

TREATING ALCOHOL WITHDRAWAL SYNDROME

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ABSTRACT

The purpose of this research is to look at the prevention and treatment of AWS in the hospital setting. This paper discusses alcohol misuse and alcohol withdrawal syndrome (AWS). Finally, it includes the exploration of the reasons, signs, and symptoms of AWS.

Keywords: *Alcohol Withdrawal Symptoms, Delirium Tremens, Ethanol Administration, Prevention of Alcohol Withdrawal Symptoms Prevention, Delirium Tremens Prevention*

INTRODUCTION

Misuse of alcohol is estimated to affect approximately 18 percent of the population in their lifetime (Mirijello et al., 2015). According to Mirijello et al., approximately 20 percent of the adult population in emergency rooms suffer from alcohol use disorder. In addition, Mirijello et al. shares that the prevalence of alcohol withdrawal syndrome (AWS) of patients who are admitted into surgical Intensive Care Units (ICU), is somewhere between 8 to 40 percent. Of these individuals, an estimated 50 percent will experience withdrawal symptoms, and of these people, 3 to 5 percent will experience delirium tremens symptoms such as grand mal seizures and severe altered mental status (Kivi & Gotter). Delirium Tremens is the most severe form of alcohol withdrawal (Kivi & Gotter, 2017). Individuals who are long time, heavy consumers of alcohol, are at risk for delirium tremens if they abruptly stop drinking or dramatically reduce their intake (Kivi & Gotter). Health care resources are utilized to manage the complications related to ethanol (Ambrosi et al., 2016). According to Ambrosi et al., "In 2006, excessive ethanol consumption cost the United States \$223.5 billion, 11 percent of which were health care related costs" (p. 1). Due to this, health care providers search for practical methods to prevent and treat alcohol withdrawal symptoms (Ambrosi et al.).

Alcohol Misuse

According to the Centers for Disease Control and Prevention (CDC), excessive drinking includes binge drinking or heavy drinking ("Fact Sheets", 2016). Binge drinking is defined as four or more drinks in one setting for women, and five or more drinks for men ("Fact Sheets"). Heavy drinking is defined as eight or more drinks per week for women and fifteen or more drinks per week for men ("Fact Sheets").

Reasons for Alcohol Withdrawal Syndrome (AWS)

Alcohol withdrawal syndrome affects those that are long time, heavy consumers of alcohol. There are several reasons that may cause an individual to suffer from AWS. These include abrupt cessation of drinking, reduction of alcohol intake too rapidly or not consuming enough food when reducing alcohol intake, have had a head injury, or are ill or have an infection (Kivi & Gotter, 2017).

Excessive alcohol intake impacts the brain's neurotransmitters, the brain's chemical messengers to the brain and nervous system. Alcohol impacts the nervous system by suppressing the brain neurotransmitters, resulting in relaxation. However, when alcohol is no longer consumed or in a sufficient quantity, the neurotransmitters become unsuppressed and go into an overexcitement state (autonomic hyperactivity), which can lead to AWS (Kivi & Gotter, 2017).

Symptoms of AWS

According to CDC, signs and symptoms of AWS will usually present within three days of abrupt cessation of drinking or reduction of alcohol consumption ("Fact Sheets", 2016). These signs and symptoms are included in Appendix A. Mirijello et al. (2015) discuss that symptoms of alcohol withdrawal can actually start as early as 6 to 24 hours after sudden cessation or reduced intake.

Adams and Ferguson (2017) discuss the timing of AWS, that initial withdrawal occurs in 6 to 36 hours, seizures may occur in 6 to 48 hours, hallucinations start to occur in 12 to 48 hours, and delirium tremens occur in 48 to 96 hours from the cessation or reduction of alcohol intake.

Treatment of AWS and Management

According to Mirijello et al. (2015), the gold standard in treating patients with alcohol withdrawal syndrome is with benzodiazepines. If severe enough, the patient may require barbiturates or propofol (Mirijello et al.). Other adjunctive pharmacological treatments include α_2 -agonists, such as clonidine or dexmedetomidine and b-blockers for autonomic hyperactivity, and neuroleptic agents for hallucinations, plus many others (Mirijello et al.).

Adams and Ferguson (2017) discuss similar supportive treatments in ICU. According to Adams and Ferguson, the two most universally used tools are the Clinical Institute Withdrawal Assessment for Alcohol Scale (CIWA-Ar) and the Riker Sedation-Agitation Scale (SAS). In conjunction with this assessment, is pharmacologic therapy. As stated by Adams and Ferguson, "benzodiazepines are the cornerstone of pharmacologic therapy for AWS" (p. 236). Other refractory medications may also be used, such as dexmedetomidine and clonidine for reduction in autonomic hyperactivity.

According to Webb, Carlton, and Geehan, (2000), there is not a single treatment that is unanimously accepted. One of the most commonly acknowledged treatment is with the use of benzodiazepines. Also discussed, is the debatable use of alcohol itself. The method however is via intravenous ethanol and by a tapered approach (Webb, Carlton, & Geehan).

Ambrosi et al. (2016) also discusses that benzodiazepines are the "first-line" selection when treating AWS. In addition, Ambrosi et al. explain that there is no substantiation that the medical use of ethanol is more effective or less harmful compared to benzodiazepines. Ambrosi et al. studied 88 respondent medical centers. These hospitals were located in the Midwest, Northwest, and Southeast and the majority were level 1 trauma centers. Of these 88 medical centers, 35.2% of the hospitals administer ethanol, however 74 percent of them did not have protocols in place for this administration. Seventy seven percent of the hospitals dispensed alcohol to less than 10 percent of their population who were at risk for AWS. Beer was the most common form of ethanol used, however, hard liquor was used as well, which included vodka, whiskey, and bourbon. The pharmacy was the most common unit to dispense the ethanol (74.2 percent), with other facilities utilizing food services, or a mixture of both pharmacy and food services.

Concerns with Utilizing Ethanol for AWS

According to Ambrosi et al. (2016), there are several concerns with dispensing ethanol to prevent or treat AWS. These concerns include, but are not limited to drug interactions, hepatic failure, and sending across a mixed message (Ambrosi et al.).

According to Darves (2016), a hospitalist at Virginia Tech Carillon, is heading up a randomized trail which evaluates the use of oral alcohol based on the CIWA scale. Patient's are scored as either mild, moderate, or severe for alcohol use disorder. Patients who score mild, receive 14 grams of alcohol every six hours, moderate receives every four hours, and severe receives every two hours. In the event a patient's CIWA score rapidly increases, they also receive lorazepam. The results have been promising early on, as CIWA scores for those in the standard protocol group have been lower, and for those patients within the alcohol group, none have been transferred to an intensive care unit (Darves).

Prevention of AWS

Prevention of AWS, includes alcohol consumption only moderately or abstinence (Kivi & Gotter, 2017). Another way to prevent AWS, is to seek help from a professional, who can assist with quitting safely (Kivi & Gotter). There are also support groups that are available such as Alcoholics Anonymous, SMART Recovery, American Addiction Centers, and Rehabs.com (Kivi & Gotter). Last, be forthcoming with healthcare providers about drinking habits and past withdrawal experiences (Mirijello et al.).

CONCLUSION

Many research articles identified benzodiazepines as the mainstay for the treatment of AWS. There is some research which shows that prescribed alcohol is effective for the prevention of alcohol withdrawal. In some states, if alcohol is used for medical treatment, it is exempt from the Liquor Control Act. The amount of research was limited in this topic and further research would be required, such as prescribed alcohol protocols, before a hospital could implement this practice.

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Appendix A

Table 1.1. Signs and Symptoms of Alcohol Withdrawal

Agitation	Irritability	Anxiety
Nausea	Seizures	Delusions
Delirium	Excitement	Fatigue
Restlessness	Confusion	Nightmares
Chest Pain	Fever	Stomach Pain
Eye/Muscle Movement problems	Excessive Sweating	Hallucinations
Sensitivity to light, sound or touch	Increased startled reflex	
Involuntary muscle contractions	Increased Heart Rate	

Note. The data on signs and symptoms of alcohol withdrawal adapted from "Alcohol Withdrawal

Delirium R. Kivi & A. Gotter, 2016, retrieved from by Centers for Disease Control and Prevention,

July 2016, retrieved <https://www.healthline.com/health/alcoholism/delirium-tremens#overview1>