

KETAMINE HYDROCHLORIDE (*Ketalar*) (B3)

(Revised: May 2019)



TYPE:	Anaesthetic agent [S8]
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PRESENTATION:	200mg in 2ml – vial
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ACTIONS:	<p>Complex, multiple actions:</p> <ol style="list-style-type: none"> 1. Analgesic; sedative agent 2. Amnestic properties 3. Has bronchodilating properties 4. Does not tend to cause respiratory depression 5. Does not tend to cause hypotension (via sympathetic stimulation), unless catecholamine depleted (e.g. shock) <p>Onset of action is rapid: IV = 1 – 2 min; IM = 3 – 5 min.</p>
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USES:	ICP	1. Pain management, especially in patients who are hypotensive or unable to have narcotics, and if no other alternative is available	
	ICP	2. Particularly useful for trapped patients with limb injuries, especially if BP is borderline for narcotics	
	ICP	3. Adjunct to morphine or fentanyl, with alternating doses	
	ICP	4. Pharmacological intervention for combative/agitated patients, especially with suspected psycho-stimulant use	
		5. Initial pharmacological intervention for combative/agitated patients, who are an immediate danger to themselves or others	AP
	ICP	6. Sedation to manage airway, RSI, sedation of a previously intubated patient	

ADVERSE EFFECTS:	<ol style="list-style-type: none"> 1. Laryngospasm 2. Hypersalivation 3. Emergence reactions 4. Muscle twitching and purposeless movements 5. Respiratory depression → apnoea 6. Hypotension if given too rapidly to a hypovolaemic patient
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KETAMINE HYDROCHLORIDE (*Ketalar*) (B3) – cont.



CONTRA-INDICATIONS:

1. Known sensitivity
2. Active cardiac disease (myocardial ischaemia, LVF, uncontrolled hypertension)
(not applicable when used for RSI or to maintain sedation for ETT)
3. Children < 1 year old

PRECAUTION: ****SHOCKED PATIENT****

When using ketamine for any indication (e.g. RSI, sedation, pain, etc.) in a shocked, catecholamine-depleted patient, **consider a smaller dose** than the full weight-based dose, and be mindful that **onset of actions will be prolonged** (i.e. consider delaying subsequent dose/s to give the first dose/s a chance to work).

DOSES:

See **DOSE CHART** below

NOTES:

- **for analgesia only:** ketamine can be used with alternating doses of morphine and/or fentanyl
- **to maintain ETT and level of sedation:** ketamine may be used with alternating doses of midazolam, if ketamine alone is inadequate

SPECIAL NOTES:

- Patients who have received ketamine may still have a significant awareness, despite an appearance of unconsciousness. They may be able to hear and have some recall. Patients should be advised that they will experience strange / unusual sensations.
- Patients who become agitated may be managed with small repeat doses of midazolam.
- Ketamine is a Controlled Medicine. Use must be checked by both crew members. Under the *Medicines, Poisons & Therapeutic Goods Act and Regulations 2008*, recording and accounting for its use is a legal requirement.
- The unused portion of the dose must be appropriately disposed of and the disposal recorded.

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KETAMINE HYDROCHLORIDE (*Ketalar*) (B3) – cont.



DOSES:

KETAMINE DOSE CHART – for pain management

DOSE:	INITIAL IV	REPEAT IV	INITIAL IM	REPEAT IM	PREVIOUS OPIATES / HAEMODYNAMIC COMPROMISE
Adult	Up to 1mg/kg Increments of up to 20mg at intervals of 30 – 60 seconds	After 5 – 10 minutes; increments of up to 20mg as before. No upper limits.	1mg/kg	After 5 – 10 minutes; 1mg/kg	IV: up to 10mg increments as before IM: 0.5mg/kg
Elderly (>65yrs)	Up to 1mg/kg Increments of up to 10mg at intervals of 30 – 60 seconds	After 5 – 10 mins; increments of up to 10mg as before. No upper limits.	0.5mg/kg	After 5 – 10 minutes; 0.5mg/kg	IV: up to 5mg increments as before IM: 0.25mg/kg
Paediatric (>20kg)	Up to 1mg/kg Increments of up to 10mg at intervals of 30 – 60 seconds	After 5 – 10 minutes; increments of up to 10mg as before. No upper limits.	0.5mg/kg	After 5 – 10 minutes; 0.5mg/kg	IV: up to 5mg increments as before IM: 0.25mg/kg
Paediatric (<20kg)	Up to 1mg/kg Increments of up to 5mg at intervals of 30 – 60 seconds	After 5 – 10 minutes; increments of up to 5mg as before. No upper limits.	0.5mg/kg	After 5 – 10 minutes; 0.5mg/kg	IV: up to 2.5mg increments as before IM: 0.25mg/kg

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KETAMINE HYDROCHLORIDE (*Ketalar*) (B3) – cont.



DOSES – cont.:

COMBATIVE / AGITATED PATIENTS

ADULT / PAEDIATRIC:

ICP

When used as the first line agent: Up to 4mg/kg IM injection
When used as the second line agent: Up to 2mg/kg IM / IV / IO
 For all regimes: repeat as required.
 All IV doses are to be given slowly, over 30 seconds.
 Reduce dose by half following droperidol use (i.e. up to 1mg/kg IM / IV / IO)

ADULT ONLY:

Initial treatment of combative / agitated patients *who are an immediate danger to themselves or others:*

200mg IM injection. (Reduce dose to 100mg IM injection with age >65 years, or with general debility).

Repeat: 1mg/kg IM injection (after 5 minutes, if required).

AP

WHEN USED WITH SUXAMETHONIUM

ADULT:

ICP

1mg/kg fast push IV or IO

PAEDIATRIC:

Not used – there is no paediatric RSI

FOR INTUBATION WHEN SUXAMETHONIUM CONTRAINDICATED

ADULT:

ICP

2mg/kg fast push IV or IO

PAEDIATRIC:

Not used – there is no paediatric RSI

TO MAINTAIN SEDATION POST INTUBATION

ADULT / PAEDIATRIC:

ICP

1mg/kg IV or IO at 1 – 5 minute intervals titrated to effect

Recommended dilutions:

ADULT IV: 200mg diluted up to 10ml = 20mg/ml

ADULT IM: 100mg diluted up to 2ml. Discard excess dose before IM use.

ELDERLY pt IV: 100mg diluted to 10ml = 10mg/ml

ELDERLY pt IM: 100mg diluted up to 2ml. Discard excess dose before IM use.

CHILDREN IV: 50mg diluted to 10ml = 5mg/ml

CHILDREN IM: 50mg diluted to 2ml. Discard excess dose before IM use.