

Agents for Procedural Sedation and Analgesia

Drug	ROA	Initial Adult Dosage (mg/kg)	Injection time (minutes)	Onset of Action (minutes)	Duration of Action (minutes)	Wait time between Doses (minutes)	Comments
Sedation without analgesia							
Midazolam	IV	0.01-0.03	2-3	(1-2.5)5	10 (20-60)80	2-5	Titrate to effect Prolonged effect or delayed recovery in elderly, obese, impaired hepatic function.
	IM	0.1-0.15	10-15		60-120		Reduce dose in combination with other agents Paradoxical CNS stimulation in users with psychiatric disorders.
Diazepam	IV	0.03-0.1 (3-10 mg)	2-3	2-3	360	2-5	Regular diazepam injection contains propylene glycol → Thrombophlebitis Prolonged duration of action, especially if hepatic insufficiency.
							DIAZEMULS – less injection pain/phlebitis; Not recommended for status epilepticus (delayed onset); Contraindicated if allergy to egg, soybean or lipid emulsions.
Propofol*	IV	0.5-1	Rapidly	0.5	2-5 after discontinuation	0.5 mg/kg q3-5 min	Respiratory depression, hypotension, pain at injection site. Rapid neurologic recovery. Elderly: reduce dose by 20%; slower administration. ALLERGY ALERT: soybean oil, egg

Etomidate SAP (when others are Contraindicated)	IV	0.1-0.2		5-30 seconds	3 (5-15)	0.05 mg/kg q 3-5 min	No or little hypotension. Generally maintains cardiorespiratory stability. Use lower doses in elderly or renal/hepatic insufficiency Myoclonus. Pain at injection site. Nausea/vomiting. May cause adrenal suppression – best avoided in septic/critically ill patients.
Sedative with analgesic action							
Ketamine	IV	1-2	1-2	0.5	(5-20-60)	0.25-0.5 mg/kg q5-10 minutes	Dissociative sedative. Minimal cardiorespiratory depression. Does not inhibit protective reflexes. Sympathetic stimulation, tachycardia, hypertension (rare). Emergence reactions common in adults. Dreams, confusion.
	IM	3-5		5-10	60-120		Increased secretions. Nausea/vomiting. Prolonged duration in the elderly.
Analgesic With Sedative							
Fentanyl	IV	0.5-2 mcg/kg	3	1-3	30-60	0.5 mcg/kg q 2 min	No amnesia. Minimal histamine release and hypotension. Use reduced dose in combination with other agents.
Morphine Sandoz: 1 mg/ml 5x10 ml	IV	2.5-5	3-5	5-10	120-240	5-10	No amnesia. Hypotension. Histamine release. Prolonged duration of action.
Meperidine	IV	25-50	3-5	5	60-180	5-10	No amnesia. Hypotension. Histamine release. Nausea. Prolonged duration of action. Interacts with MAO Inhibitors
Dexmedetomidine LAST RESORT	IV	1 mcg/kg bolus over 10 min, then drip 0.5-0.75		10-15	2-3 after discontinuation		Consider preprocedural ECG. Profound bradycardia, sinus arrest, heart block, hypotension can occur. Not to those with history of cardiovascular disease, heart block, cardiomyopathy

		mcg/kg/h					<p>Anticholinergics required to pre-empt adverse cardiac events. (Glycopyrrolate 0.2 mg IV before dexmedetomidine)</p> <p>Do not administer LD in <10 minutes to avoid bradycardia.</p> <p>Monitor continuously.</p>
<p>ROA = route of administration. IV = intravenous IM = intramuscular mg = milligram mcg = microgram kg= kilogram h= hour</p> <p>*Some consider propofol to have sedative AND analgesic properties</p>							