income. Inequities related to health issues and alcohol-related deaths in many European countries are stronger

than the differences in consumption of alcohol from individuals who have got worse health on account of socioeconomic position. A lifespan approach concentrates on a healthy beginning of life and aims at human needs at crucial times, investing in the interaction of multiple risk, protective and promotive factors during people's life. Psychological, biological as well as social factors seriously affect health behavior during the lifetime. A life course approach to health is of crucial importance; therefore, it should be accompanied by growing awareness of the negative alcohol impact and a demonstrated commitment to an effective life-changing decision in order to clarify new mechanisms of disease causality and to create measures with respect to the amelioration and maintenance of health [2].

Etiology

The etiology of the individual's ARLD is identified by quantity of alcohol, by drinking pattern, as well as by gender; drinking excessively can become more vulnerable to develop Alcohol-Related Liver Disease in comparison to men. Other co-factors are the influence of peer affiliation and pressure and dietary

factors, such as beliefs regarding exercise and healthy diet, as a prevention strategy against the development of liver disease [3, 23].

Pathophysiology

The biological mechanisms of ARLD are complex and not entirely comprehensible [4]. Alcohol-related liver disease is induced by ethanol metabolism by hepatic alcohol dehydrogenase (ADH) and cytochrome CYP2E1 that create the toxic acetaldehyde [5]. Alcohol is absorbed by means of the gastrointestinal system into the blood flow and mostly metabolized by the main functional liver cells, hepatocytes. Heavy consumption of alcohol provokes changes in lipid metabolism, raising lipogenesis along with lipid mobilization, reducing hepatic lipid catabolism, leading to lipid aggregation of hepatocytes (fatty liver). Chronic heavy drinking can also create a progressive inflammatory condition of alcoholic hepatitis (steatosis), whether followed by hepatic lipid deposition. Perseverance and intensity of alcoholic hepatitis and hepatic steatosis bring about irredeemable hepatocellular changes, resulting in sclerotic changes, fibrosis, liver cirrhosis and finally hepatocellular carcinoma (HCC) [1].

It is well documented that alcohol consumption induces worldwide more than 10% of Non-Communicable Diseases (NCDs), including cancers (esophagus, pharynx, larynx, colorectal, liver), hypertension, hemorrhagic stroke and pancreatitis. Furthermore, 5.1% of the global pressure of injury and disease is ascribed to alcohol consumption, based on the time usage of the disability-adjusted life year (DALY), and 5.3% of all deaths emerge from harmful alcohol use. Especially in Europe, 6.5% of all deaths are caused by alcohol addiction; resulting in one in every seven male deaths and one in thirteen female deaths aged 15 to 64 years [6].

Epidemiology

Women are more susceptible to harmful results of prolonged and severe alcohol usage in comparison to men; even young women, between the ages of 17 and 29, whose psychosocial and psychopathological disorders have started in adolescence and still continued to experience them in young adulthood. This consists of the “female paradox”, which is noticed in female patients who suffer from alcoholic liver disease and not from chronic viral hepatitis, and drink even smaller quantities of alcohol compared with men, as gender is presented as a strong genetic modifier [5,6].

It was mentioned that women are two times more sensitive to ethanol mediated hepatotoxicity and maybe develop more serious ARLD even if they drink alcohol in lower doses and in a short period of time compared to men. Many studies have pointed out that after consuming equal amounts of alcohol men present different blood alcohol concentration levels in contrast with women. This happens because of sex-specific differences in the relevant quantity of Alcohol Dehydrogenase (ADH) in human stomach, female body fat percentage as well as in fat distribution and changes in absorption of alcohol due to menstrual cycle [7]. In addition, high estrogen metabolism and low testosterone lead to important liver injury. Estrogen induces growth hormone secretion which, in turn, raises ADH in the liver [5].

Based on Eurostat (2021) [8], a prevalence of serious alcohol consumption is demonstrated on behalf of men on a daily and

weekly basis (4.1% of females vs. 13.0% of males and 21.7% of females vs. 36.4% of men). For this reason, both women and men should drink no more than 14 units per week regularly; one unit is tantamount to 8 g of pure alcohol. Nevertheless, many studies indicate that females tend to develop alcohol-related liver disease with less important exposure despite suffering worse disease compared to men.

It was underlined that there has been a high incidence of 50% of alcohol use disorder with women displaying an 84% change in comparison with a 35% showing in males. Also, it is stated that as women’s employment increases, and more and more females achieve to realize their professional and educational opportunities, normalization of alcohol intake and binge drinking (high-risk consumption) rises [9,24]. Sex differences occur in private and public drinking and can be explained by gender equality by country, educational background, economic equality and reproductive autonomy.

Women are more influenced by alcohol-associated liver injury, as drinking any amount of alcohol lead them to run a greater hazard of having alcohol-related liver disease and a faster progress in cirrhosis (typically 20 years) in contrast to men (typically 35 years). It still remains vague if there are any survival differences in women and men with ARLD or if gender defines the survival rate prediction regarding acute liver failure [10]. Centers for Disease Control and Prevention (CDC, 2020), underlines that excessive alcohol usage poses a major health threat, as it is closely associated with women’s health and connected with more than 27,000 deaths of females every single year. Furthermore, it emphasizes the harmful effects which include, apart from liver disease, cancers and impacts on heart and brain, sexual violence, as well [11].

The Biopsychosocial Model

According to psychiatrist George Engel (1977), the biopsychosocial model considers the development illness through the perplex interaction of biological, psychological and social factors. There is a deep interrelation of all these three key factors which actually defines the cause, manifestation and health-related outcomes. Its approach recognizes that each and every patient has got their own feelings, history and thoughts. Adopted by WHO in 2002 for the framework of the International Classification of Functioning, Disability and Health (ICF), the biopsychosocial model can contribute to a more sustainable and successful health system [2,5].

The biopsychosocial model comprises the biological factors, which mainly refer to genetic conditions and inherited personality characteristics, the psychological factors, such as stress levels, health beliefs and lifestyle as well as social factors that concern family relationships and social factors, like income, education, health care, economics and housing [2].

It is suggested that the biopsychosocial model will positively contribute to the individual’s health condition for many reasons. It is claimed that Alcohol Related Disease (ALD) rate and alcohol intake will continue rising in the coming years, inevitably correlated to biopsychosocial problems that human society is confronting. Therefore, healthcare systems deal with an important and increasing need for ALD treatment. Interventions based on alcohol abstinence are the fundamental component of clinical ALD management. Nevertheless, owing to the high relapse rate that is observed in Alcohol Use Disorder

(AUD) patients, there is a growing need for developing and using new treatment options [12].

ALD has got multifactorial and complicated pathogenesis, containing genetics, immune response, environmental functions, and gut microbiota. It is a biopsychosocial condition whose successful treatment is based on the integration of crucial clinical response, accurate adherence, and less cost connected with the ALD in the long run and in short period of time. For this reason, innovative therapeutical approaches have come out of to support research efforts, like probiotic discovery and development as well as new gene-editing techniques [13].

It is obvious that the biopsychosocial model gives equal significance to psychological, biological and sociocultural factors and better fitted in the current condition of ARLD patient; as a result, their interaction induces most of the disorders, illnesses, and syndromes along with disorders of addiction. Thus, these factors must be confronted in such a way so as to lead to a recovered state. Through the biopsychosocial model, the patient's own experience can become understood and contribute to precise diagnosis, humane care. Furthermore, excessive drinking in early adulthood and later in midlife is usually connected with working habits and social networks whose booze culture is an unspoken necessity if progress is a top priority for ambitious professionals. In business, heavy drinking between women and men helps building stronger bonds with colleagues and better relations with existing clients [13].

Both men and women with serious alcohol-related problems many times feel anxious about being evaluated by others, especially when they are exposed to work situations and, therefore, accountable for their performance [14]. In addition, it can reduce not only life expectancy and rise health care costs, but also reduce employees' productivity which leads to lower Gross Domestic Product (GDP).

Stigma

Stigma should also be mentioned, as sexist attitudes towards females' drinking persistence globally, resulting in most cultures in developing higher stigma connected with drinking by women than among males. In this case, females are strongly stigmatized and rejected, especially in local communities. But when social culture of companies is attached to drinking, both women and men put themselves in great danger due to social network [15]. Stigmatisation of ARLD patients by society and by healthcare professionals is of great concern, as the prevalence of their discrimination experiences and prejudice make them feel isolated and worthless in life and at work. Since alcohol-related liver disease is also thought self-induced, patients avoid seeking support or assistance even at an earlier stage [16].

Discussion

Alcoholism in females under the perspective of biopsychological model reveals a number of complex challenges and circumstances that women alcoholics confront in comparison to men. Biologically, females have got a different reaction towards the toxic alcohol ingestion in comparison with men. Even if the danger for cirrhosis rises with excessive drinking alcohol for both genders, females are still much more susceptible to alcohol-associated liver disease, and especially to development of cirrhosis, which can lead to permanent disability or death [17]. Females aged 35-49 years usually prefer heavy drinking to

gain a sense of connection with their social circles by reason of their divorce, separation, sudden unemployment or their kids; however, on account of significant social stigma of alcoholism, they become self-destructive and indifferent in comparison to men. Psychosocially, women who abuse alcohol deal with more shame, guilt and societal reprimand than do men. Therefore, they are more vulnerable to dangerous health consequences that influence personal, social and work life balance [17].

Multiple and multifaceted reactions of many alcoholic women towards losses of life push them to develop the tendency to define themselves through their relationships with other people, creating a vicious cycle because of their weakness to fulfill their role personally or socially. The same behaviour is also noticed to those who want to avoid disconnection from their co-workers [18].

ARLD is induced by damage to the liver by virtue of excessive alcohol consumption for years. If the organ becomes inflamed and swollen, alcoholic fatty liver disease, acute alcoholic hepatitis or alcoholic cirrhosis, which can be fatal, are the stages that follow. Patients are recommended they quit drinking alcohol, as is a matter of vital importance. Nonetheless, it is not an easy decision, as withdrawal symptoms and relapses can make human body suffer. For this reason, to take medications, maintain a balanced diet, have mental health treatment, such as cognitive behavioral therapy (CBT), participate in self-help groups or specialist rehabilitation clinics can offer great help [19].

A biopsychosocial approach to the treatment of alcoholism is necessary based on the evidence that comes from pathogenesis, epidemiology, treatment and course from ethanol dependence. Outpatient long-term intensive therapy for seriously alcohol-dependent patients (OLITA) is an integrated, intensive program that combines fundamental elements from cognitive-behavioral therapy, client-centered therapy, a strict abstinence from alcohol and classical addiction therapy with psychiatric patient care. This therapeutic approach can help the individual maximize positive treatment outcomes and guarantee a long-term recovery, as it reports over 50% sustained abstinence after 9 years, a re-employment rate of around 60%, a noticeable recovery from comorbid anxiety and depression, and physical complications, constitute outcome information that are empirically relied on treatments accompanied by proven high predictive validity, specially concentrated on therapeutic attempts [20].

Conclusion

It is widely underlined the significance of biopsychosocial approach, which can be proven very effective for the individual, as it successfully incorporates strategies to ameliorate coping, decrease craving, deal with triggers, and prevent any possible relapses. Confronting complex emotional as well as negative life experiences, enhancing social support for sobriety and creating a lifestyle free of alcohol are absolutely necessary for long-term recovery, even if pharmacotherapy is usually reflected as a basic part of ARLD recovery, and recommended due to usual malnutrition or for maintenance of alcohol abstinence [21]. To enforce long-term outcome, it is of major importance for female patients to receive encouragement to overcome barriers to increase the readiness to change, such as family opposition, cost of treatment, and denial of chronic alcoholism to

ensure the successful treatment of alcohol addiction [15,17].

Effective treatment of alcohol-related liver disease in order to decrease alcohol abuse and accomplish alcohol abstinence should be founded on a multidisciplinary strategy that also includes public health interventions, addiction behavioral approach and management of alcohol-related organ injury [22], while brief interventions could be better used for patients with mild AUD and take place in the primary care.

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