

IV Anesthetics

Intravenous anesthetics are CNS drugs and cross the blood-brain barrier due to their lipid-solubility. Barbiturate drugs such as thiopental can be used for their ultra-short-action. Benzodiazepines such as midazolam are used preoperatively and can be used for endoscopies or non-invasive procedures. They have the side effect of respiratory depression and hypotension. Ketamine is a arylcyclohexadine IV anesthetic which is an NMDA receptor antagonist, and can cause vivid nightmare-like hallucinations in adults. Opioids are give in combination with other CNS depressants to provide analgesia during procedures. Propofol is often used for rapid induction and sedation in an ICU setting, and works by potentiating GABA-A.



PLAY PICMONIC

Barbiturates

Barbara-doll

Barbiturates are ultra-short-acting IV anesthetics. Thiopental, a barbiturate, has high potency and lipid solubility for rapid entry to the brain. It is used for anesthesia induction and short surgical procedures, however it does not provide analgesia, just unconsciousness. Its rapid recovery is due to redistribution to less vascular peripheral tissues from the CNS. Side effects include respiratory and cardiovascular depression.

Benzodiazepines

Benz-dice

Benzodiazepines include midazolam, which is the most common drug used for endoscopy, and may be used with gaseous anesthetics and narcotics as part of balanced anesthesia. It is used for preoperative sedation, and side effects include severe postoperative respiratory depression, amnesia, and lowered blood pressure.

Respiratory Depression

Deflated Lungs

Midazolam, used as amnesic with other anesthetics, has a side effect of severe postoperative respiratory depression.

Hypotension

Hippo-BP

Another side effect of benzodiazepines includes decreased blood pressure, and overdose may be treated with flumazenil.

Ketamine

Kettle-man

Ketamine is classified as an arylcyclohexylamine, which is a class of PCP analogs that act as dissociative anesthetics.

NMDA Receptor Antagonist

NMDA Receptor Ant-toga

Arylcyclohexylamines, including ketamine, are PCP analogs that act by blocking the effects of glutamic acid at NMDA receptors. This interferes with pain transmission in the spinal cord, and also leads to a dissociative amnesia.

Hallucinations

Halloween-hallucination

These drugs are cardiovascular stimulants that increase cerebral blood flow and may result in disorientation, distortions of reality, and bad dreams, especially in adults.

Opioids

Poppy-droid

Opioids include morphine and fentanyl, and are given preoperatively together with inhalation and IV anesthetics to help reduce pain.

Propofol

Purple-owl

Propofol is used for sedation in the ICU, for rapid anesthesia induction, and short procedures. In addition, it causes less postoperative nausea than thiopental.

Potentiates GABA-A

Holding-open receptor for GABA-goose with A-Apple

Propofol potentiates GABA-A, and leads to rapid anesthesia induction.