

Drug	MOA	Induction dose	Properties	Effects	SE	Contraindications
Propofol	GABA receptor agonist (GABA is an inhibitory NT)	1.5-2.5 mg/kg 1% conc.	-prepared in lipid emulsion (1% egg lecithin, glycerol, soybean oil) -highly lipid soluble (thus given IV only) - formulation can support bacterial growth -T1/2: 2-8m -onset 30-60s (arm-brain circulation) -rapid hepatic metabolism -renal elimination	° <u>most profound cardio depressant</u> of all induction agents °potent cardiopulmonary depressant °so, it causes hypotension by ↓contractility, ↓SVR, ↓preload (—) of sympathetic tone °antipruritic & antiemetic properties, thus used in: <ul style="list-style-type: none"> ▪ TIVA ▪ Prevention of PONV 	°pain on injection in a peripheral v., co-ad of 1% lidocaine OR injection in a central v. lessens the pain	<ul style="list-style-type: none"> - Already hypotensive patient - Pt. unable to maintain haemodynamic stability (we use ETOMIDATE in this case).
Etomidate	GABA receptor agonist	0.2-0.3 mg/kg 2% conc.	-DOC in haemodynamically UNSTABLE pts. -superior haemodynamic stability compared with other induction agents	°Stable haemodynamic status as it DOES NOT CAUSE hypotension (vasodilation) or cardiac depression °↓CMRO2 °↓CBF, ↓ICP while maintaining good CPP	°irritation or pain on injection in a peripheral v., lidocaine pre-ad, opioids co-ad or central v. injection help lessen the pain °PONV (unlike propofol) ° °↓seizures threshold °myoclonus (administer opioids or benzos to limit)	Transiently inhibits 11-B-hydroxylase, an enzyme involved with production of steroids – can cause adrenal suppression (use with caution in adrenal insufficiency or chronic steroid use) this inhibition is WORSE WITH INFUSIONS so give etomidate as a IV push

<p>Ketamine</p>	<p>NMDA receptor competitive antagonist (it's a glutamate receptor and glutamate is excitatory)</p>	<p>1-2 mg/kg (IV) 4-6 mg/kg (IM)</p>	<p><u>-ONLY IV ANAESTHETIC</u> that has ANALGESIC effect -Has several ROA: IV, IM, RECTAL, ORAL, EPIDURAL, SPINAL -Phencyclidine derivative 'angel dust'</p>	<p>°analgesia: blocking pain signals at the spinothalamic tract and at the level between the thalamus and limbic system °dissociative amnesia: patient appear conscious (eye open, staring) but unresponsive to sensory input (pain, verbal, stimulus) °(+) sympathetic NS (HTN, tachycardia, bronchodilation...) °minimal resp. depression °direct myocardial depression °potent bronchodilation °↑CBF, ↑ICP, ↑CMRO2</p>	<p>Unpleasant emergence: -disorientation -hallucination -nightmares upon emergence (Co-ad of benzos help lessen this SE)</p>	<p>Relative contraindication in pts. w/ space-occupying CNS lesions (↑ICP, CBF AND O2 CONSUMPTION)</p>
<p>Barbiturates: thiopental, methohexital</p>	<p>Enhancement of GABA receptor transmission (allosteric effect)</p>	<p>3-5 mg/kg</p>	<p>-Thiobarbiturates (thiopental) ultrashort acting and oxybarbiturate (methohexital) long acting -highly alkaline (pH=10 at 2.5%) -onset 30-60s (arm-brain circulation) -terminal hepatic elimination -used nowadays for grand mal and neonatal jaundice</p>	<p>°prolonged cognitive effect compared to propofol °↓CMRO2 °↓CBF °↓ICP</p>		<p>Pts with porphyria (it stimulates porphyrin formation and lead to acute crisis)</p>

Benzodiazepines	Enhancement of GABA receptor transmission (allosteric effect)	Midazolam 0.1–0.2 mg/kg (IV) 0.04-0.08 mg/kg (premedication) (IV)	-commonly used benzos are: midazolam, diazepam and lorazepam -T1/2: 3hrs -has an ANTIDOTE: flumazenil (specific competitive antagonist) -Usually given as premedication, sedation and anxiolytic prior to GA	°anxiolytic °amnesiac °sedative & hypnotic (at higher doses) °anticonvulsant properties <u>NOT ANALGESIC</u> °mild cardiopulmonary and upper airway reflex depression		
Dexmedetomidine (Precedex)	highly selective alpha-2 adrenergic agonist (inhibitory)	Loading: 0.5-1 mcg/kg over 10 mins Infusion: 0.2-0.7 mcg/kg	-T1/2: 2hr -used for: <ul style="list-style-type: none"> ▪ Awake fiberoptic intubation ▪ Regional anaesthesia ▪ Adjunct GA ▪ Weaning pts. Off ventilator in ICU 	°sedation °analgesia Without much respiratory depression °sympatholysis °anxiolysis		