



Department of Anesthesia Techniques
Title of the lecture: - anesthesia agents
(intravenous)



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Anesthesia agents (Intravenous)

(Practical Anesthesia)

3^{ed} stage

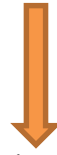
By:

Dr. Bassim Mohammed

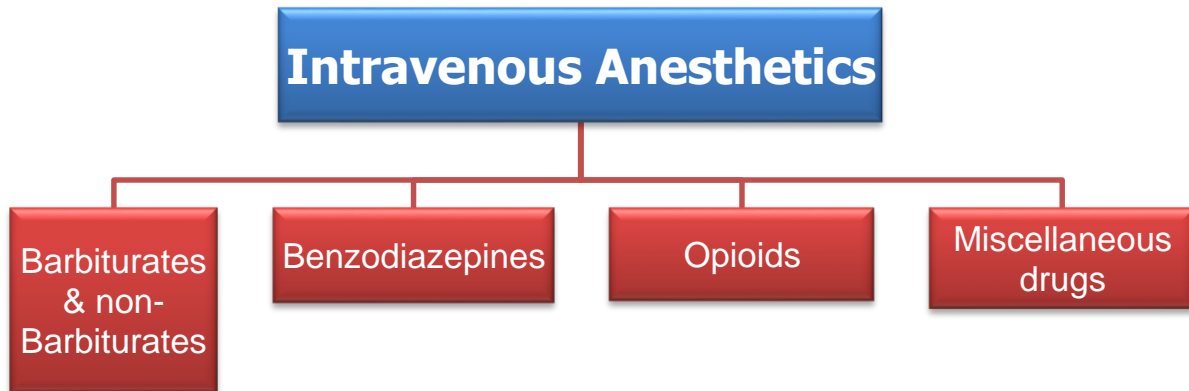
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Intravenous anesthetic drugs



(Those drugs just take in vein)



Barbiturates (thiopenton or thiopental)

Dose of thiopental is ~~dose~~ → (3-6 mg/kg) powder

1. Induction of anesthesia.
2. Treatment of status epilepticus
3. Reduction of intra-cranial pressure (ICP)
4. Intra-arterial injection (lead to sever vasospasm and sever pain it may lead to gangrene of the limb, treatment by keeping the cannula in and inject papeverine 20 mg, heparin and fluid, using 2.5% conc. Is safer)

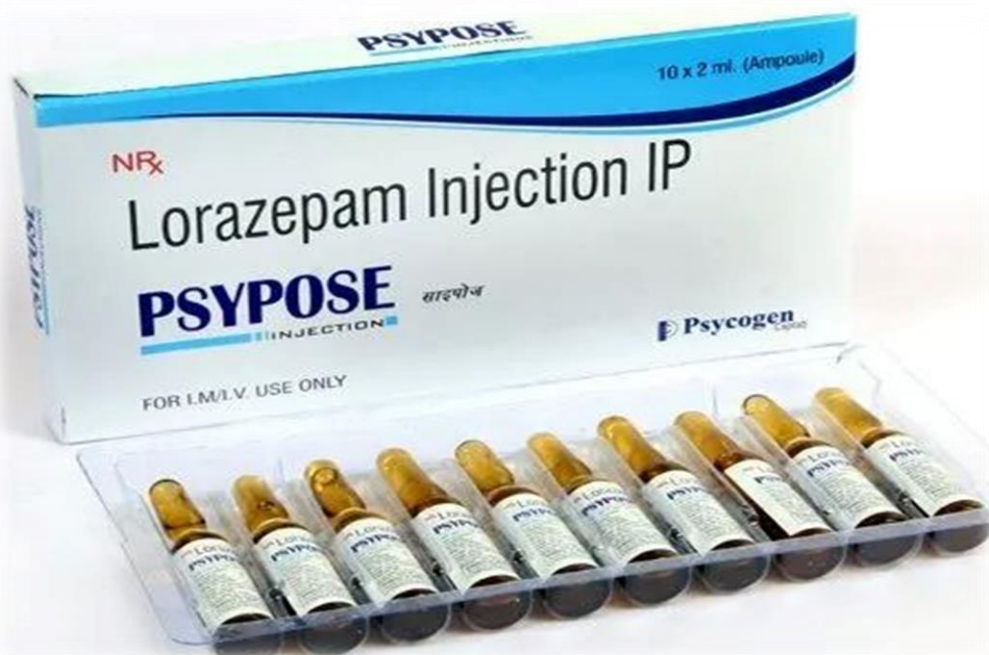
Contra-indication: -

1. Airway obstruction (epiglottis or pharyngeal tumours)
2. Previous hypersensitivity to this drug



Benzodiazepines (Midazolam, Diazepam, Lorazepam)

Agent	Use	Route ¹	Dose (mg/kg)
Diazepam	Premedication	Oral	0.2–0.5
	Sedation	IV	0.04–0.2
Midazolam	Premedication	IM	0.07–0.15
	Sedation	IV	0.01–0.1
	Induction	IV	0.1–0.4
Lorazepam	Premedication	Oral	0.05



Opioids (Morphine, hydromorphone, Fentanyl & Al, Remi, Su)

Agent	Use	Route ¹	Dose ²
Morphine	Postoperative analgesia	IM	0.05–0.2 mg/kg
		IV	0.03–0.15 mg/kg
Hydromorphone	Postoperative analgesia	IM	0.02–0.04 mg/kg
		IV	0.01–0.02 mg/kg
Fentanyl	Intraoperative anesthesia	IV	2–50 mcg/kg
	Postoperative analgesia	IV	0.5–1.5 mcg/kg
Sufentanil	Intraoperative anesthesia	IV	0.25–20 mcg/kg
Alfentanil	Intraoperative anesthesia		
	Loading dose	IV	8–100 mcg/kg
	Maintenance infusion	IV	0.5–3 mcg/kg/min
Remifentanyl	Intraoperative anesthesia		
	Loading dose	IV	1.0 mcg/kg
	Maintenance infusion	IV	0.5–20 mcg/kg/min
	Postoperative analgesia/sedation	IV	0.05–0.3 mcg/kg/min



Miscellaneous drugs

Propofol

Etomidate

Ketamine hydrochloride

Propofol: - dose → Bolus IV (2-2.5 mg/kg)
Maintenance Inf. (50-200mg/kg/min)

(amp. or vial)
propofol 10mg/ml. that's combined with glycerol, egg,
and soya bean oil
Propofol is a highly lipid soluble oil
has a pH of 7.
low incidence of nausea & vomiting.



Etomidate: - dose → 0.2-0.5 mg/kg IV

(amp. Or vial)
non-barbiturate hypnotic intravenous anesthetic agent,
does not have any analgesic properties.
Used in the induction of general anesthesia.
Metabolism in Hepatic



Ketamine: - dose → bolus IV (1-2 mg/kg)
Sedation (2.5-15 mg/kg/min)

(only vial)
It has anesthetic and analgesic effect
Water soluble.
Has a pH=3.5 - 5.5
<5% excreted unchanged in urine.



حساب جرعة التخدير

- 1- معرفة drug dose (لكل دواء الجرعة الخاصة به)
 - 2- الشكل الدوائي (يقصد به كمية mg في ml) الموجود في vial or ampoule
 - 3- المعادلة
- لحساب جرعة الدواء نستخدم المعادلة الآتية: -

(الجرعة) * dose (الوزن) * weight = mg جرعة الدواء

الحجوم	الكتل
1L = 1000 ml	1g = 1000 mg
1ml = 1 cc	1mg = 1000 mcg

س/ احسب كمية الجرعة المطلوبة من propofol لمريض يبلغ وزنه 70 kg؟
دوز البروبوفول = 2 mg/kg
وزن المريض = 70 kg

اذن المعادلة

(الجرعة) * dose (الوزن) * weight = mg جرعة الدواء

$$= 70 * 2$$
$$= 140 \text{ mg}$$

في الفيال نجد ان 200 mg في 20 ml
نأخذ منها 140 mg فقط أي بحدود 14 ml



Chose the correct answer

1- Propofol dose is: -

- a- 2-2.5 mg/kg
- b- 0.2-0.5 mg/kg
- c- 1-2 mg/kg
- d- 2.5-15 mg/kg

2- All of the following is Opioid drug, except:

- a- Morphine
- b- lorazepam
- c- Fentanyl
- d- remifentanyl

3- For thiopental all true except one:

- a- Induction of anesthesia.
- b- Treatment of status epilepticus
- c- Reduction of intra-cranial pressure (ICP)
- d- combined with glycerol

4- for ketamine all true except one:

- a- It has anesthetic and analgesic effect
- b- Water soluble.
- c- Has a pH=3.5 - 5.5
- d- highly lipid soluble oil