

Mental and Physical Symptoms of Alcohol Hangover

Gudisa Bereda^{1*}

¹Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia

***Corresponding Author:** Gudisa Bereda, Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia

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Abstract

Alcohol hangover can be defined as the combination of mental and physical symptoms that are experienced the day after an episode of heavy alcohol drinking, launching when blood alcohol concentration approaches zero and characterized by the constellation of unpleasant physical and mental symptoms that occur after heavy alcohol drinking. Significant changes observed on endocrine parameters (elevated concentrations of vasopressin, aldosterone, and renin) and metabolic acidosis (lowered blood potential hydrogen values due to elevated concentrations of lactate, ketone bodies, and free fatty acids) occurred during hangover and eventually causes dehydration and symptoms such as dry mouth and thirst. Females have more body fat and less water than men of the same body weight. Since alcohol is dispensed in body water, women reach higher blood alcohol concentrations levels than men despite consuming an identical number of alcohol units. Alcohol gets metabolized to an intermediate product, acetaldehyde, by the enzyme alcohol dehydrogenase, and then acetaldehyde is converted to acetate by a second enzyme aldehyde dehydrogenase. Acetaldehyde at higher concentrations causes toxic effects, such as rapid pulse, sweating, skin flushing, nausea, and vomiting. In most people, aldehyde dehydrogenase metabolizes acetaldehyde quickly and efficiently, so that this intermediate metabolite does not accumulate in high concentrations.

Keywords: alcohol hangover; mental; physical; symptoms

Introduction

The term alcoholism defined by World Health Organisation as 'drinking that cause's emotional, social or physical damage to the individual' [1]. Alcohol hangover can be characterized by pain symptoms. The medical term for alcohol hangover "veisalgia" comes from the Norwegian kveis, which referred to "the uneasiness following debauchery", and algia, the Greek term for "pain" [2]. Alcohol hangover can be defined as the combination of mental and physical symptoms that are experienced the day after an episode of heavy alcohol drinking, launching when blood alcohol concentration approaches zero and characterized by the constellation of unpleasant physical and mental symptoms that occur after heavy alcohol drinking [3]. Alcohol hangovers may negatively impact people's psychological and physical well-being by elevating accidents and injury and impairing daily activities such as driving a car or riding a bicycle [4]. Hangover most frequently observed adverse effect of heavy alcohol intake, resulted in substantial economic costs due to lost productivity and hangover may also

generate psychomotor performance decrements that could accelerate risk for accidental injury or death when operating a motor vehicle or engaging in other potentially dangerous activities [5]. Significant changes observed on endocrine parameters (elevated concentrations of vasopressin, aldosterone, and renin) and metabolic acidosis (lowered blood potential hydrogen values due to elevated concentrations of lactate, ketone bodies, and free fatty acids) occurred during hangover and eventually causes dehydration and symptoms such as dry mouth and thirst [6]. Physical symptoms of a hangover include fatigue, headache, enhanced sensitivity to light and sound, redness of the eyes, muscle aches, and thirst. Signs of elevated sympathetic nervous system activity can accompany a hangover, involving elevated systolic blood pressure, rapid heartbeat (i.e., tachycardia), tremor, and sweating. Mental (neuropsychological) symptoms involve dizziness; a sense of the room spinning (i.e., vertigo); and possible cognitive and mood disturbances, especially depression, anxiety, and irritability. The particular set of symptoms

Neurons and Neurological Disorders

experienced and their intensity may vary from person to person and from occasion to occasion. Additionally, hangover characteristics may depend on the type of alcoholic beverage intake and the amount a person drinks [7-9]. The symptoms experienced during post-intoxication state are caused by the alcohol hangover, which develops when blood alcohol concentrations return to zero. The feeling of general misery can persist up to 24 hrs and can significantly affect the planned activities and cognitive functioning [10]. Sex differences in acute alcohol effects have been well proposed. Females have more body fat and less water than men of the same body weight. Since alcohol is dispensed in body water, women reach higher blood alcohol concentrations levels than men despite consuming an identical number of alcohol units. Moreover, women usually have elevated bioavailability and faster disappearance rates than men. Also, alcohol appears to impair cognitive and psychomotor functioning in women more than in men [11,12]. Alcohol gets metabolized to an intermediate product, acetaldehyde, by the enzyme alcohol dehydrogenase, and then acetaldehyde is converted to acetate by a second enzyme aldehyde dehydrogenase. Acetaldehyde at higher concentrations causes toxic effects, such as rapid pulse, sweating, skin flushing, nausea, and vomiting. In most people, aldehyde dehydrogenase metabolizes acetaldehyde quickly and efficiently, so that this intermediate metabolite does not accumulate in high concentrations. Accumulation of acetaldehyde leads to the development of physical symptoms of hangover, which include fatigue, headache, increased sensitivity to light and sound, redness of the eyes, muscle aches, and thirst [13-15].

Conclusion

Hangover is commonly referred to as the cluster of symptoms that arise following the end of a drinking episode, and has both physiological and behavioral manifestations. Alcohol hangover can be characterized by pain symptoms. The medical term for alcohol hangover “veisalgia” comes from the Norwegian kveis, which referred to “the uneasiness following debauchery”, and algia, the Greek term for “pain”. Alcohol hangovers may negatively impact people’s psychological and physical well-being by elevating accidents and injury and impairing daily activities such as driving a car or riding a bicycle. Mental (neuropsychological) symptoms involve dizziness; a sense of the room spinning (i.e., vertigo); and possible cognitive and mood disturbances, especially depression, anxiety, and irritability. The

particular set of symptoms experienced and their intensity may vary from person to person and from occasion to occasion. Additionally, hangover characteristics may depend on the type of alcoholic beverage intake and the amount a person drinks.

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Competing interests

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