

VETS6302 Clinical Foundations

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Anaesthesia

Pre-Anaesthetic Preparation

Minimise Risk

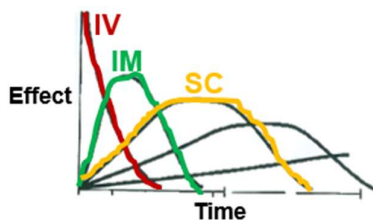
- Thorough medical history
- **SOAP**
 - ❖ Subjective Exam
 - ❖ Objective Exam
 - ❖ Assessment
 - ASA 1 – no disease
 - ASA 2 – mild disease: isn't interfering with normal activity
 - ASA 3 – systemic, moderate disease: is interfering with normal activity
 - ASA 4 – life-threatening: won't survive without surgery
 - ASA 5 – moribund
 - E – emergency
 - ❖ Plan – drugs, monitoring and support
- **Anaesthetic Risk = ASA class + competency + invasiveness**

Laboratory Tests

- **Blood O₂ Carrying Capacity** – minimum **PCV = 0.25**
- **Hydration Status** – **TP**
- **Hepatic Function** – ALT, ALP, AST, bilirubin
- **Renal Function** – **BUN**, creatinine, **USG**

Premedication

- **Advantages** – increased quality of recovery
- **Disadvantages** – delayed effect, delayed recovery, side effects
- **Routes**
 - ❖ **IV** – rapid onset → pronounced peak → short duration
 - ❖ **IM** – 5-30-minute delay → medium peak → medium duration
 - ❖ **SC** – unpredictable onset → small peak → long duration



Anticholinergics

No sedation, no analgesia and no ↓ induction / maintenance

	Advantages	Disadvantages	Contraindications
Atropine 0.02-0.04 mg/kg	<ul style="list-style-type: none"> • Prevents vagal arrhythmias (bradycardia) • ↓ respiratory secretions • ↓ salivation 	<ul style="list-style-type: none"> • Tachycardia • ↑ intraocular pressure • <i>Horses</i> – ↓ GIT motility 	<ul style="list-style-type: none"> • Tachycardia and arrhythmias • Hypertrophic cardiomyopathy • Hyperthyroidism • Eye – glaucoma, perforating
Glycopyrrolate 0.005-0.02 mg/kg	<ul style="list-style-type: none"> • Less tachycardia • Lasts longer 		

Tranquilizers

		Advantages	Disadvantages	Contraindications
Pheno-thiazines	ACE 0.01-0.05 mg/kg	<ul style="list-style-type: none"> Dose-dependent, long sedation ↓ induction / maintenance 	<ul style="list-style-type: none"> No analgesia Hypothermia Dose-dependent ↓ in B.P. 	<ul style="list-style-type: none"> Hypovolemic Boxers Advanced cardiac Advanced liver
Benzo-diazepines	Diazepam 0.2-0.5 mg/kg	<ul style="list-style-type: none"> Anticonvulsant Muscle relaxation 	<ul style="list-style-type: none"> Unreliable sedative if sole in healthy No analgesia 	Sole in healthy
	Midazolam 0.2-0.3 mg/kg	H ₂ O soluble		

Opioids

Receptors

- **Mu (μ)** – sedation, analgesia
- **Kappa** – sedation, analgesia, brachycardia, respiratory depression, hypothermia, GIT
- **Delta** – analgesia
- Types
 - ❖ Full μ Agonists – **morphine + methadone + fentanyl + pethidine**
 - ❖ Partial μ Agonists – **buprenorphine**
 - ❖ μ Antagonists – **butorphanol + naloxone**
 - ❖ Kappa Agonists – **butorphanol**

Use

- **Advantages** – sedation + analgesia + ↓ induction / maintenance + reversible
- **Disadvantages**
 - ❖ Brachycardia + respiratory depression + hypothermia + GIT
 - ❖ *Cats* – CNS (*morphine*) + hyperthermia
- **Dose-dependent** effects

α₂ Agonists

- **Detomidine + Medetomidine + Dexmedetomidine + Xylazine**
- Evaluation
 - ❖ **Advantages** – dose-dependent sedation + analgesia + ↓ induction / maintenance + reversible
 - ❖ **Disadvantages** – brachycardia + dysrhythmias (*xylazine*) + hyper → hypotension
- Contraindications – cardiac, old

Combinations

	Use	Advantages	Contraindications
Tranquiliser + Opioid	<ul style="list-style-type: none"> Neuroleptanalgesia – hypnosis + analgesia Diazepam + methadone 	<ul style="list-style-type: none"> ↑ sedation and analgesia 'Chemical restraint' 	
Dissociative + Benzodiazepines	<ul style="list-style-type: none"> Cats Aggressive dogs 	<ul style="list-style-type: none"> Rapid onset Dose-dependent sedation Analgesia 	Renal insufficiency in <i>cats</i>
Pre-Prepared	Anticholinergic + tranquiliser + opioid	<ul style="list-style-type: none"> Sedation Neuroleptanalgesia 	ASA 3-5