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Gabapentin for Alcohol Use Disorder

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Abstract

The purpose of this literature review is to determine whether gabapentin is an effective treatment option for alcohol use disorder (AUD). Utilizing data sourced primarily from published clinical trials, gabapentin's effect on heavy drinking, abstinence, withdrawal symptoms and alcohol cravings will be explored. This review will also compare gabapentin's efficacy against currently approved AUD treatment options, along with what dosages are most efficacious while contributing the fewest adverse effects. The data presented in this literature review undeniably demonstrates a positive effect of gabapentin on alcohol use disorder; specifically the data shows that gabapentin at multiple dosages helps to decrease heavy drinking days (HDD), total drinking days, and alcohol cravings. Further research should be performed to evaluate whether gabapentin is more efficacious used as a monotherapy vs an additive therapy, what long term effects gabapentin has on AUD, and to define the most effective dosage and treatment duration.

Introduction

Alcohol use disorder continues to plague over 14% of US adults, contributing to 88,000-100,000 deaths annually (Kranzler, 2018)

Fifty percent of AUD risk is genetic, while the other half is attributed to environmental factors (Kranzler, 2018)

Gabapentin has been shown to decrease alcohol cravings and withdrawal symptoms, and it does not carry the heavy side effect profile of other drugs used to treat AUD

Statement of the Problem

Three medications have been approved for the treatment of alcohol use disorder, however less than 9% of patients who would qualify for medication management of AUD receive prescriptions for treatment (Kranzler, 2018).
All three of the approved medications (acamprosate, naltrexone and disulfiram) carry strong side effects, have significant interactions if combined with alcohol or do not reduce the likelihood of binge drinking, therefore studies continue to be performed to determine whether there are more effective medications that can reduce bine drinking, promote abstinence, and decrease intensity of withdrawal symptoms (Kranzler, 2018)

Research Question

In patients with alcohol use disorder (AUD), is gabapentin effective in reducing cravings and withdrawal symptoms as a primary treatment option?

Literature Review

Gabapentin and Measures of Alcohol Abuse

Mariani et al. (2019) studied gabapentin's effect on heavy drinking days (HDD), with results demonstrating a significant decrease in HDD when compared to placebo (p=0.002).

Mason et al. (2014) revealed that gabapentin reduces HDD (p=0.02), mood, sleep and craving disturbances, and increases abstinence rates (p=0.04).

Anton et al. (2020) demonstrated that gabapentin decreased HDD (p=0.02) when compared with placebo, and promoted total abstinence at a rate 13.8% higher than placebo.

Gabapentin vs Other Medications for Alcohol Use Disorder

Myrick et al. (2009) conducted a study comparing gabapentin vs lorazepam, where gabapentin achieved lower CIWA-Ar scores than the lorazepam group (p=0.009), and the gabapentin group reported less anxiety, craving for alcohol and daytime sedation when compared to the lorazepam group, although these findings were not statistically significant

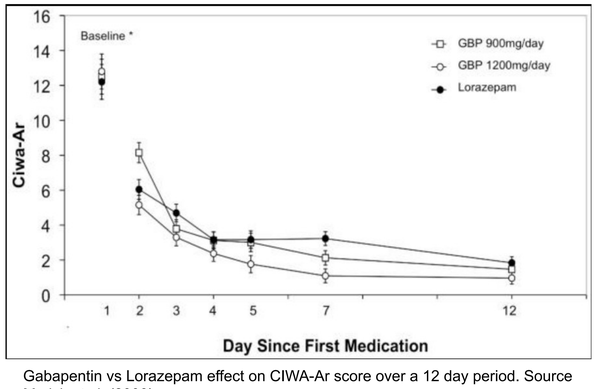
Stock et al. (2013) revealed that when comparing gabapentin vs chlordiazepoxide, there was no significant difference in CIWA score, although gabapentin did lead to less daytime sleepiness

Gabapentin Dosing and Interaction with Alcohol and Sleep

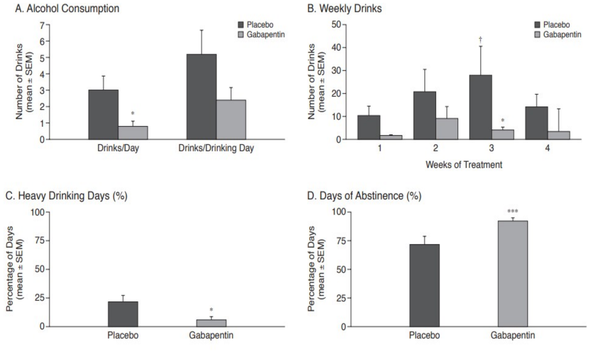
Falk et al. (2019) compared extended-release gabapentin at 1200 mg/day with placebo and discovered that this dosage and formulary did not lead to fewer drinking days when compared with placebo.

Mason et al. revealed that 1800mg daily of gabapentin when compared with 900mg and placebo, revealed the strongest rate of sustained abstinence at 17% vs 4.1% in the placebo group and 11.1% in the 900mg group

Bisaga (2006) studied the interaction of gabapentin with alcohol at various dosages, and discovered that gabapentin did not significantly alter the behaviorl, physiologic and psychomotor effects of alcohol



Gabapentin vs Lorazepam effect on CIWA-Ar score over a 12 day period. Source Myrick et al. (2009)



Gabapentin's effects on drinking behavior. Source Furieri et al. (2007)

Discussion

HDD: Solid evidence was accumulated to reveal that gabapentin has a definite effect on reducing heavy drinking days when compared with a placebo. The reason for this, however, has not been attributed to a single cause. There does appear to be a dose-dependent response, with higher doses demonstrating statistically significant superiority (p=0.02) (Mason et al., 2014)

Abstinence: Gabapentin does demonstrate favorable effects on promoting full abstinence from alcohol. One of the larger studies of the literature review, which included 152 participants, demonstrated the greatest percentage days abstinent (p=0.008) at a gabapentin dose of 600mg/day. One limitation of this study, however, was that all participants underwent a medically supervised withdrawal with diazepam prior to upward taper of gabapentin dose.

Withdrawal: The Myrick study (2009) revealed that gabapentin was effective at managing withdrawal symptoms and reducing seizure risk at dosages of 900 and 1200mg/day, however not at 600mg/day

Sleep: Brower (2010) hypothesized that gabapentin's ability to promote abstinence and prolong sobriety was due to its positive effects on sleep behavior, however this was not supported in his study as the subjective and objective measures of sleep were not statistically significant in the gabapentin vs placebo group

Considerations: Unfortunately due to the nature of substance use disorders, all of the studies included in this project demonstrated a high drop-out rate. A drop-out rate of generally greater than 50% is consistent with the vast majority of studies conducted on substance use, however, therefore this does not negate the results of this literature review. Another important consideration is that most of the studies in this review included some biochemical marker of consumed alcohol and gabapentin, which eliminates using only subjective data to assess the efficacy of gabapentin on alcohol use disorder.

Applicability to Clinical Practice

Gabapentin is a safe and effective pharmacologic intervention to treat those suffering from alcohol use disorder in an outpatient setting. Dosages as low as 600mg/day were shown to be effective in reducing heavy drinking days and promoting abstinence, with dosages of up to 3600mg/day showing adequate safety profiles.

Dosages of less than 900mg/day should not be considered in those demonstrating high CIWA-Ar scores carrying a risk for seizure activity

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