UKCPA CLINICAL PHARMACY ASSOCIATION | Critical Care Group | intensive care society | 50 YEARS

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Standard Medication Concentrations for Continuous Infusions in Adult Critical Care

The Intensive Care Society supports the adoption of standard concentrations and endorses the recommendations of a multi-professional group who have published a list of concentrations with wide acceptance by critical care for this purpose [1,2,3].

Standardising concentrations represents a significant step towards improving both patient safety and efficient use of resources within critical care. It also facilitates the production of a national injectables guide to provide the end user with the information necessary to safely administer such medications [4].

The adoption of these is recommended, not mandated. It is anticipated that pharmaceutical manufacturers will begin to prepare ready to use and ready to administer products based on this list.

Medication	Concentration	Example Infusion Composition	Central or Peripheral
Morphine	1mg/mL	50mg in 50mL	C / P
	2mg/mL	100mg in 50mL	C / P
Fentanyl	50micrograms/mL	2.5mg in 50mL	C / P
Alfentanil	500micrograms/mL	25mg in 50mL	C / P
Remifentanil	50micrograms/mL	2mg in 40mL	C / P
	100micrograms/mL	5mg in 50mL	C / P
Midazolam	1mg/mL	50mg in 50mL	C / P
	2mg/mL	100mg in 50mL	C / P
Clonidine	15micrograms/mL	750micrograms in 50mL	C / P
Dexmedetomidine	4micrograms/mL	200micrograms in 50mL	C / P
	8micrograms/mL	400micrograms in 50mL	C / P
Adrenaline	80micrograms/mL	4mg in 50mL 8mg in 100mL	C C
	160micrograms/mL	8mg in 50mL 16mg in 100mL	C C
	320micrograms/mL	16mg in 50mL 32mg in 100mL	C C
Noradrenaline	80micrograms/mL	4mg in 50mL 8mg in 100mL	C C
	160micrograms/mL	8mg in 50mL 16mg in 100mL	C C
	320micrograms/mL	16mg in 50mL 32mg in 100mL	C C
Vasopressin (Argipressin)	0.4units/mL	20units in 50mL	C / P
Dobutamine	5mg/mL	250mg in 50mL 500mg in 100mL	C C
Dopamine	4mg/mL	200mg in 50mL	C
	8mg/mL	400mg in 50mL	C

Medication	Concentration	Example Infusion Composition	Central or Peripheral
Amiodarone (Load)	6mg/mL	300mg in 50mL	C
	3mg/mL	300mg in 100mL	C
Amiodarone (continuous infusion)	6mg/mL	300mg in 50mL	C
	12mg/mL	600mg in 50mL	C
	18mg/mL	900mg in 50mL	C
	0.6mg/mL	300mg in 500mL	C / (P)*
	1.2mg/mL	600mg in 500mL	C / (P)*
	1.8mg/mL	900mg in 500mL	C / (P)*
Enoximone	2.5mg/mL	100mg in 40mL	C / (P)*
Milronone	200microgram/mL	10mg in 50mL	C / (P)*
Esmolol	10mg/mL	2.5g in 250mL	C / (P)*
Levosimendan	50micrograms/mL	12.5mg in 250mL	C / (P)*
Heparin[5]	1000units/mL	20000units in 20mL 25000units in 25mL	C / P C / P
Magnesium Sulphate	0.4mmol/mL	20mmol in 50mL	C
	0.2mmol/mL	20mmol in 100mL	C / P
	0.08mmol/mL	20mmol in 250ml	C / P
Phosphate	0.4mmol/mL	20mmol in 50mL 40mmol in 100mL	C C
	0.1mmol/mL	50mmol in 500mL	C / P
Atracurium	10mg/mL	500mg in 50mL	C / (P)*
Cisatacurium	5mg/mL	150mg in 30mL	C / (P)*
Omeprazole	800microgram/mL	80mg in 100mL	C / P
Pantoprazole	800microgram/mL	80mg in 100mL	C / P
Piperacillin/ tazobactam	90microgram/mL	4.5g in 50mL	C / P
	54microgram/mL	13.5g in 250mL	C / P
Meropenem	10mg/mL	1g in 100mL	C / P
	20mg/mL	2g in 100mL	C / P
Aminophylline (maintenance)	1mg/mL	500mg in 500mL	C / P
Insulin[6]	1unit/mL	50units in 50mL	C / P

*(P) – Short term use only, high risk of phlebitis

References

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4. Medusa Injectables Guide (Link)
5. NPSA Patient Safety Alert (18): Actions that can make anticoagulation therapy safer, 2007 (Link)
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