

FMOLHS Analgosedation Guidance Document

Drug	Receptor Activity	Prolonged with Organ Dysfunction?	Advantages	Disadvantages	Notes
Analgnesia					
Fentanyl	Opioid	Hepatic	-Rapid onset of action -Easy transition to patches	-Accumulation with prolonged use -Large volume of distribution -Patches will take longer to see effect	<ul style="list-style-type: none"> • Light or deep sedation • Fentanyl patches will take 6-12 hours to see effect
Hydromorphone	Opioid	Hepatic	-Less volume with equipotent dosing	-Accumulation with prolonged use	<ul style="list-style-type: none"> • Light or deep sedation
Morphine	Opioid	Hepatic, renal		-Hypotensive effects due to histamine release -Metabolite accumulation in renal failure	<ul style="list-style-type: none"> • Light or deep sedation (not preferred)
Sedation					
Dexmedetomidine (Precedex)	Alpha-2 adrenergic agonist	Hepatic	-Opioid sparing properties	-Adverse effects (bradycardia, hypotension) -Weight based dosing, leading to high usage in obese patients	<ul style="list-style-type: none"> • Light sedation • Preferred over benzodiazepines for sedation^{3,4}
Ketamine	NMDA receptor antagonist	Hepatic, renal	-Opioid sparing properties	-Adverse effects (emergence delirium, tachyarrhythmias, hypertension, hypersalivation)	<ul style="list-style-type: none"> • Light or deep sedation • Associated analgesic properties may help with reduction in opioid usage⁵⁻⁸ • May use glycopyrrolate (Robinul) for secretions if needed **CAUTION: adverse effects associated with use**
Propofol (Diprivan)	GABA _a receptor agonist	None	-Rapid on/off	-Tubing changes q12h -Adverse effects (elevated TGs, hypotension, PRIS)	<ul style="list-style-type: none"> • Light or deep sedation • Preferred over benzodiazepines for sedation⁴
Midazolam (Versed)	GABA _a receptor agonist	Hepatic, Renal	-Short duration of action for titrations	-Increased incidence of delirium -Active metabolites accumulate in renal failure	<ul style="list-style-type: none"> • Deep sedation • Patients with renal dysfunction cannot adequately clear metabolites, leading to prolonged sedation • More risk for development of ICU delirium, prolonged time on ventilator^{3,9}
Phenobarbital	Barbiturate	Hepatic, renal		-Long half-life (~79 hours) -Propylene glycol toxicity	<ul style="list-style-type: none"> • Deep sedation • Limited literature, case reports demonstrate use as sedative in critically ill^{10,11}

FMOLHS Analgosedation Titration Parameters

Drug	Concentration	Starting Dose	Titration Parameters	Maximum Dose	Notes
Analgesia					
Fentanyl	2500mcg/ 250mL (10mcg/mL)	25 mcg/hr	25 mcg/hr every 30 minutes	300 mcg/hr	<ul style="list-style-type: none"> First line opioid, titrated to specified RASS goal Note: increased max from previous OLOL maximum May add patches up to 200mcg/hr (total 500mcg/hr) Patches will take 6-12 hours to take effect
Hydromorphone	50mg/50mL (1mg/mL)	0.5mg/hr	0.25 mg/hr every 60 minutes	4 mg/hr	<ul style="list-style-type: none"> Alternative opioid if fentanyl supply low/unavailable
Morphine	100mg/100mL (1mg/mL)	2mg/hr	0.5 mg/hr every 30 minutes	30mg/hr	<ul style="list-style-type: none"> Alternative opioid for crisis standards of care (if fentanyl and hydromorphone drips depleted)
Sedation					
Dexmedetomidine (Precedex)	400mcg/100mL (4mcg/mL)	0.2 mcg/kg/hr	0.2 mcg/kg/hr every 30 minutes	1.5 mcg/kg/hr	<ul style="list-style-type: none"> Should only be used for the purpose of LIGHT sedation RASS 0 to -2
Ketamine	1000mg/ 250mL (4mg/mL)	0.05 mg/kg/hr	0.1 mg/kg/hr every 10 minutes	2.5 mg/kg/hr	<ul style="list-style-type: none"> Titrated to specified RASS goal, used for light or deep sedation
Propofol (Diprivan)	1000mg/100mL (10mg/mL)	5 mcg/kg/min	5 mcg/kg/min every 15 minutes	50 mcg/kg/min	<ul style="list-style-type: none"> Titrated to specified RASS goal, used for light or deep sedation
Midazolam (Versed)	500mg/250mL (2mg/mL)	0.02 mg/kg/hr	0.02mg/kg/hr every 10 minutes	0.25 mg/kg/hr	<ul style="list-style-type: none"> Titrated to specified RASS goal, used for deep sedation
Phenobarbital	**IV PUSHES or ORAL**	30-120mg/day (2-3 divided doses)	[not continuous drip]	400mg/day	<ul style="list-style-type: none"> Alternative deep sedation for crisis standards of care
Paralytics					
Cisatracurium (Nimbex)	200mg/100mL (2mg/mL)	10 mg/hr	5 mg/hr every 30 minutes	37.5 mg/hr	<ul style="list-style-type: none"> First line paralytic, titrated to respiratory rate RASS should be -4 to -5 prior to initiation Note: analgesia/sedation should be increased FIRST prior to increasing paralytic
Vecuronium	20mg/100mL (0.2 mg/mL)	0.8mcg/kg/min	0.3 mcg/kg/min every 60 minutes	1.7 mcg/kg/min	<ul style="list-style-type: none"> Alternative paralytics if cisatracurium unavailable
Rocuronium	100mg/100mL (1mg/mL)	8 mcg/kg/min	0.8 mcg/kg/min every 60 minutes	12 mcg/kg/min	<ul style="list-style-type: none"> Dosing based on ideal body weight (IBW) or adjusted body weight (AdjBW) if obese [BMI >30]

References

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