Barbiturates

Thiopental and Dose Calculations

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Calculate Your Dose

- **The dose** is the amount of drug taken at any one time
  - Weight of drug (e.g. 250 mg)
- **The dosage regimen** is the frequency at which the drug doses are given. Ex. 2.5 mL twice a day, one tablet three times a day…

Calculate Your Dose

- **Concentration of the drug**
  - **mg/ml:** Manufacturers usually provide concentrations of their product in milligrams (mg) of drug per (ml) of solvent

Calculate Your Dose

- **Weight of the animal**
  - It is always best to use a scale and get an accurate weight

Calculate Your Dose

Practice

- How to administer xylazine at a dose rate of 10mg/kg to a 300 g rat? You are using 2% xylazine.

Barbiturate

- **Barbiturate**s are class of drugs that act as central nervous system depressants, and can therefore produce a wide spectrum of effects, from mild sedation to total anesthesia

Barbiturate

- CNS depressant

Barbiturate

- Barbiturates have now largely been replaced by benzodiazepines in routine medical practice, mainly because benzodiazepines are significantly less dangerous in overdose

Barbiturate

Mechanism of action

- Enhance binding of GABA with its receptors, prolonged opening of the Chloride channel (influx of Cl), hyperpolarization

Barbiturate

Pharmacokinetics

- High lipid solubility → Cross blood brain barrier, rapid onset

Barbiturate

Adverse effects

- Drowsiness, disorientation, respiratory depression

Experimental protocol

- Thiopental 1 gm vial

Experimental protocol

- The loss of righting reflex (LORR) assay was used to evaluate sedative/hypnotic effects

Experimental protocol

Report

- Name of experiment