

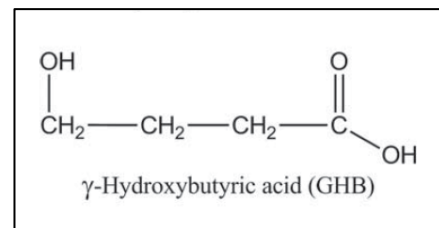


## Clinical Pharmacology & Toxicology Pearl of the Week

### ~ Gamma hydroxybutyrate (GHB) ~

#### What is GHB?

- ✓ An endogenous neurotransmitter as well as a metabolite and precursor of the neurotransmitter GABA
- ✓ A drug of abuse that acts as a central nervous system depressant
- ✓ It is a GABA-B agonist similar to baclofen. This receptor agonism is thought to be responsible for the CNS depressant symptoms and seizures
- ✓ It crosses the blood-brain barrier easily
- ✓ It is well absorbed orally with peak blood concentrations 30-60min post-ingestion
- ✓ It has various street names: "Liquid ecstasy", "Juice", "G", "Liquid G" or "Liquid X"
- ✓ It has been implicated in drug facilitated sexual assaults due to its rapid effects as a central nervous system depressant and difficulty detecting on urine drug screens



#### Clinical presentation

- ✓ Symptoms of GHB toxicity include: short term anterograde amnesia, drowsiness, coma, bradycardia, hypotension and respiratory depression
- ✓ Symptoms of CNS depression will usually occur within 15-45 minutes after ingestion. CNS depression will usually persist for 1-3 hours with complete recovery typically within 4-8h
- ✓ Seizures can occur in both GHB intoxication and withdrawal
- ✓ Respiratory failure due to sedation can paradoxically result in extreme combativeness at the time of intubation
- ✓ GHB withdrawal symptoms can include agitation, visual hallucinations and seizure

#### Investigations

- ✓ GHB can be detected in the urine for up to 12h after exposure and 4-5h after exposure in the serum
- ✓ Due to rapid metabolism and elimination of GHB, there is poor correlation between serum and urine concentrations and clinical presentation
- ✓ Comprehensive urine drug screens **do not** routinely detect GHB and urine drugs-of-abuse screens often **do not** detect it either

#### Management

- ✓ Airway protection may be required in those with profound coma
- ✓ Seizures from GHB intoxication or withdrawal should be treated with benzodiazepines
- ✓ Bradycardia generally does not require intervention however atropine may be useful if hemodynamically unstable bradycardia is present



The Calgary Clinical Pharmacology physician consultation service is available Mon-Fri, 9am-5pm. The on-call physician is listed in ROCA. Click [HERE](#) for clinical issues the CP service can assist with.



The Poison and Drug Information Service ([PADIS](#)) is available 24/7 for questions related to poisonings. Please call 1-800-332-1414, and select option 1.