ED Clinical Pathway for Management of Alcohol Withdrawal Syndrome Decreases Hospital Admissions

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Introduction/Problem

In western societies, 20% of men and 10% of women will develop an alcohol use disorder, and 50% of those will develop symptoms of alcohol withdrawal syndrome (AWS) with discontinuation of alcohol consumption. Alcohol intoxication and AWS are common presenting complaints to Emergency Departments (ED). Treatment of AWS typically involves CIWA-triggered benzodiazepine administration; however management is not standardized and clinicians have a variable threshold for admission. Many admissions are not necessary as AWS has a range of severity and patients are often discharged under 24 hours. Furthermore, terminology is often used imprecisely which hampers standardization of care.

Aim/Goal

Reduce unnecessary admissions and standardize care with evidence based guidelines of patients presenting to the ED with complaints attributed to AWS or with alcohol intoxication and develop AWS during their ED course.

The Team

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- Shelley Calder RN, MSN CEN Program Director Ambulatory & Emergency Nursing Education
- Rohn Friedman MD Department of Psychiatry
- Michael Ganetsky, MD, FACEP, FACMT Emergency Medicine
- John Marshall Clinical Pharmacy Coordinator - Critical Care
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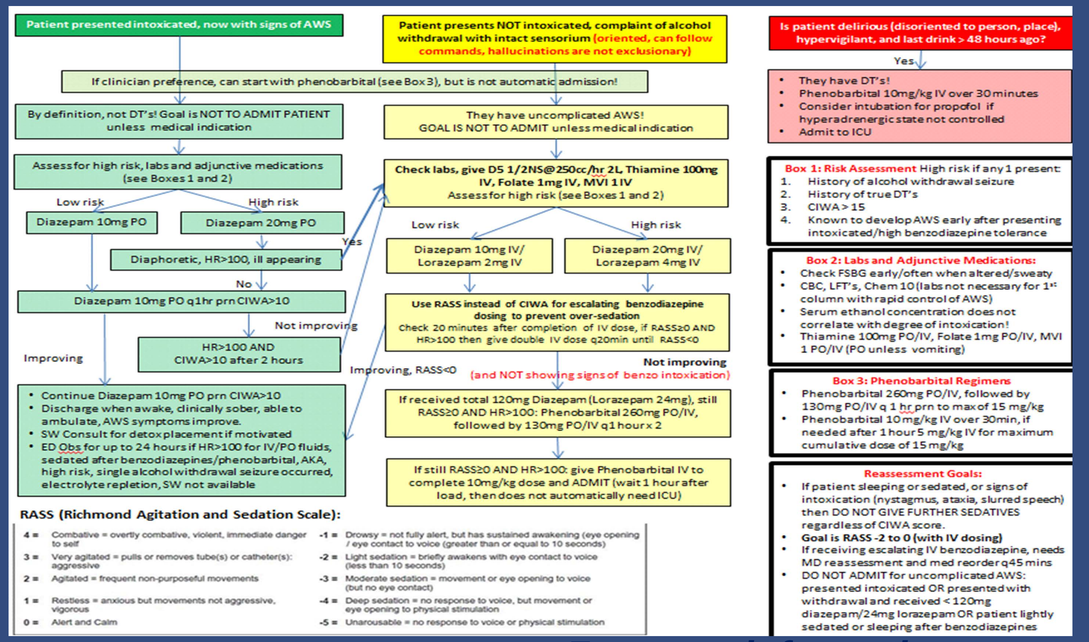
The Interventions

- Multidisciplinary group of ED physicians, nurses, psychiatrists, and pharmacists developed a pathway for the care of patients presenting to the ED with complaints attributed to AWS
- Pathway incorporated a diazepam dose escalation protocol
- Required stratification by severity and timing of withdrawal to avoid nonspecific terminology
- Used RASS instead of CIWA during dose escalation with IV medications
- Encouraged admission only after a threshold of 120mg diazepam-equivalents was reached or patient had true Delirium Tremens (DTs) or medical indication other than AWS for admission

AWS Pathway



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More Results/Progress to Date

Methods

- The primary outcome was rate of hospital and ICU admissions.
- Historical controls were identified over the year prior to implementation of the pathway based on ICD-9/10 codes as well as discharge diagnosis of withdrawal.
- After pathway implementation, treating clinicians were prompted by the ED electronic tracker ("Dashboard") for pathway enrollment if certain historical elements were met, or subjects could be manually enrolled.
- 95% confidence intervals, using Exact method for proportions, were calculated.

	Pre-Pathway (1 year)	Pathway (2 months)
N	84	104 (20 declined)
Average age (years)	47	47
Male (%)	81%	71%
Admitted to medical floor service (95% CI)	56% (44-67%)	29% (20-39%)
Admitted to an ICU (95% CI)	19% (11-29%)	11% (5-18%)
Average hospital length of stays (95% CI)	3.4 days (2.5-4.2)	7.7 days (3.3-12.1)

No adverse events were attributed to pathway or benzodiazepine dose escalation

Admitted Patients Enrolled in Pathway

- Mean maximum heart rate: 117 (95% CI 107, 126)
- Mean benzodiazepine dose (diazepam-equivalents): 62mg (95% CI 40, 83mg)
- Received 80mg diazepam dose: 5 (15%)
- Received phenobarbital rescue: 5 (15%). Mean total phenobarbital dose: 734mg

CIWA Scores

- Mean initial: 11.7 (95% CI 9.8, 13.6)
- Mean maximum: 13.9 (95% CI 12.3, 15.5)
- Mean final from ED: 9.3 (95% CI 7.2, 11.3)

Lessons Learned

- Implementation of an ED pathway standardizing management of AWS significantly decreased hospital admissions.
- Patients characterized as appropriate for admission had a longer length of stay suggesting the pathway successfully identified sicker patients.

Next Steps

- Continue to analyze ongoing enrollment
- Better risk assessment for who will be benzodiazepine resistant, need more frequent interventions
- Comparison of RASS vs CIWA for early intervention in patients with more severe AWS
- Assessment of total benzodiazepines administered and stratification based on risk factors

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