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Benzodiazepine-minimizing protocol for alcohol withdrawal: a comparative analysis

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Benzodiazepine-minimizing protocol for alcohol withdrawal: a comparative analysis

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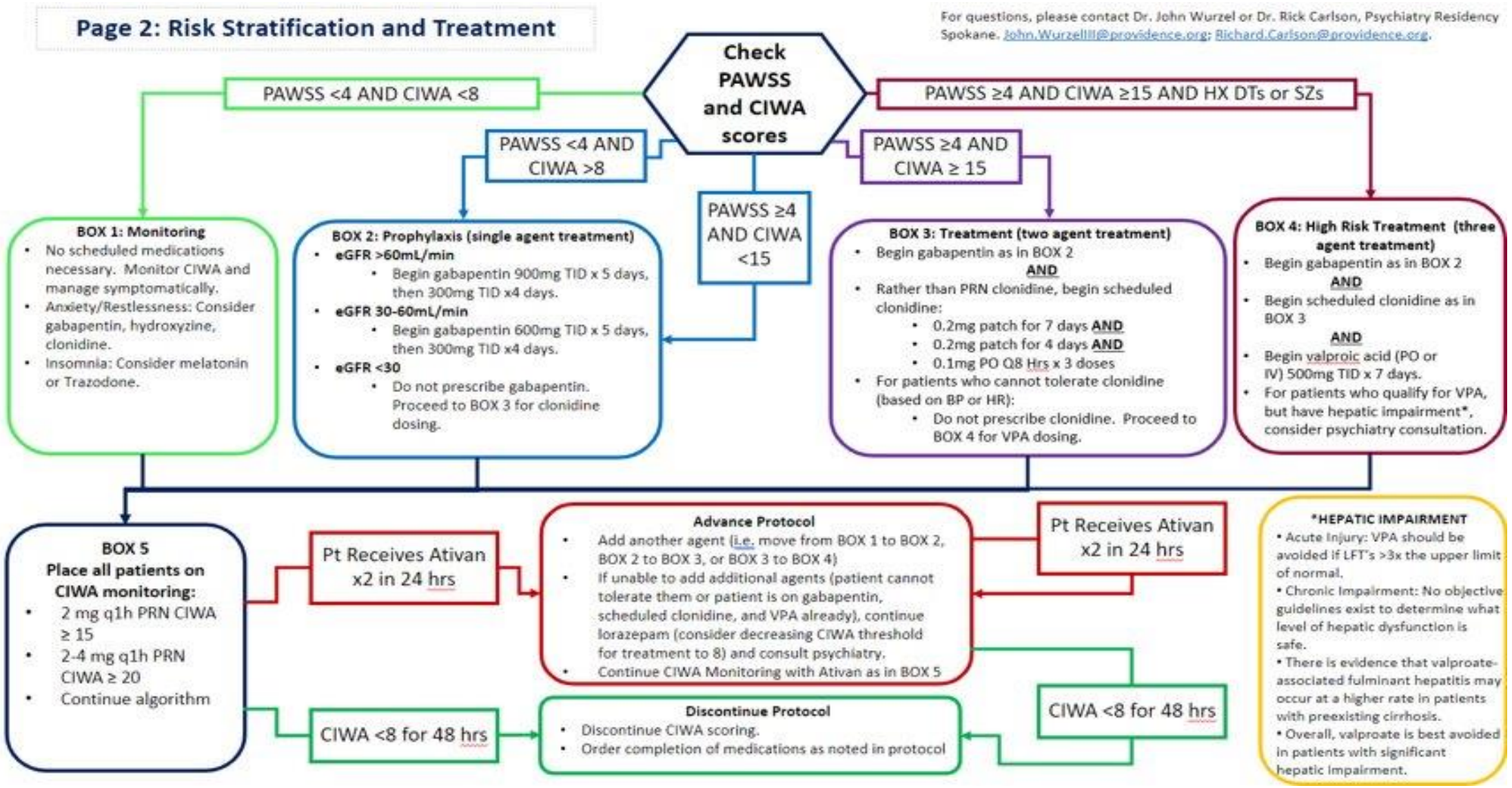
Background

- Currently, the standard of care to treat acute alcohol withdrawal is to use benzodiazepines (7).
- Treating with Benzodiazepines can pose several problems:
  - It can be difficult to distinguish between delirium resulting from alcohol withdrawal and delirium induced by benzodiazepines. In that situation it becomes difficult for clinicians to determine the appropriate next steps - whether to stop the benzodiazepines or escalate them.
  - Evidence suggests that using benzodiazepines for management of withdrawal can result in increased cravings and a shorter time to relapse on alcohol compared to benzodiazepine sparing protocols (1).

Background

- Medications used in these benzodiazepine sparing protocols, specifically valproic acid, gabapentin, and clonidine, all have comparable effectiveness in managing alcohol withdrawal when compared with benzodiazepines as monotherapies (1).
  - **Gabapentin:** leads to more rapid decline in CIWA scores and did not extend the length of hospitalization compared to benzodiazepine protocols (5).
  - **Clonidine:** resulted in comparable or superior reduction of overall alcohol withdrawal symptoms compared to benzodiazepines (1).
  - **Valproic Acid:** has been shown to reduce CIWA scores more rapidly than benzodiazepines and results in equal subject control of symptoms compared to benzodiazepines (1).

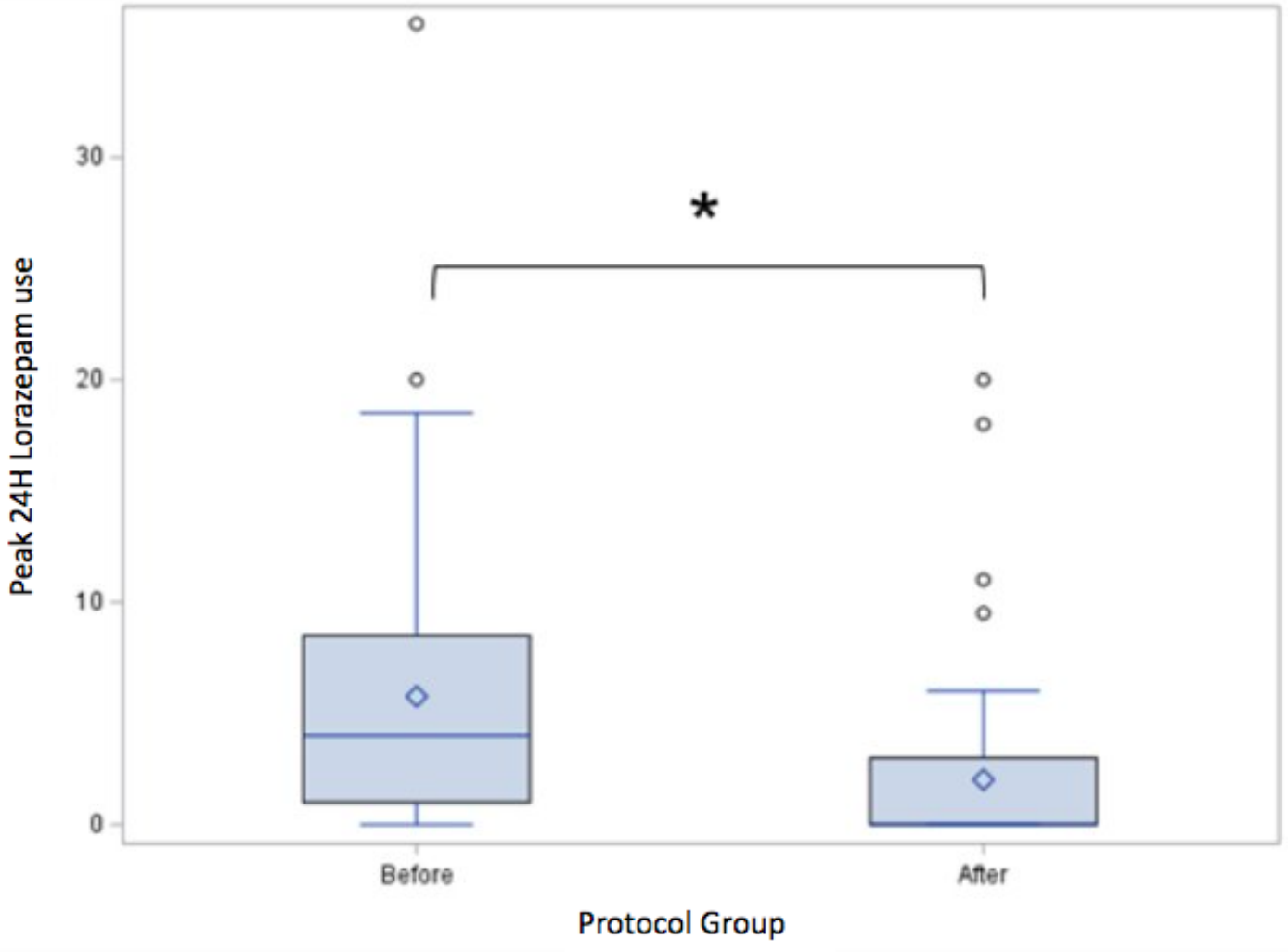
- Our team developed a benzodiazepine minimizing protocol which was closely modeled after a protocol developed by Dr. Jose Maldonado (1).



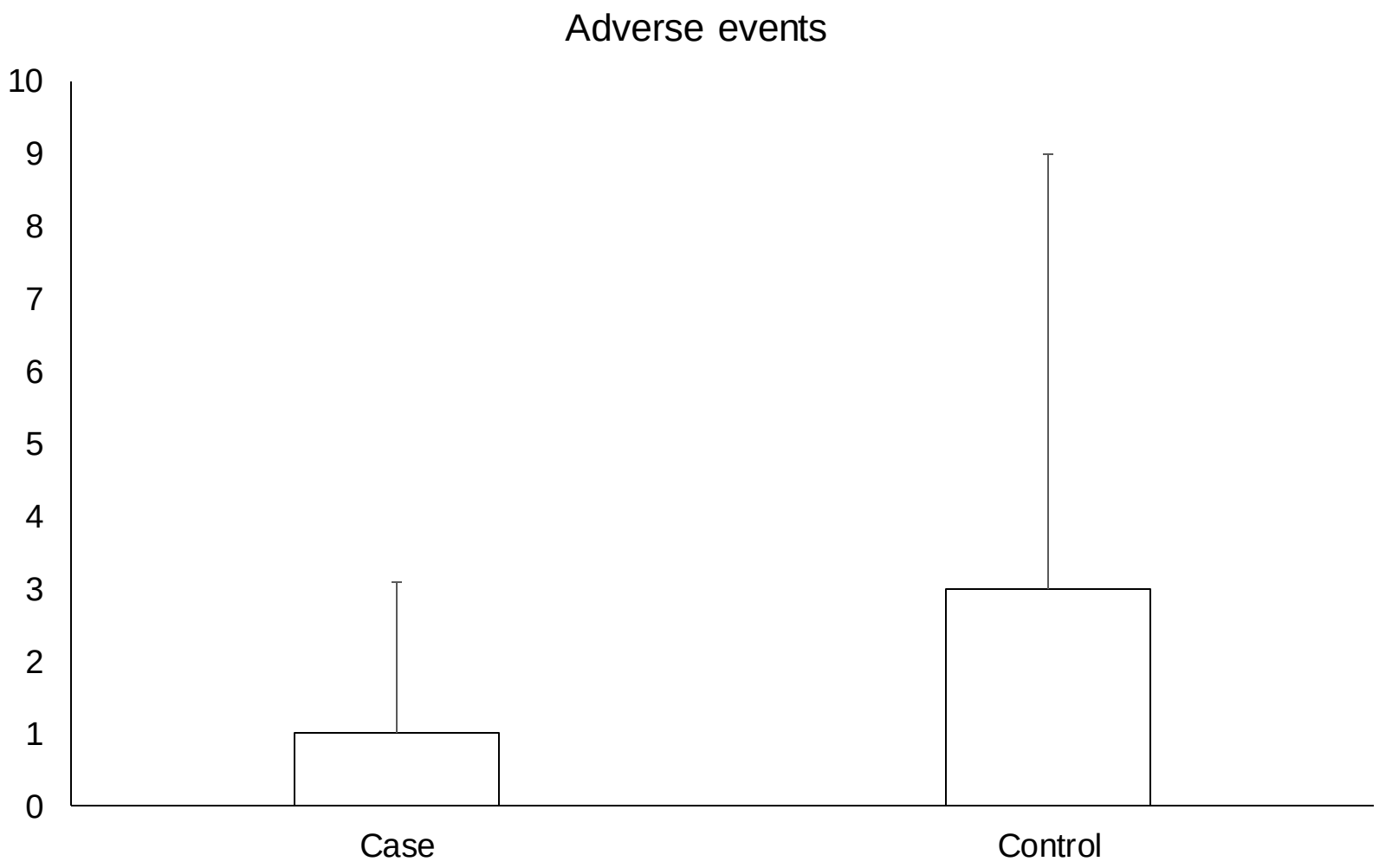
Methods

- Data was collected via chart review of patients admitted to Sacred Heart Medical Center medical floor or inpatient psychiatric unit who received treatment for alcohol withdrawal.
- **Control group:** obtained through retrospective chart review of patients aged 18-95 of any gender admitted to the hospital experiencing alcohol withdrawal between January 2018 and July 2021.
- **Protocol group**: Participants had been placed on benzodiazepine minimizing protocol for acute alcohol withdrawal
- There were 48 participants in the protocol group and 50 participants in the control group.

Results


Peak 24H Lorazepam use
30
20
10
0
*
Before
After
Protocol Group

Results



Conclusions

- Findings
  - We found no statistically significant difference between the protocol and control group in terms of occurrences of CIWA >8, total lorazepam use, or adverse events.
  - Although the benzodiazepine-minimizing protocol did not seem to minimize total lorazepam use compared to the control group, it did reduce the peak 24-hour use of lorazepam compared to the control group (0 vs. 2, p=0.0017). Overall lorazepam use may have been driven by pre-protocol doses of lorazepam; our data did not let us parse this.
  - Additionally, peak 24-hour lorazepam use was reduced significantly following implementation of the protocol within the protocol group (0 vs. 4, p <0.0001). The average reduction in lorazepam equivalents between the pre-protocol period and post-protocol period was 62%.
- Limitations
  - The sample of patients was limited in size (n=98).
  - Participants were not excluded on the basis of concomitant medications or comorbidities and thus we cannot rule out confounding factors that may mitigate the differences we observed between cases and controls.
  - The timing of protocol initiation was delayed after patients entered the hospital.
- Future Directions
  - More robust randomized controlled trials are needed to compare benzodiazepine-minimizing protocols to both Lorazepam-based as well as phenobarbital-based alcohol withdrawal protocols.

Results

	Protocol(N=48)	Control (N=50)	P-value
Total Lorazepam	4 (1, 14)	3 (0, 14)	0.5432
Peak post protocol Lorazepam	0 (0, 3)	2 (0, 6)	**0.0017**
Post protocol peak ciwa	9 (6, 16)	12 (4, 16)	0.7603
Total protocol peak ciwa	15 (11, 18)	12 (4, 16)	**0.0156**
Post protocol ciwa>8	1 (0, 4)	1 (0, 8)	0.5032
Total protocol ciwa>8	3 (1, 6)	1 (0, 8)	0.1207
Adverse events	1 (2.1%)	3 (6%)	0.6175

*All p-values were calculated using the Wilcoxon rank sum tests except for adverse event. The p-value comparing adverse events was by using Fisher's exact test.

	Pre (N=44)	Post (N=48)	P-value
24H Lorazepam	4 (1, 9)	0 (0, 2)	**<.0001**
% reduction in Lorazepam	-62%		**<.0001**
Peak CIWA	14 (10, 16)	9 (6, 16)	**0.0005**
CIWA>8	1 (1, 3)	1 (0, 4)	0.2588

*p-values were calculate using the Wilcoxon signed-rank tests.

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