Government of Western Australia
North Metropolitan Health Service
Women and Newborn Health Service

NEONATAL MEDICATION GUIDELINE	
Captopril	
Scope (Staff):	Nursing, Medical and Pharmacy Staff
Scope (Area):	KEMH NICU, PCH NICU, NETS WA,
This document should be read in conjunction with the Disclaimer.	

Quick Links

Dose	Preparation & Administration	Side Effects & Interactions	Monitoring

Restrictions

Formulary: Restricted

Requires Neonatologist or Cardiologist review within 24 hours of initiation.

HIGH RISK Medication ⚠

Use with caution – a test dose is recommended
An overdose can be fatal – associated with significant seizures, apnoea and renal complications
WARNING - dose errors have previously occurred

1 mg = 1000 microgram

Description

Angiotensin converting enzyme inhibitor

Presentation

Oral solution:

5 mg/mL = 5000 microgram/mL (Capoten®)

For all doses less than 1000 microgram (1mg) the captopril 5000 microgram/mL (5 mg/mL) oral solution must be diluted. Refer to preparation section.

Storage

Store oral solution in the refrigerator between 2-8 degrees.

Discard oral solution 28 days after opening bottle

Dose

Management of heart failure (reduction in afterload), Hypertension

For all doses less than 1000 microgram (1mg) the captopril 5000 microgram/mL (5mg/mL) oral solution must be diluted. Refer to preparation section.

Oral:

Monitor blood pressure during administration

< 37 weeks

Initial test dose: 10microgam/kg.

If tolerated can give 10microgram/kg every 8 hours

Titrate slowly according to response

Maximum 300microgram/kg in 24 hours

≥ 37 weeks

Initial test dose: 10-50microgram/kg

If tolerated can give 10-50microgram/kg every 8-12 hours

Titrate according to response

Maximum of 2000microgram/kg in 24 hours

Dose Adjustment

Renal Impairment: Dose reduction required in renal impairment

Preparation

5 mg/mL = 5000 microgram/mL

For all doses less than 1000 microgram (1mg) the captopril 5000 microgram/mL (5mg/mL) oral solution must be diluted as follows:

Dilute 0.2 mL of captopril 5000 microgram/mL (5 mg/mL) oral solution up to 10 mL with water.

FINAL CONCENTRATION is 100 microgram/mL

Discard any remaining solution after each dose is administered.

Administration

Extremely unpalatable – mix well with part of a feed (this is not necessary if being fed by intragastric tube)

Separate dose from remainder of feed by 1 hour as feeds may limit absorption

Side Effects

Common: cough, hypotension, raised creatinine

Serious: hyperkalaemia, angioedema /anaphylaxis, apnoea, seizures

Interactions

May cause false positive Coombs test if sodium nitroprusside is used in urine acetone determination

High risk of hyperkalaemia if used with potassium sparing diuretics (i.e. spironolactone) or potassium supplementation

Pentoxifylline and sildenafil may increase captopril effects

Contraindicated in renal artery stenosis

Monitoring

Immediately prior to administration: document vital signs and observations.

Initial dose (including "test" dose):

Observations:

1. Check blood pressure every 30 minutes for 2 hours.

2. If the patient appears well and there is no clinically significant hypotension, continue as below.

Continuing treatment:

Observations:

1. If the dose has been changed, check blood pressure every 30 minutes for 2 hours. Then, check blood pressure every 4 hours.

2. If the dose has not changed, check blood pressure every 4 hours.

Note: Medical team may dictate different observation requirements, depending on the patient's clinical condition.

Other recommended monitoring:

Urea and electrolytes (particularly potassium), creatinine, liver function

Comments

Onset of action within 15 minutes, peak action within 30-90 minutes.

Neonatal response to captopril is variable and neonates can become profoundly hypotensive even with a small dose.

Serious dose related errors have occurred previously, please check doses carefully.

Lower strength Captopril solution can be supplied by Pharmacy on discharge for patient/caregiver of neonates.

Related Policies, Procedures & Guidelines

Paediatric Captopril Monograph

References

Truven Health Analytics. Captopril. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2019 [cited 2020 Sept 04]. Available from: https://neofax.micromedexsolutions.com/

Ainsworth SB. Neonatal formulary 7: drug use in pregnancy and the first year of life. Seventh ed. Chichester (West Sussex): John Wiley & Sons Inc.; 2015. P124.

Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index : a universal resource for clinicians treating pediatric and neonatal patients. 24th ed. Hudson (Ohio): Lexicomp; 2019. P346-9.

British National Formulary. BNF for Children. 2018-19 ed. London, UK: BMJ Group and Pharmaceutical Press; 2018.

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