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| **Gamma-hydroxybutyrate**  **(GHB)/Sodium Oxybate** | |
| * **Alternative names:** liquid ecstasy, liquid X, liquid F, goop, GBH= Grievous Bodily Harm, Easy lay, Ghost Breath, G, Somatomax, Gamma-G, Growth Hormone Booster, Georgia home boy, nature’s Quaalude, G-riffick, Soapy, Salty Water   https://wiki.tripsit.me/images/a/a7/GHB.jpg | |
| **Characteristics** | * Produced naturally in the body and is a metabolite of gamma aminobutyric acid (GABA)1 * Stimulates slow-wave sleep (stages 3 and 4) and decreases stage 1 sleep; with continued use, decreases REM sleep. 1 * Shown to increase dopamine levels in the basal ganglia * At 10mg/kg produces anxiolytic effect, muscle relaxation, and amnesia * At 20-30mg/kg increases REM and slow-wave sleep * Doses > 60mg/kg can result in anesthesia, respiratory depression and coma * Onset of action is within 30min * Elimination half-life is approximately 20-30min; no longer detected in blood after 2-8h and in urine after 8-12h 1 * GHB is absorbed rapidly and reaches peak plasma concentrations in 20–60 minutes. 3 |
| **Presentation during intoxication**  (Symptoms usually resolve within 7 hours, but dizziness can persist up to 2 weeks) | **Common signs and symptoms during intoxication can include 3**   |  |  |  | | --- | --- | --- | | Disinhibition | Confusion | Amnesia | | Euphoria | Hallucinations | Agitation | | Placidity | Feeling of well-being | Poor concentration | | Relaxation of voluntary muscles |  |  |   **Adverse reactions may include3**   |  |  |  | | --- | --- | --- | | Drowsiness | Headache | Ataxia | | Dizziness | Hypotension | Nystagmus | | Nausea | Bradycardia | Hypotonia | | Vomiting | Hypothermia | Tremors | | Muscle spasms | Seizures | Decreased respiration |   **Extreme intoxication signs and symptoms may include3**   * Bradycardia, seizures, apnea, sudden (reversible) comma with abrupt awakening and agitation1   \*Overdoses can occur due to unknown purity and concentration of ingested product |
| **Monitoring and support during intoxication**  **Monitoring and support during intoxication**  (*Continued)* | **Goal11**   * Prevent severe respiratory depression   **Monitor1,2,3,4,11**   * Assess level of disorientation and if possible time of last ingestion and amount consumed * Monitor for falls risk * Monitor vitals every 15 minutes initially and less frequently as acute symptoms subside * Ensuring adequate respiratory function * Maintain comprehensive physiological and cardiac monitoring   **Supportive Interventions**   * Ensure a quiet private space * Frequently orient client to reality and surroundings * Promote fluid and food intake as tolerated * Atropine may be used for persistent symptomatic bradycardia * If breathing is laboured, refer to an intensive care unit. * No known antidote for toxicity |
| **Withdrawal presentation**1  symptoms occur 1-6 hours after abrupt cessation and can last 5-15 days after chronic use | **Symptoms may include1**   |  |  |  | | --- | --- | --- | | Nausea | Insomnia | Confusion | | Vomiting | Anxiety | Tremor |   **After chronic use1**   * Mild tachycardia and hypertension * Can progress to delirium with auditory and visual hallucinations |
| **Monitoring and support during withdrawal** | **Monitor1,11**   * Mental Status (include risk of self-harm and suicide, agitation, anxiety) * Physical status (vital signs, GI distress, respiratory and cardiological function) * Risk for falls * Hydration/Nutrition   **Supportive Interventions1,11**   * Provide reassurance and calming techniques. * Encourage fluids and nutrition as tolerated * Diazepam has been used to treat GHB withdrawal |
| **Potential Complications** | * Coma reported in doses > 60mg/kg 1 * **GHB** **overdose** is a real danger, usually occurring within 15–20 minutes of ingestion. Most fatalities associated with GHB occur when it is taken with other substances, most notably alcohol.3, 4 * Overdose may present as3, 4:  |  |  |  | | --- | --- | --- | | Nausea and vomiting | Respiratory depression | Aggressive outbursts | | Seizures | Coma | Slowed heart rate | |
| **Notable**  **Drug interactions**  **Notable**  **Drug interactions**  *(Continued)* | **HIV medications (Ritonavir and Saquinavir)5**   * Interferes with the metabolism of GHB via CYP3A4 enzymes, amplifying GHB-depressant effects which may lead to loss of consciousness   **With Benzodiazepines5**   * GHB may alter the response of midazolam at the GABA receptors, leading to agitation and confusion * Enhance CNS depressant effects of GHB   **With Sedating antidepressants, Antipsychotics, General anesthetics, Hypnotics, Opioids, Muscle Relaxants6**   * May enhance the CNS depressant effect of GHB leading to impaired consciousness and respiratory depression   **With Valproate and Ethosuximide7,8**   * Inhibition of GHB-dehydrogenase * Increased serum concentration of GHB --> Increased sleepiness, dizziness, nausea and cognitive impairment   **With Alcohol9**   * Enhanced respiratory depression, greater decreases in O2 sat, and hypotension * Adverse effects are more pronounced at higher GHB doses   **With Topiramate10**   * Topiramate increases GABA activity at its neuroceptors * May increase serum concentration of GHB --> Myoclonic jerks, miosis, rapid onset of coma   **With Cannabis**   * Increased pharmacological effects1   **With Stimulants**   * Increased pharmacological effects 1 |
| **Psychiatric effects** | * In small doses, it leads to feelings of well-being, lowered inhibitions, sedation, poor concentration, confusion, amnesia, euphoria and hallucinations. It may lead to agitation and aggression1 |

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