Internal Medicine Residency Noon Lecture
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Case

- 82 year old man with history of DJD, and HTN admitted for right total hip replacement.
- Routine post-op medications for pain, and DVT prophylaxis
- One day after surgery he begins to hallucinate
- What do we do?
Case

- Usually drinks 3-4 mixed drinks daily
Background

- Alcohol abuse affects 9% population
- 11-15 million Americans report “heavy alcohol intake”
- Costs of associated medical complications $100 billion/year
Background

- National Institute on Alcohol Abuse and Alcoholism (NIAAA):
  - Heavy use (at risk for withdrawal)
    - Women: > 4 drinks/day
    - Men: > 5 drinks/day
  - At risk for alcoholism
    - Women: > 1 drink/day
    - Men: > 2 drinks/day
Background

- Standard Drink
  - 12 oz. beer
  - 5 oz. wine
  - 1.5 oz. liquor
Prevalence

- 20-25% of hospitalized general medicine
- 25-47% of trauma patients
- More than half of those > 65 don’t drink at all
- 6-9% are “at risk” drinkers
- ~17% of those > 60 years misuse alcohol or prescription drugs
Prevalence

- 1/3 men, 20% women in retirement communities report > 3 drinks/day
- 3-25% are “heavy use”
- 15% men/12% women are “alcohol abuse” - drinking in excess of recommended limits/guidelines, rapid progression to alcohol-related illness/complications
Incidence of alcohol withdrawal syndrome
- ~ 2 million/year
- ~ 500,000/year require pharmacologic tx
Background

- Alcohol use disorders in elderly
  - 2/3 early onset (< 60 years)
    - Greater financial, legal and social problems
    - Heaver drinkers
  - 1/3 late onset (> 60 years)
    - Aging social drinker
      - More intoxicated with same dose
      - Increase in drinking after “loss”
    - Cognitive disorder
Background

Increased blood alcohol concentration in elderly

- Decreased lean body mass
- Decreased total body water
- Decreased gastric alcohol dehydrogenase
Medical Complications of Alcohol Use Disorder

- **Cirrhosis**
  - 1 year death rate: 60% for those > age 60 compared to 7% in younger patients

- **Cardiovascular Effects**
  - Women: 4-fold cardiac risk CAD
  - Increased risk of AF (holiday heart)
  - Increased stroke risk

- **Cancer**
  - Increased incidence of liver, esophageal, head/neck and colon cancers
Medical Complications of Alcohol Use Disorder

- **Heme**
  - Thrombocytopenia, bleeding, macrocytosis

- **Neuro Psych**
  - Increased dementia, Wernicke’s encephalopathy, Korsakoff’s psychosis
  - Mood disorders, pseudodementia
  - Suicide
Maladaptive pattern and 1 of the following in 12 months:

- Failure to fulfill obligations at work, school, or home
- Recurrent use when physically hazardous
- Recurrent related legal problems
- Continued use despite recurrent social or legal problems
DSM-IV Criteria for Substance Dependence

Maladaptive pattern and 3 or more of the following in 12 months:

- Tolerance (often reduced in elderly)
- Withdrawal (often delayed, with mental status changes in elderly)
- Greater amount of use or longer duration than expected
- Unsuccessful efforts to reduce use
- Important activities reduced or given up
- Continued use despite its aggravation or physical or psychological problems
Biomarkers

- Elevated Gamma-glutamyl transferase (GGT): Sensitivity of 70-80% if 6-8 drinks/day
- Mean corpuscular volume (MCV) > 90 consistent with alcohol dependence
- Carbohydrate deficient transferrin (CDT): > 14 units/L consistent with social drinker; > 20-30 units/liter consistent with alcohol dependence
Questionnaires

- MAST-G is specific to geriatric alcohol use disorders
- AUDIT most comprehensive
- CAGE and TWEAK are quick, limited sensitivity and sensitivity
CAGE

- Have you ever felt the need to Cut down on drinking?
- Have you ever felt Annoyed by criticism of your drinking?
- Have you ever felt Guilty about your drinking?
- Have you ever taken a morning Eye opener?
CAGE

- Overall sensitivity of 85%, specificity of 89%; with three positives it is 100% sensitive
- Does not distinguish between past and present alcohol use, not helpful in acute withdrawal
Questionnaires

- Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-r)
  - Reliable, validated tool
  - Brief, easy to use
  - Score correlates with severity of withdrawal
  - Not diagnostic, used in conjunction with clinical context
CIWA-r

- Mild, score 8-15
- Moderate, score 16-25
- Severe, score > 25
- Score < 10 can observe patient
- Score > 10 should admit
- Score > 15 will need treatment
### Appendix. Clinical Institute Withdrawal Assessment for Alcohol.*

<table>
<thead>
<tr>
<th>Category</th>
<th>Range of Scores</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agitation</td>
<td>0–7</td>
<td>0 = normal activity, 7 = constantly thrashes about</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0–7</td>
<td>0 = no anxiety, at ease, 7 = acute panic states</td>
</tr>
<tr>
<td>Auditory disturbances</td>
<td>0–7</td>
<td>0 = not present, 7 = continuous hallucinations</td>
</tr>
<tr>
<td>Clouding of sensorium</td>
<td>0–4</td>
<td>0 = oriented, can do serial additions, 4 = disoriented as to place, person, or both</td>
</tr>
<tr>
<td>Headache</td>
<td>0–7</td>
<td>0 = not present, 7 = extremely severe</td>
</tr>
<tr>
<td>Nausea or vomiting</td>
<td>0–7</td>
<td>0 = no nausea, no vomiting, 7 = constant nausea, frequent dry heaves and vomiting</td>
</tr>
<tr>
<td>Paroxysmal sweats</td>
<td>0–7</td>
<td>0 = no sweat visible, 7 = drenching sweats</td>
</tr>
<tr>
<td>Tactile disturbances</td>
<td>0–7</td>
<td>0 = none, 7 = continuous hallucinations</td>
</tr>
<tr>
<td>Tremor</td>
<td>0–7</td>
<td>0 = no tremor, 7 = severe, even with arms not extended</td>
</tr>
<tr>
<td>Visual disturbances</td>
<td>0–7</td>
<td>0 = not present, 7 = continuous hallucinations</td>
</tr>
</tbody>
</table>

* The Clinical Institute Withdrawal Assessment for Alcohol measures 10 categories of symptoms, with a range of scores in each. The maximal score is 67. Minimal-to-mild withdrawal symptoms result in a total score below 8; moderate withdrawal symptoms (marked autonomic arousal), in a total score of 8 to 15; and severe withdrawal symptoms, in a total score of more than 15. High scores are predictive of seizures and delirium.
Alcohol Withdrawal Syndrome

- 3 distinct phases
  - Autonomic instability
  - Alcohol withdrawal seizures
  - Delirium Tremens

- Continuous or sporadic presentation

- Inpatient or outpatient
Autonomic Instability

- Starts soon, last 48-72 hours
- Clinically:
  - Tremulousness, anorexia, tachycardia
  - Irritability, nausea, hypertension, hallucinations
- Remember:
  - Quiet, well lit room
  - Thiamine, MVI with folate
  - Diet, social support (family/friends)
Alcohol Withdrawal
Seizures

- 12-72 hours after stop/ cut back
- Generalized tonic-clonic seizures, last minutes
- Exclude other causes of seizures
- Treat underlying cause
- Keep patient safe
Delirium Tremens

- 72-96 hours after stop/ cut back
- Usually resolves 3-5 days after starting
- Complicates 5-10% of withdrawals
- 15% mortality
- Clinically:
  - Tremulousness, agitation, disorientation,
  - Hallucinations, confusions, fever
- Remember: Fluids and electrolytes
Treat Withdrawal

- Inpatient vs outpatient

- Benzodiazepines remain cornerstone
  - Short acting: lorazepam
    - Peaks and valleys
    - Ideal for elderly/impaired drug clearance
  - Medium/long acting: diazepam/chlordiazepoxide
    - Long slow tapers
    - Ideal for outpatients
  - Severe hepatic dysfunction: oxazepam

- No efficacy:
  - MgSO4, clonidine, atenolol, neuroleptics, anti-psychotics, anti-emetics
Treat Withdrawal

- **Scheduled dosing**
  - Chlordiazepoxide 100mg q 6 hours
    - Convenient, adapt to outpatient
    - Higher medication use, less nurse interaction

- **Load and Taper**
  - Diazepam 10mg every 2 hours until asleep
    - Patient comfort, easy for physician
    - Unnecessary medication, over sedation

- **Individualized treatment (sx triggered)**
  - Lorazepam 2 mg q 1- 2 hrs for “agitation”
    - Less medication used, shorter hospital stays
    - Higher nursing involvement, ? Seizure
References


References


