Drug	When to be used	Important note
IV Anesthesia		
Barbiturate	- Induction	- Not given by artery or SC. - Good for epileptic - CI in porphyria - More laryngeal spasm
propofol (2, 6-diisopropylphenol)	- Induction - A sedative/hypnotic in OR & ICU	- Sedate the reflexes - Safe in malignant hyperthermia and porphyria - Good for PONV - Propofol infusion syndrome (more in children)
Etomidate (carboxylated imidazole)	- Induction of anesthesia in patients with cardiovascular problems	- No effect on the heart good for elderly - Not used in ICU - Adrenal crisis
Ketamine	- Induction of general anesthesia - Sedation and analgesia	- No need for analgesia if used . - CI in head trauma. - Used with hemodynamically compromised. - Good for short procedures. - Cause hallucination - IM in children

Inhalation Anesthesia		
- Various ion channels in the CNS involved in synaptic transmission (including GABAA, glycine, and glutamate receptors) may play a role. - Metabolism: hepatic. - Exhalation: the predominant route of elimination. - May precipitate malignant hyperthermia treated by hypothermia.		
Desflurane	- Good for outpatient use and obese - Affect RS and CVS	
Sevoflurane	- Pleasant smelling (suitable for children) - Agent of choice in asthma, bronchitis, and COPD. It has little effect on the heart rate	
Isoflurane	- ad:causes peripheral vasodilation and increased coronary blood flow. - Disad: Moderate solubility, so recovery from anesthesia may be delayed	
Halothane	Induction in children	Halothane hepatitis
Nitrous Oxide	Usually combined with other anesthetics. Used alone in dental procedures	CI: Air embolism. Pneumothorax. Middle ear surgery.

Local Anesthesia		
- Reversibly blocking sodium channels to prevent depolarization. - IV infusion Good For control of cardiac arrhythmias - Affect CNS, CVS, and can cause allergy - May cause seizures - U have to give oxygen for all patients		
Lidocaine	- Metabolized by the liver and excreted by kidneys - It has an antiarrhythmic effect	
Bupivacaine	- Metabolized by the liver and excreted by kidneys - More cardiotoxic	
Ropivacaine	- Less potent and less toxic with long standing - Undergoes extensive hepatic metabolism, with only 1% of the drug eliminated unchanged in the urine.	
Opioids		
- moderate sedation and profound analgesia - Large doses can produce general anesthesia. - Ad: Minimal cardiac effect (myocardial depression) - Dis ad: Miosis, RSD,Itching AND Urinary retention & biliary colic.		
Fentanyl	induction and maintenance of G.A and to supplement regional and spinal anesthesia	Ability to maintain cardiac stability
Remifentanil (Ultiva)	Used in scoliosis correction surgeries	- Good cardiac stability - The most potent
Morphine	May produce hypotension and bronchoconstriction may be a poor choice for a patient with renal failure and asthmatic.	
Naloxone!	A specific opiate receptor antagonist, binding the receptor	Increased sympathetic nervous system activity (tachycardia, hypertension, pulmonary edema, and cardiac dysrhythmias)

Neuromuscular Blocking Agents

Perform tracheal intubation.
Two types: depolarization(Succinylcholine) and non-depolarization(Mivacurium..ets)
Depolarizing : there is fasciculation, non depolarizing : Absence of fasciculation

- Pancuronium can produce a tachycardia but good in children

Succinylcholine (suxamethonium)	For short time intubation (Rapid sequence induction) ER CS	- Cause Hyperkalemia - Daul block - Kidney and lever - CI in pt with perforated eye (eye injury)! - Malignant hyperthermia. - Succinylcholine apnea - Anaphylaxis
Mivacurium		Dis ad: cvs
Atracurium	Suitable for patients with hepatic or renal failure	- Metabolized by Hofmann degradation - Laudanosine and lead to seizure.
Rocuronium	Intubation	- The most rapid onset of the clinically available - Higher incidence of anaphylactic reactions - decrease the risk of hyperkalemia

Anti Acetylcholinesterase (Neostigmine!)

They inhibit the action of the acetylcholinesterase enzyme at the NMJ resulting in increase in the concentration of Ach at NMJ
Adverse effects:Bradycardia, miosis, GI upset, nausea, bronchospasm, increased sweating, salivation & bronchial secretions

- U must give atropine to pt.

Benzodiazepines

- Enhance inhibitory neurotransmission by increasing the affinity of GABAA receptors for GABA
- Effects are terminated by redistribution
- Hydroxymidazolam cause sedation in Pt with renal failure
- Diazepam clearance is reduced in the elderly
- No analgesia
- no/ minimal effect on CVS
- Affect RS
- Risk of cleft lip and palate in the first trimester ↬ CNS depression in the neonate
- Used to : Sedation, amnesia, anxiolytic use and as premedication or as adjunct to GA

Midazolam (Dormicum)	The most potent amnestic used in the OR.	- Cause no pain during injection. - Water soluble
Diazepam (Valium)	-	- Can cause local irritation/pain - Water in-soluble
Lorazepam (Ativan)	used as a premedication	- it is longer acting
Flumazenil!		
- Reversal of sedative effects occurs within 2 min; peak effects at 10 min. Half-life is shorter than the benzodiazepine - A competitive antagonist at the benzodiazepine binding site of GABAA receptors in the CNS - CI: In patients receiving benzodiazepines for the control of seizures or elevated ICP		

Done by Mohammed Al Sahil
Good luck ^^