



## MONOGRAPH

### GLYCERYL TRINITRATE

<b>Scope (Staff):</b>	Medical, Pharmacy, Nursing, Anaesthetic Technicians
<b>Scope (Area):</b>	All Clinical Areas

#### Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [DISCLAIMER](#)

#### QUICKLINKS

[Dosage/Dosage Adjustments](#)

[Administration](#)

[Compatibility](#)

[Monitoring](#)

#### DRUG CLASS

Vasodilator

#### INDICATIONS AND RESTRICTIONS<sup>2</sup>

- Control of hypertension
- Treatment of angina pectoris
- Treatment of congestive heart failure
- Management of myocardial infarction
- Management of anal fissure

#### CONTRAINDICATIONS<sup>2</sup>

- Hypersensitivity to glyceryl trinitrate or any component of the formulation.
- Severe anaemia and arterial hypoxaemia
- Raised intracranial pressure (e.g. head injury)
- Hypovolaemia, hypotension
- Constrictive pericarditis, aortic or mitral stenosis, and pericardial tamponade, hypertrophic cardiomyopathy
- Toxic pulmonary oedema
- Treatment with phosphodiesterase-5-inhibitor, e.g. sildenafil

## PRECAUTIONS<sup>2</sup>

- Anaemia
- Obstructive heart failure
- Hypothermia
- Hypothyroidism
- Hypoxaemia
- Malnutrition
- Susceptibility to angle closure glaucoma

## FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- Ampoule:
  - Concentrated solution for injection: **50 mg/10 mL – Must be diluted<sup>2</sup>**
  - Note: contains ethanol and propylene glycol
- Sublingual tablet
  - 300 micrograms
- Ointment
  - 0.2% rectal ointment

Imprest locations: [Formulary One](#)

## DOSAGE & DOSAGE ADJUSTMENTS

**Neonates:** [Refer to Neonatal Medication Protocols](#)

### Intravenous – Critical care areas only

Initially 0.2 - 0.5 microg/kg/minute by continuous IV infusion. Increase by 0.5 - 1 microg/kg/minute every 5 - 15 minutes to desired effect.<sup>3, 6</sup>

The usual dose range is 1 - 5 microg/kg/minute<sup>3, 6</sup>. The usual maximum rate is 10 microg/kg/minute.<sup>6</sup>

Avoid abrupt cessation of infusion due to potential for rebound effects<sup>3</sup>

**There is currently no paediatric specific sublingual dosing information in standard references. The below dosing information is for an ADULT.**

### Sublingual tablet

**ADULT dosing:** 300-600 microg sublingually, spit out remainder of tablet once relief of symptoms is achieved. Do not swallow.<sup>5</sup>

**Rectal ointment**

Apply a “grain of rice” amount of ointment to the anal fissure twice daily. Usual treatment course is one to three months.<sup>4</sup>

**RECONSTITUTION & ADMINISTRATION****Intravenous Infusion:**

Patient's Weight	Concentration (In Glucose 5% or Sodium Chloride 0.9%)	Notes
<b>10 kg or less</b>	6 mg in 30 mL (0.2 mg/mL)	In a 3 kg patient, 0.5 microg/kg/min = 0.45 mL/hr
<b>Above 10 kg</b>	50 mg in 50 mL (1 mg/mL)	In a 20 kg patient, 0.5 microg/kg/min = 0.6 mL/hr

- Not available as pre-filled syringes – to be prepared ad-hoc in the clinical area.
- 1 mg/mL preparation must be administered via a central line.<sup>3</sup>
- Significant adsorption onto PVC - use non-PVC giving sets.<sup>2</sup>
- In-line filters should NOT be used.<sup>2</sup>

**Sublingual:**

**Tablet:** Tablet is placed under tongue. Do not swallow. Spit out remainder after relief of symptoms<sup>4</sup>

**Topical:**

Apply a grain of rice sized amount of ointment directly to anal fissure. Wash hands after application<sup>5</sup>

**COMPATIBILITY (LIST IS NOT EXHAUSTIVE)****Compatible fluids:**

Glucose 5%, glucose/saline combinations, sodium chloride 0.9%, Hartmann's solution<sup>2</sup>

*Only commonly used drugs are listed below. This is not a complete list of incompatible drugs.*

[Compatibilities of IV drugs](#) must be checked when two or more drugs are given concurrently.

**Note: International references such as Clinical Pharmacology Online may refer to glyceryl trinitrate as “nitroglycerin”.**

**COMPATIBLE drugs:**

Adrenaline, dexmedetomidine, dobutamine, dopamine, milrinone, noradrenaline, potassium chloride.<sup>1</sup>

**INCOMPATIBLE drugs:**

Alteplase, diazepam, hydralazine, phenytoin, propofol, sulfamethoxazole-trimethoprim, tramadol.<sup>1</sup>

**MONITORING**

Monitor blood pressure and heart rate during intravenous infusions<sup>2</sup>

**ADVERSE EFFECTS**

**Common:** Headache, flushing, palpitations, orthostatic hypotension, fainting, peripheral oedema

**Infrequent:** Contact dermatitis (topical), rebound angina<sup>4</sup>

**STORAGE**

**Tablets:** Store tablets away from heat, light, moisture. Tablets must be discarded three months after opening the bottle.<sup>4</sup>

**Ampoules:** Store below 25°C, protect from light.<sup>2</sup>

**INTERACTIONS**

This medication may interact with other medications; consult PCH approved references (e.g. [Clinical Pharmacology](#)), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information. Note: *International references such as Clinical Pharmacology Online may refer to glyceryl trinitrate as “nitroglycerin”.*

*\*\*Please note: The information contained in this guideline is to assist with the preparation and administration of **glyceryl trinitrate**. Any variations to the doses recommended should be clarified with the prescriber prior to administration\*\**

**References**

1. Bennett PN. Clinical Pharmacology Online, 2023 Elsevier; accessed online July 2023.
2. Ltd MAP. MIMS Online, 2023. Australia: MIMS AUSTRALIA PTY LTD; Accessed July 2023.
3. Royal Pharmaceutical Society of Great Britain, Royal College of Paediatrics and Child Health, British Medical Association, Neonatal and Paediatric Pharmacists Group. BNF for children 2023. Accessed online July 2023.
4. Cevik M, Boleken ME, Koruk I, Ocal S, Balcioglu ME, Aydinoglu A, et al. A prospective, randomized, double-blind study comparing the efficacy of diltiazem, glyceryl trinitrate, and lidocaine for the treatment of anal fissure in children. Pediatr Surg Int. 2012; 28(4):411-6. DOI:10.1007/s00383-011-3048-4
5. Buckley N, Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists, The Royal Australian College of General Practitioners, Pharmaceutical Society of Australia. Australian medicines handbook 2023 Accessed online July 2023.
6. UpToDate [Internet]. Lexicomp. 2024. Available from: [UpToDate – Glyceryl Trinitrate Pediatric](#)

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