

### MOA of Alcohol

- Multiple; Not well understood
  - GABA receptor agonist
  - NMDA (*glutamate*) receptor antagonist
  - Believed to have either a direct or indirect effect on the mu-opioid receptor (*associated with alcohol cravings and euphoria; reward pathway*)
- 
- *GABA is an inhibitor NT*
  - *Glutamate is an excitatory NT*

### Alcohol | Signs and Symptoms of Intoxication

Slurred speech

Loss of coordination

Unsteady gait (staggering)

Nystagmus (rapid, involuntary eye movement)

Impaired memory or attention

Stupor or coma

*Can be mistaken for sedative intoxication ⇒ If the patient is conscious, ask them what they took*

### Signs & Symptoms of Alcohol Withdrawal

Sweating or HR > 100 BPM

↑ hand tremor

Insomnia

Nausea ± Vomiting

Transient visual, tactile, or auditory hallucinations

Psychomotor agitation

Anxiety

Tonic-Clonic Seizures

*Tonic-Clonic Seizure: a seizure that involves a loss of consciousness and violent muscle contractions*

### PK of Alcohol

Absorption Small intestine

Delayed gastric emptying and/or presence of food delays absorption

Metabolism Zero-Order

Metabolized by alcohol dehydrogenase

Elimination Mostly into CO2 and water

### Treatment of Alcohol Intoxication

ED visit, hospitalization, ICU admissions

Supportive care based on symptoms and BAC

ABC's [Airway, Breathing, Circulation]

Manage nausea and vomiting

Prevent aspiration

Replace fluids (ie banana bags)

*Banana bags: Thiamine 100 mg, Folic Acid 1 mg, Multivitamin, ± magnesium*

### Clinical Presentation of Alcohol Withdrawal

6 to 12 hours Minor Withdrawal

12 to 24 hours Alcohol Hallucinosis

24 to 48 hours Withdrawal Seizures

72 to 96 hours Delirium Tremens (DT)

- *Onset is measured based on the time of the patient's last drink*
- *Could be sooner in more severe cases*



### Alcohol Withdrawal Presentations Defined

|                        |                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------|
| Minor Withdrawal       | Peaks at 24 to 36 hours                                                                                 |
|                        | May last up to 5 days                                                                                   |
|                        | Presence of 2 to 3 symptoms of withdrawal                                                               |
|                        | Tremors, anxiety, headache, diaphoresis, palpitations, nausea                                           |
| Severe Withdrawal      | Presence of $\geq 6$ symptoms                                                                           |
|                        | Alcoholic hallucinosis (visual is most common; auditory or tactile); generally resolves within 48 hours |
|                        | Seizures (generalized, tonic-clonic; can happen within hours of last drink)                             |
| Delirium Tremens (DTs) | Delirium, Disorientation, agitation, mydriasis, tachycardia, HTN, Temp > 104F, diaphoresis              |
|                        | Onset: 2 to 5 days after last drink                                                                     |
|                        | Prevalence: 3 to 5% of pt's with untreated alcohol withdrawal                                           |
|                        | Mortality rate: 5 to 15%                                                                                |

### Risk Factors of Withdrawal

- Environmental: increased frequency of quantity of consumption, prior withdrawals, concomitant sedative, hypnotic, or anxiolytic drugs
- Genetic: family history of withdrawal



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