

GLYCERYL TRINITRATE

SYNONYMS	Nitroglycerine, GTN
BRAND NAME	GLYCERYL TRINITRATE CONCENTRATE INJECTION DBL, WOCKHARDT
DRUG CLASS	Nitrate
AVAILABILITY	DBL ampoule contains 50 mg/10 mL of glyceryl trinitrate. Also contains ethanol and propylene glycol. ¹ Wockhardt vial contains 50 mg/50 mL of glyceryl trinitrate. Also contains glucose, glucose monohydrate and propylene glycol. Contains 2.53 g of glucose. ¹ The solution is clear and colourless. ¹
pH	3–6.5 ²
PREPARATION	Dilute before use ¹
STABILITY	Ampoule and vial: store below 25 °C. Protect from light. ¹ Do not freeze. ² Infusion solution: concentrations up to 800 microgram/mL are stable for 24 hours below 25 °C in glass bottles. ^{1,2} Stable in polypropylene syringes for 24 hours below 25 °C. ²
ADMINISTRATION	
IM injection	Not recommended
SUBCUT injection	Not recommended
IV injection	Not recommended ¹
IV infusion	Dilute the 50 mg ampoule or vial to 500 mL with a compatible fluid to make a concentration of 100 microgram/mL, or dilute 50 mg ampoule or vial to 100 mL to make a concentration of 500 microgram/mL, or dilute the 50 mg/10 mL ampoule with 40 mL of a compatible fluid to make a concentration of 1 mg/mL. See SPECIAL NOTES Start the infusion at a rate of 5–10 microgram/minute and titrate to effect. ^{1,3} If possible, use non-PVC bags and giving sets to reduce adsorption of glyceryl trinitrate onto the plastic. ¹ If PVC bags and giving sets are used, titrate the dose and rate to effect. ²
IV use for infants and children	Dilute to 400 microgram/mL or weaker in a compatible fluid and administer by continuous infusion using a rate-controlled infusion device. ^{4,5} A maximum concentration of 1 mg/mL may be infused into a central venous access device. ⁴
COMPATIBILITY	
Fluids	Glucose 5% ^{1,2} , glucose in sodium chloride solutions ² , Hartmann's ² , Plasma-Lyte 148 via Y-site ⁶ , sodium chloride 0.9% ^{1,2} , sodium chloride 0.45% ²
Y-site	Giving other drugs via Y-site may change the infusion rate of glyceryl trinitrate. At 400 microgram/mL or less of glyceryl trinitrate ² : amiodarone ² , argatroban ² , bivalirudin ² , ceftolozane-tazobactam ² , cisatracurium ² , dexmedetomidine ² , eptifibatide ¹ , isavuconazole ² , levosimendan ⁷ , linezolid ² , micafungin ² , milrinone ² , remifentanyl ² , tirofiban ² , vecuronium ² At 0.5 mg/mL or 1 mg/mL of glyceryl trinitrate: insulin (Novorapid) ⁸ At 1.6 mg/mL of glyceryl trinitrate ⁹ : amikacin ⁹ , atracurium ^{2,9} , azathioprine ⁹ , aztreonam ⁹ , buprenorphine ⁹ , calcium chloride ⁹ , calcium gluconate ⁹ , cefalotin ⁹ , cefazolin ⁹ , cefotaxime ⁹ , cefoxitin ⁹ , ceftazidime ⁹ , ceftriaxone ⁹ , ciclosporin ⁹ , clindamycin ⁹ , dexamethasone ⁹ , digoxin ⁹ , dobutamine ^{2,9} , dopamine ^{2,9} , ephedrine sulfate ⁹ , erythromycin ⁹ , esmolol ^{2,9} , fentanyl ⁹ , fluconazole ^{2,9} , ganciclovir ⁹ , gentamicin ⁹ , haloperidol lactate (in glucose) ^{2,9} , heparin sodium ² ,

hydrocortisone sodium succinate⁹, labetalol^{2,9}, lidocaine^{2,9}, magnesium sulfate⁹, methylprednisolone sodium succinate⁹, metoclopramide⁹, midazolam^{2,9}, morphine sulfate⁹, noradrenaline (norepinephrine)⁹, potassium chloride⁹, ranitidine^{2,9}, sodium bicarbonate⁹, sodium nitroprusside^{2,9}, suxamethonium⁹, tobramycin⁹, vancomycin⁹, verapamil⁹

INCOMPATIBILITY

Fluids No information

Drugs Alteplase², daptomycin¹⁰, caffeine citrate², hydralazine², hydroxocobalamin¹⁰, metoprolol², tramadol¹

SPECIAL NOTES

Onset of action is 1 to 2 minutes, duration of effect is 3 to 5 minutes and half-life is less than 1 to 4 minutes.¹

Monitoring of blood pressure and heart rate every 2-3 minutes is required during titration. Continuous cardiac monitoring may be required.¹ Check your local guidelines.

More concentrated solutions may not be suitable for all indications.¹¹

REFERENCES

1. Product information. Available from www.tga.gov.au. Accessed 03/03/2020.
2. McEvoy GK editor. Handbook on injectable drugs. 20th ed. Bethesda, MD: American Society of Health-System Pharmacists; 2018.
3. Cardiovascular [March 2018]. In eTG complete [internet]. Melbourne,Vic: Therapeutic Guidelines Ltd; April 2019.
4. Paediatric Formulary Committee. BNF for children. Basingstoke, UK: Pharmaceutical Press; 2018-2019.
5. Phelps SJ, Hageman TM, Lee KR, Thompson AJ. Pediatric injectable drugs. 11th ed. Bethesda, MD: Am Soc Health-System, Pharmacists; 2018.
6. OneCall Medical Information Service. Y-Site compatibility of intravenous drugs with Plasmalyte 148. Toongabbie, NSW: Baxter; 2015.
7. Simdax. NZ product information. Auckland, New Zealand: Pharmacy Retailing (NZ) Limited; May 2019.
8. Voirol P, Berger-Gryllaki M, Pannatier A, Eggimann P, Sadeghipour F. Visual compatibility of insulin aspart with intravenous drugs frequently used in ICU. *Eur J Hosp Pharm* 2015; 22: 123-4.
9. Trissel LA, Leissing NC. Trissel's Tables of physical compatibility. Lake Forest IL: Multimatix; 1996.
10. Glyceryl trinitrate. In: IV index [internet]. Trissel's 2 clinical pharmaceuticals database (parenteral compatibility). Greenwood Village, CO: Truven Health Analytics. Accessed 23/05/2019.
11. Reed MJ. Administering a glyceryl trinitrate infusion: big is not always best. *Emerg Med J* 2007; 24: 423-4.