


OCTREOTIDE

Indication	
<ul style="list-style-type: none"> Refractory hyperinsulinaemic hypoglycaemia^{1,2} Refractory chylothorax² 	
INTRAVENOUS	Presentation <ul style="list-style-type: none"> Ampoule: 50 microgram/mL 100 microgram/mL 500 microgram/mL Use short acting formulation only
	Dosage (hypoglycaemia) <ul style="list-style-type: none"> IV injection^{2,3} <ul style="list-style-type: none"> 1 microgram/kg every 6 hours Titrate to response; up to maximum 10 microgram/kg every 6 hours IV infusion⁴ <ul style="list-style-type: none"> 5–25 microgram/kg/day For term infants, doses up to a maximum of 40 microgram/kg/day have been used³
	Dosage (chylothorax) <ul style="list-style-type: none"> IV infusion^{2,4} <ul style="list-style-type: none"> 1 microgram/kg/hour Titrate to response up to maximum of 10 microgram/kg/hour (increases of 1 microgram/kg/hour every 24 hours have been used)
	Preparation <ul style="list-style-type: none"> IV injection dose less than 5 microgram <ul style="list-style-type: none"> Draw up 20 microgram and make up to 1 mL total volume with 0.9% sodium chloride <i>Concentration now equal to 2 microgram/0.1 mL</i> IV injection dose 5 microgram or more <ul style="list-style-type: none"> Use undiluted IV infusion <ul style="list-style-type: none"> Draw up 125 microgram/kg and make up to 25 mL total volume with 0.9% sodium chloride <i>Concentration now equal to 5 microgram/kg/mL</i>
	Administration <ul style="list-style-type: none"> IV injection (in an emergency only) <ul style="list-style-type: none"> Draw up prescribed dose IV injection over 3 minutes^{2,5} IV infusion <ul style="list-style-type: none"> Prime the infusion line and reduce total syringe volume to prescribed dose Infuse via syringe driver pump over 15–30 minutes or as continuous infusion² <i>A 5 microgram/kg/mL solution infused at 1 mL/hour delivers 5 microgram/kg/hour</i> On completion, disconnect syringe and infusion line Flush access port at same rate as infusion



SUBCUT	Presentation	<ul style="list-style-type: none"> • Ampoule: 50 microgram/mL 100 microgram/mL 500 microgram/mL • Use octreotide short acting formulation only 	
	Dosage (hypoglycaemia)	<ul style="list-style-type: none"> • 2–5 microgram/kg every 6 to 8 hours^{1,4} • Titrate to response; up to maximum 7 microgram/kg every 4 hours^{1,4} 	
	Dosage (chylothorax)	<ul style="list-style-type: none"> • Start at 5 microgram/kg every 8 hours⁴ • Titrate to response up to maximum of 20 micrograms/kg every 8 hours⁴ 	
	Preparation	<ul style="list-style-type: none"> • Dose less than 5 microgram <ul style="list-style-type: none"> ○ Draw up 20 microgram and make up to 1 mL total volume with 0.9% sodium chloride ○ <i>Concentration now equal to 2 microgram/0.1 mL</i> • Dose 5 microgram or more <ul style="list-style-type: none"> ○ Use undiluted 	
	Administration	<ul style="list-style-type: none"> • Allow solution to reach room temperature before administration (minimises discomfort)⁵ • Draw up prescribed dose • Subcutaneous injection into the anterolateral thigh (use a subcutaneous delivery device for longer term administration) <ul style="list-style-type: none"> ○ Rotate injection sites 	
	Special considerations	<ul style="list-style-type: none"> • If indication is hypoglycaemia, initially administer via subcutaneous route <ul style="list-style-type: none"> ○ Refer to Queensland Clinical Guideline: <i>Newborn hypoglycaemia</i>⁶ ○ Consult with paediatric endocrinologist • Chylothorax: decrease infusion over 2–7 days² 	
	Monitoring	<ul style="list-style-type: none"> • Blood glucose levels² • Hepatic function¹ • Chyle volumes 	
	Compatibility	<ul style="list-style-type: none"> • Fluids <ul style="list-style-type: none"> ○ 0.9% sodium chloride (preferred infusion fluid)⁵, 5% glucose^{2,3} • Drugs <ul style="list-style-type: none"> ○ No information⁵ 	
	Incompatibility	<ul style="list-style-type: none"> • PN and fat emulsion: co-infusion with octreotide not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after 	
	Interactions	<ul style="list-style-type: none"> • Glucose not recommended as compatible fluid because of the effect octreotide has on glucose homeostasis (inhibition of insulin release)⁵ 	
	Stability	<ul style="list-style-type: none"> • Do not use if particulates and/or solution discoloured⁵ • Undiluted solution <ul style="list-style-type: none"> ○ Store at 2–8°C.⁵ Protect from light³ ○ May be stored at room temperature (below 25 °C) for up to 2 weeks when protected from light⁵ • Diluted solution <ul style="list-style-type: none"> ○ Stable for 24 hours in 0.9% sodium chloride⁵ 	
	Side effects	<ul style="list-style-type: none"> • Blood pathology: hyperglycaemia, hypoglycaemia¹ • Circulatory: arrhythmias¹ bradycardia¹ • Digestive: abdominal distension², vomiting², diarrhoea², constipation¹, steatorrhoea², reduced gall bladder motility and bile flow^{1,2} hepatic dysfunction¹ <ul style="list-style-type: none"> ○ NEC reported in term neonates³ ○ Abrupt withdrawal of subcutaneous octreotide associated with biliary colic and pancreatitis¹ • Endocrine: hypothyroidism¹ • Integumentary: local injection site reactions, rash¹ • Respiratory: dyspnoea¹ 	

Actions	<ul style="list-style-type: none"> • Synthetic octapeptide analogue of naturally occurring hormone somatostatin² • Potent inhibitor of growth hormone, glucagon and insulin², ACTH, TSH • Mechanism of action in chylothorax uncertain. May causes mild vasoconstriction of the splanchnic vessels, including hepatic venous flow, thereby reducing flow of chyle⁷
Abbreviations	ACTH: adrenocorticotrophic hormone, IV: intravenous NEC: necrotising enterocolitis, TSH: thyroid stimulating hormone,
Keywords	Hypoglycaemia, blood glucose, hyperinsulinaemic hypoglycaemia, Chylothorax, chyle

The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References

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Document history

ID number	Effective	Review	Summary of updates
NMedQ19.024-V1-R24	26/08/2019	26/08/2024	Endorsed by Queensland Neonatal Services Advisory Group (QNSAG)
NMedQ19.024-V2-R24	08/07/2020	26/08/2024	<p><u>Hypoglycaemia dosage for IV infusion</u></p> <ul style="list-style-type: none"> • Amended: FROM 1–5 microgram/kg/hour, maximum 25 microgram/kg/day TO: 5–25 microgram/kg/day, maximum dose for term baby 40 microgram/kg/day <p><u>Chylothorax dosage for subcutaneous</u></p> <ul style="list-style-type: none"> • Added dosage