

Barbiturates Drug Information

Classification

Barbiturates are a class of drugs capable of producing CNS depression, and depending upon the drug and dosage, may produce varying states of sedation or hypnosis and are thus classified as sedative/hypnotics. They are further categorized according to the duration of their effects, ranging from ultra-short acting, short acting, intermediate acting, and long acting. Duration of effects lasts anywhere from 15 minutes for the ultra-short acting barbiturates to a day or more for the long acting drugs. Short and intermediate acting barbiturates include amobarbital, butalbital, pentobarbital, and secobarbital, while the long acting barbiturates include phenobarbital. Other common therapeutic indications for use are as anticonvulsants and for migraine headaches.

Metabolism

Barbiturates are distributed throughout the body with highest concentrations occurring in the brain, liver and kidneys. In general, duration of action is dependent upon lipid solubility and extent of protein binding with the short acting barbiturates showing the most lipid solubility and percentage of protein binding. The short and intermediate acting barbiturates are nearly entirely metabolized by the liver and excreted in the urine, while 25-50% of a dose of a long acting barbiturate is excreted as unchanged drug. The half-life is variable with short acting barbiturates being detectable in urine for 24 hours and the long acting drugs detectable for 2-3 weeks following ingestion.

Abuse

The most common detected barbiturates are butalbital and phenobarbital. Butalbital is routinely prescribed for migraine and muscle relaxation while phenobarbital is primarily prescribed for seizure disorders. Trade and street names of some common barbiturates are as indicated below.

Chemical Name	Trade Name	Street Name
Amobarbital	Amytal	Yellow Jackets
Butalbital	Fiorinal	Blue Devils
Secobarbital	Seconal	Seconal
Phenobarbital	Luminal	Downers, Goofballs

Chronic abuse leads to tolerance, and abrupt discontinuance of use can induce a life-threatening withdrawal syndrome that can result in seizures.

Laboratory drug testing: Methods of Analysis

Immunoassays readily detect barbiturates as a class of drugs. Specific barbiturate identification can be accomplished by utilizing confirmatory methods such as gas chromatography/mass spectrometry (GC/MS) and liquid chromatography/tandem mass spectrometry (LC/MS/MS).