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**Glyceryl trinitrate tablets for angina / chest pain in adults** **SESLHDPR/455**

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**POLICY STATEMENT**

The Registered Nurse (RN) / Registered Midwife (RM) is authorised to instigate nurse/midwife initiated medication without an authorised prescriber's order under the specific circumstances set out in the **INDICATIONS** section and provided there are no contraindications present.

It is important for nursing and midwifery staff to remain aware that:

- Minor ailments may be symptoms of other more serious diseases or may be adverse reactions to medication already prescribed
- Nurse-initiated medication may interact with the patient's prescribed medication
- The maximum daily recommended dose of the medication must not be exceeded<sup>1</sup>

The administering nurse/midwife must record the administration on the 'nurse initiated medicines' section of an approved paper or electronic medication chart.

If the patient continues to require the medication (i.e. more than two doses in 24 hours) then a medical officer (MO) must be consulted and a regular or PRN order obtained.

A change in the patient's condition such as newly occurring or increasing severity of symptoms must be reported to the MO and investigated.

**INDICATIONS**

Angina (chest pain) in adults

All chest pain should be initially treated as myocardial ischaemia until proven otherwise

**CONTRAINDICATIONS**

Cerebral haemorrhage

Head trauma

Patients taking concurrent phosphodiesterase 5 inhibitors (see drug interactions)

If systolic blood pressure is < 100 mmHg:

- Do not administer glyceryl trinitrate
- Initiate a Clinical Emergency Response Systems call (Clinical Review, Rapid Response or Code Blue) call
- If the patient is symptomatic to the hypotension, lie the patient flat, and consider the need to initiate a Code Blue call.

**PRECAUTIONS**

N/A

**HISTORY/ASSESSMENT**

Assess the patient for pain location, duration, nature, precipitation factors and associated symptoms. Ask the patient to rate the pain on a pain scale where 0 is no pain and 10 is the worst pain imaginable.

Position the patient comfortably, preferably sitting upright.

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Assess vital signs, including pulse, respirations, blood pressure and oxygen saturation. If the patient is short of breath, in respiratory distress or has a SpO<sub>2</sub> < 95%, administer oxygen via nasal prongs at 3-4 L/min or via Hudson mask at 6-8 L/min.

Record a 12 lead ECG as soon as practical during the episode of chest pain.

A CERS call **must** be initiated if:

- The patient breaches Between the Flags criteria, or
- The nurse or patient's family/significant others are concerned about the patient's condition

**PROTOCOL/ADMINISTRATION GUIDELINES**

<b>Caution: CHECK for allergies and/or contraindications</b>			
<b>Drug</b>	<b>Dose</b>	<b>Route</b>	<b>Frequency</b>
<b>Glyceryl trinitrate</b>	<b>300 to 600 microg</b>  (= half to one 600microg tablet <b>OR</b> one to two 300microg tablets)	<b>Sublingual</b>	<b>Once, and repeated in 5 minutes if not relieved by first dose</b>
<p>-The patient should be on a bed/trolley at the time of administration in case of significant drop in blood pressure.</p> <p>-If the patient is fasting or has a dry mouth, rinsing the mouth with water prior to administration of sublingual glyceryl trinitrate will result in more rapid absorption.</p> <p>- Use the lower dose (300 microg) if the patient has never received nitrates, has a SBP between 100-110 mmHg or is known to have a sensitive blood pressure response to nitrates.</p> <p>- Repeat dose after 5 minutes if the patient still has pain, provided SBP remains ≥ 100mmHg and within 20mmHg of the patient's normal baseline blood pressure.</p> <p>- If pain is unrelieved following 2 doses of sublingual glyceryl trinitrate initiate a CERS call.</p> <p>- Check the strength of the tablets prior to administration to ensure the correct dose.</p>			

**MONITORING - POTENTIAL ADVERSE EFFECTS / INTERACTIONS**
**Monitoring:**

Recheck vital signs at least every 3-5 minutes during an episode of chest pain, and more frequently if warranted by the patient's condition.

In cases of hypotension, lie the patient flat and elevate the legs.

If the patient's pain is not completely relieved within 5 minutes of administration of the first dose of sublingual glyceryl trinitrate, administer a second dose.

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A CERS call **must** be initiated:

- If the patient's pain is unrelieved by oxygen and sublingual glyceryl trinitrate within 10 minutes
- The patient breaches Between the Flags criteria
- The nurse or patient's family/significant others are concerned about the patient's condition

Notify the medical officer of the patient's pain, even if it has been relieved.

**Adverse Effects:**

Headache is the most frequent adverse effect. Headache can be minimised by removing undissolved portions of the glyceryl trinitrate tablet from the patient's mouth if chest pain has resolved. Headache can be treated by administration of simple analgesics. Some patients may be very sensitive to the effects and may have an exaggerated hypotensive response. Consider the need to initiate a CERS call. As glyceryl trinitrate has a short half-life, these effects are usually short-lived.

**Drug interactions**

*Alcohol, antihypertensives, tricyclic antidepressants, phenothiazines, levodopa, opioid analgesics, hydralazine, calcium channel blocking agents, minoxidil and prazosin.*

- The risk of orthostatic hypotension and syncope may be enhanced.

**Sympathomimetics.**

- Concurrent use may reduce the antianginal effects, Nitrates may counteract the pressor effect of sympathomimetics, possibly resulting in hypotension.

**Phosphodiesterase 5 inhibitors.**

- Nitrates potentiate the hypotensive effects; combinations may result in profound hypotension or MI and are contraindicated. Do not give a nitrate unless it is >24 hours since the last dose of sildenafil or vardenafil (>48 hours for tadalafil); a longer interval may be needed if PDE5 inhibitor half-life is prolonged, e.g. by a drug interaction, in the elderly. Monitor carefully.

**DOCUMENTATION**

A record of the administration must be made on the approved paper or electronic medication chart noting that the medication was nurse initiated.

A further record of the medication administered including indication, dose and effect must be included in the patient's health care record.

All episodes of chest pain must be documented in the patient's health care record.

Documentation must include:

- time of chest pain onset
- therapy administered
- time of relief of chest pain
- all communications with medical staff

All ECG's recorded during chest pain must be placed in the patient's health care record and reviewed by a MO.

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**PRACTICE POINTS**

- Onset of action is 3 to 5 minutes
- Glyceryl trinitrate should be stored in the original glass bottle which should be kept closed when not in use. For some brands, once opened, any unused tablets must be discarded after 3 months. Refer to product packaging for details.
- Not all brands of tablets are scored. Tablets should not be halved if not scored. To achieve a 300microg dose, use a 300microg tablet or half of a scored 600microg tablet.

**REFERENCES/FURTHER READING**

1. [PD2013\\_043 Medication Handling in NSW Public Health Facilities](#)
2. Pfizer (USA). Full prescribing information for Nitrostat. Last updated February 2018.

**REVISION and APPROVAL HISTORY**

Date	Revision Number	Author and Approval
July 2015	DRAFT	Pharmacy Department, Prince of Wales Hospital
September 2015	1	Approved by SESLHD Drug & QUM Committee
May 2018	2	Reviewed and updated by QUM Lead Pharmacist
May 2018	2	Approved by Drug and Quality Use of Medicines Committee
September 2021	DRAFT 3	Reviewed by nursing and pharmacy staff. Minor terminology & reference updates (PACE to CERS)
October 2021	3	Approved by SESLHD Quality Use of Medicines Committee