

## **Effectiveness of benzodiazepine symptom-triggered dosing regimen versus fixed-dosing regimen for treatment of alcohol withdrawal.**

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### **Objectives:**

To determine possible differences in outcomes between two benzodiazepine dosing regimens for the treatment of alcohol withdrawal syndrome.

### **Background:**

The Kansas City VA currently has two order sets available for patients receiving treatment for alcohol withdrawal. This includes a fixed-dosing approach using a scheduled benzodiazepine (BNZD) taper primarily utilized by the psychiatry teams and a symptom-triggered approach primarily utilized by the internal medicine teams. Chlordiazepoxide or lorazepam are used for the fixed-dosing and symptom-triggered methods of treatment. The aim of this project is to compare treatment options and to evaluate patient outcomes. Outcome measures include total dose of BNZDs received, duration of BNZD treatment, duration of admission, and any alcohol withdrawal related adverse events experienced by patients during the withdrawal period.

### **Methods:**

This is a retrospective, single-center, non-randomized quality improvement study to evaluate two alcohol withdrawal treatment regimens between the dates of January 1, 2017 and August 15, 2020. ICD F10.23 codes (alcohol dependence with withdrawal) were utilized to identify Veterans who were admitted to the KCVA for treatment of alcohol withdrawal. To be included in the study, patients must be 18 years or older with alcohol withdrawal syndrome being treated with BNZDs in the inpatient setting. Exclusion criteria included a history of withdrawal seizures, non-verbal patients, and patients on a Clinical Institute Withdrawal Assessment for Alcohol (CIWA) protocol not triggering a benzodiazepine dose. The primary endpoints include the total dose and duration of BNZD treatment. Secondary endpoints include the duration of hospital admission and adverse events. Data was analyzed to determine if there is a superior approach to treating alcohol withdrawal patients at the KCVA. Chart reviews were performed to identify demographics, BNZD dosing regimen utilized, total milligram dose of benzodiazepine received, benzodiazepine of choice, duration of admission, and any alcohol withdrawal related adverse events that might have occurred.

### **Results:**

A total of 50 patients were identified for the study, with 25 patients having received fixed-dosing benzodiazepines and 25 patients having received benzodiazepines based on symptomatic triggers. Baseline characteristics were similar across both groups, with the average age of 53 years, 98% male, and 80% Caucasian. In the fixed-dosing group, the total mean lorazepam dose was 21mg and the total mean chlordiazepoxide dose was 517mg. Those in the symptom-triggered group received a total mean lorazepam dose of 5mg and a total mean chlordiazepoxide dose of 87mg. This represents a 76 and 83 percent decrease in total lorazepam and chlordiazepoxide dose respectively when comparing the fixed-dosing vs symptom-triggered dosing groups. The symptom-triggered group were discharged an average of one day earlier than those in the fixed-dosing group, with the average duration of admission being

four days and five days respectively. No alcohol withdrawal related adverse events were noted in either group.

**Conclusions:**

Symptom-triggered benzodiazepine treatment for alcohol withdrawal resulted in a lower total mean benzodiazepine dose with a shorter duration of admission. Additionally, both treatment options appeared to be safe, with no alcohol withdrawal related adverse events being identified in either group.