

ARGININE HYDROCHLORIDE (l-arginine) This drug must be guardrailed

Trade Name	R-Gene 10 (Pharmacia and Upjohn)			
Class	Ammonium Detoxicant			
Mechanism of Action	Increases serum arginine concentrations and helps prevent breakdown of endogenous protein			
Indications	Urea cycle disorder			
Contraindications	Hypersensitivity to arginine Use with caution in patients with hepatic or renal impairment			
Supplied As	Arginine Hydrochloride 10% for injection (30 g / 300 mL = 100 mg/mL)			
Dilution	Drug	0.9% Saline, 5% or 10% Glucose	Total Volume	Concentration
	1g (10mL)	40mL	50mL	20 mg/mL
	Can concentrate further to a maximum of 100mg/mL if needed			
Dosage *Must chart guardrail and use Alaris pump*	Loading dose: 200-300 mg/kg IV Maintenance: 200 mg/kg/day (8mg/kg/hr) Max dose 600 mg/kg/day (25mg/kg/hour) ¹ See infusion sheet Oral Maintenance: 100 mg/kg/day after iv stabilisation			
Guardrails	Conc: Min – 20 mg/mL Max – 100 mg/mL Soft Min: 4 mg/kg/hr Hard Max: 200 mg/kg/hr Soft Max: 25 mg/kg/hr Default: 8 mg/kg/hr			
Interval	Loading Dose: Once only, given over 90 minutes Maintenance: Continuous iv infusion Can be changed to oral 6-8 hourly when stable			
Administration	IV: acute management – loading and initial maintenance Oral: maintenance when stable			
Compatible With	Sodium chloride 0.9%, Dextrose 5% and Dextrose 10%			
Incompatible With	Do not mix with any other medications			
Interactions	Nil known			
Stability	Single use bottle Discard immediately after use			
Storage	Store unopened vials at room temperature			

Monitoring	Plasma ammonia and amino acids, serum electrolytes, BUN, acid base balance, blood glucose levels.
Adverse Reactions	Arginine is very irritant to the veins and tissues, it can easily cause severe phlebitis and necrosis. Flushing, hypotension, nausea, vomiting, metabolic acidosis, hyperkalaemia, hyperglycaemia.
Metabolism	Extensively metabolised by the liver Half life = 0.75 – 7.4 hours
Comments	The injection solution can be administered orally. Will need funding approval for discharge
References	<ol style="list-style-type: none"> 1. Paediatric BNF 2016-17 2. Taketomo et al Paediatric Dosage Handbook 16th Edition 2009. 3. Micromedex Solutions 4. R-Gen Pharmacia Upjohn data sheet
Updated By	<p>A Lynn, B Robertshawe, M Meeks, July 2012</p> <p>A Lynn, B Robertshawe brand change Sep 2018. Guardrails Nov 2018</p> <p>A Lynn, M Wallenstein, B Robertshawe, A Evison May 2020</p> <p>A Lynn. B Robertshawe August 2022 (infusion sheet created)</p>