ED Outline- Alcohol Overdose and Withdrawal

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- **What is alcohol and how does it affect the brain/body?**
    - Alcohol is classified as a depressant, meaning it slows down the messages between the brain and body (depresses the CNS).
    - Alcohol interacts with GABA receptors in the brain, enhancing its activity. With long term use, there is a decrease in GABA activity and function. Abrupt cessation of alcohol use, causes a decrease in the inhibitor action of GABA, causing overactivity of the central nervous system (overstimulated).
        - GABA (gamma aminobutyric acid) is an inhibitory neurotransmitter that produces a calming effect by blocking specific signals in your central nervous system.
    - Alcohol affects concentration, coordination, and slows down a person's ability to respond to situations/stimuli.
    - Alcohol can cause reduced inhibitions, impaired judgement, enhanced mood, reduction in anxiety/stress, and slowed breathing.
- **What is alcohol overdose?**
    - Occurs when there is an excessive amount of alcohol in the bloodstream, causing areas of the brain controlling basic life support functions to shut down.
        - Alcohol can hinder signals in the brain that control autonomic responses- heart rate, respiratory rate, gag reflex, temperature regulation, etc.
    - Alcohol intoxication: 0.08%
        - 0.31-0.45% BAC is life-threatening.
- **Who is at risk for alcohol overdose?**
    - Gender: males are more common to overdose than women.
    - Age: young adults and the middle aged.
    - Binge drinking: drinking large amounts of alcohol in a short period of time.
    - Use of multiple drugs while consuming alcohol (polysubstance use).
    - History of alcohol addiction.
- **Signs and symptoms of alcohol drug overdose?**
    - Mental confusion that can range from altered level of consciousness to stupor/coma like state.
    - Inability to wake up (unarousable)
    - Vomiting
    - Seizures
    - Bradypnea or irregular breathing
    - Bradycardia
    - Cool/clammy skin
    - Absence of gag reflex
    - Hypothermia

- **Treatment for alcohol overdose?**
    - Initial assessment:
        - Airway- do they have a patent airway, and can they protect it without intervention?
        - Breathing- are they breathing on their own? Rate and rhythm of respirations.
        - Circulation- blood pressure, heart rate, capillary refill, skin color.
    - Apply 100% nonrebreather if pulse ox is less than 92% on room air.
        - If airway cannot be protected, then the patient will need to be intubated and ventilated.
    - Place in lateral position to prevent aspiration if vomiting.
        - Administer antiemetics for severe nausea/vomiting.
    - Establish IV access.
        - Administer IV fluids to correct dehydration and hypoglycemia.
            - D5W or NS (0.45% or 0.9%)
    - Sedation: may need to administer sedating medication if the patient is agitated or violent to prevent risk of injury to self.
        - Ex: Haloperidol.
    - Allow for rest, maintain calm, low stimuli environment.
- **What is alcohol withdrawal?**
    - Alcohol withdrawal occurs when an individual stops or reduces their intake of alcohol after an extended period of time (long-term/chronic use).
        - Symptoms can appear within hours of alcohol cessation.
    - Mild/moderate symptoms include nausea, vomiting, diaphoresis, insomnia, hypertension, anxiety, headache, palpitations. Symptoms can progress to hallucinations, tremors, and seizures.
        - Alcohol withdrawal can be fatal if not treated.
- **What is the CIWA protocol?**
    - Clinical Institute Withdrawal Assessment for Alcohol (CIWA) provides an objective way to measure the severity of alcohol withdrawal. The scale can be used to guide treatment and assess progress throughout the time of care.
    - The CIWA scale is consists of 10 questions that all correlate with a numeric score.
        - The 10 questions include: agitation, anxiety, auditory disturbances, clouding of sensorium, headache, nausea/vomiting, paroxysmal sweats, tactile disturbances, tremor, and visual disturbances.
            - Mild withdrawal: 8 or less
            - Moderate withdrawal: 9-15
            - Severe withdrawal: 15 or greater
                - At risk greatest risk for seizures and delirium tremens.

- **Treatment for alcohol withdrawal?**
    - Benzodiazepines are the preferred drug class to treat patients experiencing alcohol withdrawal.
        - Benzodiazepines increase the effectiveness of GABA, producing a calming effect. Benzodiazepines will help to decrease anxiety, agitation, lower the heart rate and blood pressure.
            - Ex: IV Lorazepam or Diazepam
        - Utilize the CIWA scale to determine frequency and dosage of benzodiazepines.
    - Administer IV fluids to correct dehydration and electrolyte imbalances.
        - May need IV fluids with added supplements like vitamins or electrolytes.
            - Ex: may administer thiamine to prevent Wernicke's encephalopathy.
    - Provide emotional support.
    - Calm, controlled environment: dim lights, low stimuli.
- **Complications of alcohol withdrawal:**
    - Seizures: caused by overstimulated CNS, imbalance in electrolytes, and/or dehydration.
        - Can be treated with IV benzodiazepines or barbiturates (if not responding to benzodiazepines).
            - Seizure precautions: padded size rails, bed in lowest position, suctioning equipment at the bed side.
                - Do not restrain the patient or attempt to stick anything in the mouth. Clear the area to prevent further harm.
            - Assess vital signs once seizure ends and stabilize as needed.
                - Apply oxygen, establish airway if needed.
    - Delirium tremens: severe, life threatening form of alcohol withdrawal
        - Symptoms include visual hallucinations, extreme confusion, tachycardia, hypertension, hyperthermia, seizures and agitation.
            - Symptoms can of DT can begin as soon as 48 hours after alcohol cessation.
        - Delirium tremens can be fatal if not treated quickly due to cardiovascular collapse.
        - Treatment: IV benzodiazepines
            - If delirium tremens are not responding benzodiazepines, barbiturates, like phenobarbital can be administered.
    - Wernicke-Korsakoff Syndrome: is a neurological disorder the develops due to a severe deficiency in thiamine (B12). Thiamine is an essential vitamin that plays a role in converting food into energy.
        - Wernicke's encephalopathy: severe, acute brain disorder
            - Symptoms: confusion, ataxia, visual changes.

        - If not treated promptly, Wernicke's encephalopathy can progress to Korsakoff syndrome, causing permanent memory loss and gradual brain dysfunction.
            - Can be life threatening.
    - Korsakoff syndrome: chronic memory disorder
    - Treatment: administration of IV thiamine (B12), IV fluids for hydration, abstinence from alcohol, and nutritional supplements.

- **Patient education:**
    - Importance of abstaining from alcohol.
        - Support programs and resources to maintain sobriety.
            - Patient can be discharged to an inpatient facility or can seek further treatment as an outpatient.
    - Teach the signs and symptoms of alcohol overdose and withdrawal.
    - Importance of receiving prompt treatment for overdose or withdrawal symptoms to avoid complications.
    - Potential complications of alcohol withdrawal.

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