Waikato District Health Board	Type: **Drug Guideline**	Document reference: **0649**	Manual Classification: **Waikato DHB Drug Guidelines**	
Title: **Dopamine for Neonates (Standard Concentration Trial)**			Effective date: **14 October 2020**	
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			Document expiry date: **14 October 2023**	

BRIEF ADMINISTRATION GUIDE

For detailed information refer to The Australasian Neonatal Medicines Formulary **dopamine** guideline

Critical Note: there are minor variations between the ANMF and Waikato DHB best practice within this drug guideline – see yellow shaded text

Indications: To improve cardiac output, blood pressure and urine output in infants with hypotension

Route: Intravenous (continuous IV infusion).
Note: Administration via an UAC is not recommended

- Supplied as dopamine hydrochloride, equivalent to dopamine 200 mg/5 mL (40 mg/mL) ampoule
- pH of dopamine is approx 4 (range 2.5 to 5)

Dose:

- Initially 2.5 microgram/kg/min
- Adjust according to response to 1 – 20 microgram/kg/min
  Dose range determined by desired clinical effect (see full guideline)
- The usual maximum recommended dose is 20 microgram/kg/min, however doses up to 50 microgram/kg/min have been used

Preparation and administration:

Continuous IV Infusion

- Select the concentration of dopamine required based on the weight of the infant and in the context of any fluid restrictions. The maximum recommended concentration is 3.2 mg/mL, however higher concentrations have been used in fluid restricted infants via a central line only.
- Dilute the appropriate volume of dopamine injection using compatible fluid (sodium chloride 0.9%, glucose 5%, glucose 10%) in accordance with the table below.
- Visually inspect solution for precipitation and discolouration; do not use if present.
- Administer by continuous infusion at the prescribed rate (using Guardrails profile) preferably via a central line but may be used peripherally in an emergency when central access is not available.
- Prepare a fresh solution at least every 24 hours or earlier if discolouration occurs.
- Do NOT flush line

Prepare dopamine according to standard concentrations below:

Final Dopamine Concentration	**0.8 mg/mL**	**1.6 mg/mL**	**3.2 mg/mL**	**6 mg/mL**
Volume of dopamine (200mg/ 5mL)	1 mL	2 mL	4 mL	4.5 mL
Volume of compatible fluid	49 mL	48 mL	46 mL	25.5 mL
Total volume	50 mL	50 mL	50 mL	30 mL

Monitoring:

- Continuous heart rate, blood pressure and ECG monitoring
- Document vital signs hourly and as required
- If administering peripherally observe for injection site reactions or signs of extravasation
- Assess skin colour and temperature of extremities frequently
- Monitor urine output
- Monitor for hypersensitivity reactions or severe adverse reactions

Competency for Administration

This procedure is carried out by, or under, the direct supervision of a registered nurse/registered midwife who holds current Waikato DHB Generic Medicine Management and IV certification as well as Neonatal specific competency NCV/NAC and NIC2.

Guardrails Information

Dopamine is Guardrail profiled on the CC pump for NICU. Following are the guardrail limits:

Guardrails Drug Name	**Dopamine**
Pump	**CC**
	All weights
Concentration (mg/ml)	
Minimum	0.4
Maximum	6
Dose rate (mcg/kg/min)	
Default	2.5
Soft minimum	0.5
Soft maximum	20
Hard max	50

References

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- Auckland DHB Newborn Services. Dopamine hydrochloride Drug Protocol. November 2011. Available from: http://www.adhb.govt.nz/newborn/DrugProtocols
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- Waikato DHB. Guardrails Database. 2018.

Note: **Printed copies are only valid on the day of printing – they are not controlled and may not be the current version in use. Please refer to the online version.**

Note: Dopamine is a high risk medication which has resulted in patient harm when used in error. Please ensure you have selected the correct product and are using the correct guideline.