Non-Barbiturates

Drug	Characteristics	Uses	Effect on CVS	Effect on CNS	Effect on RS	advantages	disadvantages
Propofol	-Alkylphenol -IV anesthetic/hypnotic -Highly lipid soluble that is combined with glycerol, egg and soyba bean Has a PH of 7	-Maintenance of anesthesia combined with opioids -IV conscious sedation for operative procedures with local anesthesia	-Decreases TPR(hypotension) , contractility and preload	-Decreases CBF and ICP -Anti-convulsant (used for status epilepticus)	Respiratory depression	-Rapid and smooth recovery -Completely eliminated from the body in 4h -Anti-emetic -Anti-pruritic -Does not precipitate histamine release(bronchodilator) -Does not trigger malignant hyperthermia -Less nausea and vomiting -Has no effect on muscle relaxants	-Respiratory depression(apnea) -Hypotension(sevre) -Venous irritation(pain on injection) -Solution is less stable(6h) -High chances of sepsis if contaminated -Myloclonic activity -Sexual fantacies and hallucination -Expensive -Allergic rxn (egg) -Addiction -Propofol infusion syndrome
Etomidate	-Carboxylated imidazole derivatives -Has anesthetic and amnetic properties but no analgesic effect highly protein bound metablized by heptic and plasma esterases to inactive products	-Rapid sequence induction to induce anesthesia or conscious sedation -IV anesthetic agent of choice for aneurysms & pt. with cardiac diseases	Relatively less Cardiovascular depression	-Decreases CBF(as thiopental) -Slightly lowers ICP -Moderate decreases in IOP	May cause brief period of apnea	-Has rapid onset of action -Less likely to cause significant drop in blood pressure than other agents	-Adrenocortical suppression N&V (40%) -High incidence of myoclonus(hiccups) -Thrmobophlebitis -Vit C def. & platelet dysfunction -No analgesia -Pain on injection

Drug	Characteristics	Uses	Effect on CVS	Effect on CNS	Effect on RS	advantages	disadvantages
Ketamine (we raise our hands when we say “amin” so it increases BP, HR, ICP.. etc)	-Analogue to phencyclidine. -N-methyl-D-aspartae receptor antagonist -More lipid soluble and less protein bound than thiopental -Metablolized by the liver and excreted by the kidney -Administered IV or IM	Induction of anesthesia, analgesic	-Increases BP, heart rate and CO, increases pulmonary artery pressure and myocardial work	-Increases CBF and ICP and increases cerebral oxygen consumption. -Increases subcortical electrical activity. -Hallucinations, illusions, nightmares..etc	-Minimal depression on the ventilatory drive. -Potent bronchodilator.	-It has minimal effect on the ventilator drive, it dissociate the thalamus from the limbic cortex -Have analgesic effect	we don’t use it in patient with coronary artery disease due to the risk of ischemia.

Barbiturates :

Drug	Characteristics	Uses	Effect on CVS	Effect on CNS	Effect on RS	advantages	disadvantages
Sodium Thiopental (Pentothal)	-IV anasthetoc/hypnotic -Yellow powder with a sulphuric smell and bitter taste -Highly lipid soluble -Bacteriostatic in water -Has a PH of 10.6to10.8 -It makes 2.5% solution in water -Metabolized in liver -Less than 1% excreted unchanged in the urine	-Induction of anesthesia -Maintenance of anesthesia for short procedures -Control of convulsion states -Regional anesthesia	-Dose related depression on myocardial function -Venous tone decreases and contribute to increase in HR and decrease in BP -Coronary BF, HR and myocardial O2 uptake increase following administration	-Decreases CBF and ICP(require higher doses) -Anti-convulsant(require higher doses) -Has an antianalgesic effect (low dose) it decreases pain threshold	-Apnea for less than 1 mins after 2 breaths -Dose related depression of response to hypercarbia and hypoxia -Laryngospasm and bronchoconstrction with light levels -Functional residual capacity is reduced by 20%	-short duration of action and lipid soluble -has little or no effect on the kidneys -it crosses placenta but has no significant effect on fetus when used for CS -the proper admisntration is free of local toxicity	-Hypotension -Respiratory depression -Tissure necrosis -Laryngeal spasm -Bronchospasm -Allergix rxn Intra arterial injections can occur and injury develps

**notes: CI are airway obstructions, porphyria amd previous hypersenesitivty.

Precautions with CVS disease or shock status, severe hepatic disease and renal disases >> they decrease albumin levels>>toxicity

Also sulphur containing drugs, acidosis and NSAID may displace the drug from albumin>>toxicity

other adjuvent anasthetic drugs:

Drug	Characteristics	Uses	Effect on CVS	Effect on CNS	Effect on RS	advantages	disadvantages
Benzodiazepens	-Benzene ring and 7-member diazepine ring -Intereact with receptors in CNS that enhances inhibitory effect of GABA -Highly protein bound	Adiminstered orally, IM and IV for sedation or induction of GA	-Minimal CVS depressant effect -BP, co and PVR slightly decrease -HR sometimes increases	-Reduces CBF ad ICP, reduces cerebral oxygen consumption -Controlling and preventing grand mal seizures -Anterograde amnesia	Depressed ventilator response to CO2	-	Anterograde amnesia

Diazepam	Premedication(oral),sedation and induction of hypnosis(IV) Well absorbed from the GI tract Lipid soluble and rapidly cross the BBB Long half life(30h)
Midazolam	Premedication(IM), sedation and induction of hypnosis(IV)
Lorazepam	Premedication(oral/IM), sedation IV Well absorbed from GI tract

** redistribution is high (3-10mins)

**rely on liver for transoformation into glucoronide

** excreted by the kindyey