Approved by Quality & Patient Care Committee
17 May 2018

GLYCERYL TRINITRAE (GTN) BY INFUSION

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- To ensure the safe prescribing and administration of glyceryl trinitrate.

2. PATIENT

- A woman requiring treatment of:
  - Angina/acute coronary ischaemia
  - Congestive heart failure/pulmonary oedema
  - Intravenous control of blood pressure
  - Uterine relaxation e.g. delivery of second twin, external version of breech

3. STAFF

- Medical, midwifery and nursing staff

4. EQUIPMENT

- GTN 50mg in 10mL injection.

5. CLINICAL PRACTICE

Prescribing:

- Prescriptions of GTN Infusion must be made in consultation with Anaesthetic Registrar or physician
- Prescribe GTN 50 mg in 500 mL of glucose 5% on NSW Health Fluid Chart or Obstetric & Gynaecoogical HDU High Acuity Chart. Commence infusion at 3-5mL/hour. Document the parameters by which nursing staff are permitted to titrate the rate of infusion.

Administration:

- Not for direct intravenous injection.
- Add GTN 50mg into a 500 mL 5% glucose **non-PVC** fluid bag (free flex bag- available in ACC or RHW AHDR). This results in a 1mg/10mL solution of GTN. **Invert bag several times to mix well.**
- Administer using a low absorption giving set and by an infusion pump in order to prevent an inadvertent bolus or flush.
- Commence at 3−5mL/hour and increase rate as per parameters prescribed by the anaesthetist.
- Administer via a dedicated line. Do not co-administer with other drugs.
- Ensure the fluid bag is changed every 24 hours.

Monitoring:

- Monitoring of the patient should take place in Acute Care Centre.
- Monitor Blood Pressure (BP) every 5 minutes after commencing infusion and with any rate change until BP is stable, then monitor every hour. If systolic BP <100 mm/Hg inform anaesthetist.

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6. DOCUMENTATION

- Integrated Clinical Notes
- Medication Chart
- Observation Chart
- Obstetric & Gynaecoogical HDU High Acuity Chart
- NSW Health Fluid Chart

7. EDUCATIONAL NOTES

Action:

- Relaxes smooth muscle: Lower doses affect venous beds preferentially, higher doses (> 2 microgram/kg/minute) affect venous and arterial.
- Decreases preload and afterload.
- Coronary artery dilation.
- Nitroglycerin reduces myocardial oxygen demand while enhancing myocardial oxygen delivery.
- Prevention of coronary artery spasm following cardiac surgery.
- Uterine relaxation.

Adverse effects: (dose-dependent)

- Postural hypotension
- Tachycardia
- Headache
- Pallor
- Sweating
- Dizziness
- Nausea and vomiting
- Prolonged bleeding time (probably not clinically relevant)

Comments:

- GTN has a short half-life of 1-4 minutes, duration of action 3-5 minutes.
- Contraindicated in acute myocardial infarction, hypovolaemia, severe hypotension, marked anaemia, closed angle glaucoma, constrictive pericarditis and pericardial tamponade, increased intracranial pressure.
- When used for uterine relaxation, weaning is not required
- For cardiac indications: wean by reducing rate by 1 mL each hour until complete.
- Leave infusion connected for further 1 hour (in case pain returns).
- Incompatible with PVC infusion systems.

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Medication- Administration
- Labelling of injectable medicines, lines, fluids
- Acute Care – Patient Acuity Guide

GLYCERYL TRINITRAE (GTN) BY INFUSION cont'd

9. RISK RATING

- High

10. NATIONAL STANDARD

- Medication Safety

11. REFERENCES

St.Vincents Hospital, Sydney Glyceryl Trinitrate (GTN) policy
Prince of Wales Hospital, Sydney Glyceryl Trinitrate (GTN) policy
Australian Injectable Drugs Handbook, 6th Edition, Society of Hospital Pharmacists of Australia 2015
MIMSOnline accessed via CIAP 1/3/16

REVISION & APPROVAL HISTORY

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