dopamine

40mg/mL injection

Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

SA Health does not accept responsibility for the quality or accuracy of material on websites linked from this site and does not sponsor, approve or endorse materials on such links.

Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

This is a High Risk Medication ⚠
An overdose can be rapidly fatal.

Dose and Indications

Circulatory Support

Intravenous infusion

3 to 20micrograms/kg/minute; commence at low dose and titrate based on clinical response

ISBN number: 978-1-74243-393-6
Endorsed by: South Australian Maternal & Neonatal Clinical Network
Last Revised: 06/11/2012
Contact: South Australian Neonatal Medication Guidelines Workgroup at:
NeoMed@health.sa.gov.au

Government of South Australia
SA Health

Preparation and Administration

Intravenous Infusion

Select the strength required based on the weight of the infant in the context of any fluid restrictions. DOPamine Concentration Selection Tables can be found on the following pages of this guideline to assist prescribers to gauge which strength is best for the patient.

Dilute the appropriate volume of DOPamine injection using compatible fluid; and administer by continuous infusion. Diluted preparation is stable for 24 hours at room temperature.

The three standard concentrations to select from are:

- DOPamine 0.8mg/mL (800micrograms/mL)
- DOPamine 1.6mg/mL (1600micrograms/mL)
- DOPamine 3.2mg/mL (3200micrograms/mL)

Formulae

To calculate infusion rate (mL/hr):

$$\text{Rate (mL/hr)} = \frac{60 \times \text{dose (micrograms/kg/min)} \times \text{weight (kg)}}{\text{Strength (micrograms/mL)}}$$

To calculate the dose (micrograms/kg/min):

$$\text{Dose (micrograms/kg/min)} = \frac{\text{Rate(mL/hr)} \times \text{Strength (micrograms/mL)}}{60 \times \text{weight (kg)}}$$

ISBN number: 978-1-74243-393-6
Endorsed by: South Australian Maternal & Neonatal Clinical Network
Last Revised: 06/11/2012
Contact: South Australian Neonatal Medication Guidelines Workgroup at:
NeoMed@health.sa.gov.au

DOPamine Concentration Selection Table for 25mL syringes

DOPamine 800micrograms/mL

Dilute 0.5mL DOPamine (40mg/mL) with 24.5mL of compatible fluid (total of 25mL). The resulting solution contains 0.8mg/mL (800micrograms/mL) DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight	Approximate micrograms/kg/min									Weight (kg)
0.5	5	8	11	13	16	19	21	24	27	0.5
1	3	4	5	7	8	9	11	12	13	1
1.5	2	3	4	4	5	6	7	8	9	1.5
2	1	2	3	3	4	5	5	6	7	2
2.5	1	2	2	3	3	4	4	5	5	2.5
3	1	1	2	2	3	3	4	4	4	3

Discard remaining solution

DOPamine 1600micrograms/mL

Dilute 1mL DOPamine (40mg/mL) with 24mL of compatible fluid (total of 25mL). The resulting solution contains 1.6mg/mL (1600micrograms/mL DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight (kg)	Approximate micrograms/kg/min									Weight (kg)
0.5	11	16	21	27	32	37	43	48	53	0.5
1	5	8	11	13	16	19	21	24	27	1
1.5	4	5	7	9	11	12	14	16	18	1.5
2	3	4	5	7	8	9	11	12	13	2
2.5	2	3	4	5	6	7	9	10	11	2.5
3	2	3	4	4	5	6	7	8	9	3
3.5	2	2	3	4	5	5	6	7	8	3.5
4	1	2	3	3	4	5	5	6	7	4

Discard remaining solution

DOPamine 3200micrograms/mL

Dilute 2mL DOPamine (40mg/mL) with 23mL of compatible fluid (total of 25mL). The resulting solution contains 3.2mg/mL (3200micrograms/mL) DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight (kg)	Approximate micrograms/kg/min									Weight (kg)
1.5	7	11	14	18	21	25	28	32	36	1.5
2	5	8	11	13	16	19	21	24	27	2
2.5	4	6	9	11	13	15	17	19	21	2.5
3	4	5	7	9	11	12	14	16	18	3
3.5	3	5	6	8	9	11	12	14	15	3.5
4	3	4	5	7	8	9	11	12	13	4
4.5			5	6	7	8	9	11	12	4.5
5			4	5	6	7	9	10	11	5

Discard remaining solution

ISBN number: 978-1-74243-393-6
Endorsed by: South Australian Maternal & Neonatal Clinical Network
Last Revised: 06/11/2012
Contact: South Australian Neonatal Medication Guidelines Workgroup at:
NeoMed@health.sa.gov.au

dopamine
40mg/mL injection

DOPamine Concentration Selection Table for 50mL syringes

DOPamine 800micrograms/mL

Dilute 1mL DOPamine (40mg/mL) with 49mL of compatible fluid (total of 50mL). The resulting solution contains 0.8mg/mL (800micrograms/mL) DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight	Approximate micrograms/kg/min									Weight (kg)
0.5	5	8	11	13	16	19	21	24	27	0.5
1	3	4	5	7	8	9	11	12	13	1
1.5	2	3	4	4	5	6	7	8	9	1.5
2	1	2	3	3	4	5	5	6	7	2
2.5	1	2	2	3	3	4	4	5	5	2.5
3	1	1	2	2	3	3	4	4	4	3

Discard remaining solution

DOPamine 1600micrograms/mL

Dilute 2mL DOPamine (40mg/mL) with 48mL of compatible fluid (total of 50mL). The resulting solution contains 1.6mg/mL (1600micrograms/mL) DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight (kg)	Approximate micrograms/kg/min									Weight (kg)
0.5	11	16	21	27	32	37	43	48	53	0.5
1	5	8	11	13	16	19	21	24	27	1
1.5	4	5	7	9	11	12	14	16	18	1.5
2	3	4	5	7	8	9	11	12	13	2
2.5	2	3	4	5	6	7	9	10	11	2.5
3	2	3	4	4	5	6	7	8	9	3
3.5	2	2	3	4	5	5	6	7	8	3.5
4	1	2	3	3	4	5	5	6	7	4

Discard remaining solution

DOPamine 3200micrograms/mL

Dilute 4mL DOPamine (40mg/mL) with 46mL of compatible fluid (total of 50mL). The resulting solution contains 3.2mg/mL (3200micrograms/mL) DOPamine.

Rate (mL/hr)	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1	Rate (mL/hr)
Weight (kg)	Approximate micrograms/kg/min									Weight (kg)
1.5	7	11	14	18	21	25	28	32	36	1.5
2	5	8	11	13	16	19	21	24	27	2
2.5	4	6	9	11	13	15	17	19	21	2.5
3	4	5	7	9	11	12	14	16	18	3
3.5	3	5	6	8	9	11	12	14	15	3.5
4	3	4	5	7	8	9	11	12	13	4
4.5			5	6	7	8	9	11	12	4.5
5			4	5	6	7	9	10	11	5

Discard remaining solution

ISBN number: 978-1-74243-393-6
Endorsed by: South Australian Maternal & Neonatal Clinical Network
Last Revised: 06/11/2012
Contact: South Australian Neonatal Medication Guidelines Workgroup at:
NeoMed@health.sa.gov.au

Government of South Australia
SA Health

Compatible Fluids

Glucose 5%, glucose 10%, glucose/sodium chloride solutions, sodium chloride 0.9%

Adverse Effects

Common

Ectopic beats, vomiting, tachycardia, hypotension or hypertension

Infrequent

Abnormal ventricular conduction, bradycardia, uraemia, mydriasis, vasoconstriction, extravasation (may cause necrosis and sloughing of surrounding tissue)

Rare

Allergic reaction (due to sodium metabisulfite)

Monitoring

- Observe intravenous site for inflammation, extravasation and extreme vasoconstriction (tracking)
- Monitor closely for changes in blood pressure

Practice Points

- Correct hypovolaemia prior to administration
- Adjust the rate of infusion every 30 minutes to desired response. Titrate to discontinue
- Doses >10micrograms/kg/min can cause an increase in systemic resistance, fall in gastrointestinal blood flow and reduction in cardiac output especially in the first week of life
- DOPamine is incompatible with alkaline solutions such as sodium bicarbonate
- Phenytoin when given together with DOPamine may cause severe hypotension
- Do not bolus other drugs via DOPamine infusion
- Caution when changing IV line, avoid bolus or prolonged interruption of drug infusion
- Use cautiously in patients with heart disease, or persistent pulmonary hypertension or hepatic impairment
- Contraindicated in ventricular fibrillation or other uncorrected tachyarrhythmias

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	November 2012	current	Original version

ISBN number: 978-1-74243-393-6
Endorsed by: South Australian Maternal & Neonatal Clinical Network
Last Revised: 06/11/2012
Contact: South Australian Neonatal Medication Guidelines Workgroup at:
NeoMed@health.sa.gov.au

Government of South Australia
SA Health