Alcohol Withdrawal Treatment in the Medically Hospitalized Patient: Predictors for Medical or Psychiatric Complications

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Abstract

Purpose
To compare the outcomes associated with various strategies of benzodiazepine administration (symptom-triggered, fixed-dosing, loading methods) for alcohol detoxification without any exclusion criteria in order to elucidate which characteristics of patients are better predictors for complications.

Methods
A retrospective chart review of 47 veterans consecutively admitted to a tertiary veteran’s medical hospital for alcohol detoxification was abstracted. Demographics, blood alcohol level (BAL), CIWA score on admission, Charlson comorbidity index (CCI), drinks per drinking day, pre-psychiatric consult benzodiazepine administration, and length of stay were compared for veterans who developed complications versus those who did not.

Results
The main findings were that veterans who had complications during their medically managed detoxification had CIWA ≥ 15 (50% vs. 3.5%, p=0.005). Furthermore, patients who received benzodiazepines prior to specialist consultation had more complications than those who received benzodiazepines after consultation (80% vs 46%, p=0.08).

Conclusion
Patients with CIWA score ≥ 15 were more likely to have behavioral and/or medical complications.

Methods

- Retrospective chart review of 47 veterans admitted to tertiary care VA medical center in April 2013
- Medical records were abstracted for demographic and clinical variables
- Data analysis plan
  - Data were analyzed using SAS version 9.3 (Cary, NC).
  - The two groups (one with complications and the one without complications) were compared using the T-Test and Fisher’s exact, two-tailed tests of probability. Correlations between the dependent variable, the presence of complications, and potential predictor variables were calculated. Candidate predictor variables were admission BAL, usual drinks per day, pulse greater than 100, and history of delirium tremens. Only CIWA ≥ 15 had a significant correlation with complications (p=0.003). A logistic regression model was run using the presence of any complications as the dependent variable with the independent variable CIWA ≥ 15.

Results

Clinical Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>No complication</th>
<th>Complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age [std dev]</td>
<td>52.9 [10.3]</td>
<td>52.9 [11.5]</td>
</tr>
<tr>
<td>Charlson Comorbidity Index, Mean [std dev]</td>
<td>0.95 [2.4]</td>
<td>0.50 [0.71]</td>
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<tr>
<td>Total length of stay, days</td>
<td>5.7 [3.4]</td>
<td>8.8 [6.8]</td>
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<tr>
<td>Mean BAL [std dev]</td>
<td>185.2 [160.6]</td>
<td>180.6 [208.0]</td>
</tr>
<tr>
<td>Mean drinks per day [std dev]</td>
<td>16.2 [15.8]</td>
<td>15.2 [12.4]</td>
</tr>
</tbody>
</table>

* p-value >0.05 but < 0.10
*** p-value = 0.005

Conclusion

- 21% of patients (10 of 47) undergoing medically managed detoxification from alcohol developed behavioral and/or medical complications including:
  - Use of chemical and physical restraints, 10.6%
  - Use of sitter, 12.8%
  - Code green, 4.3%
  - New onset delirium tremens, 6.4%
- The single best predictor of behavioral and/or medical complications during a medically managed detoxification from alcohol is for patients who have CIWA score ≥ 15 on admission. The odds of a complication were increased by a factor of 28-fold (95% CI= 2.5, 317.6).
- Other notable findings:
  - Higher proportion of those with past delirium tremens had complications
  - Higher proportion of those with complications had benzodiazepines prior to specialist consultation
- Potential limitations
  - Small sample size with VA-based population
  - Unknown outcomes for patients without consultation
  - Multiple methods of detoxification

Recommendations

- Providers should strictly adhere to CIWA protocol starting at admission, as the CIWA score can help triage to appropriate detoxification setting (ICU, PCU)
- Prompt specialist consultation prior to administration of benzodiazepines can decrease risk of complications